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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LVII — July 2, 1921 — No. 1

In the Billion Class

ACCORDING to corrected figures of the bureau of the census California had on January 1, 1920, 117,690 farms. This varies but little from the figures given in the Cultivator of August 28, 1920, when the bureau released preliminary figures indicating the number as 117,993. The value of farm lands, with farm buildings, was $3,073,811,109, as against $1,450,601,488 in 1910.

In 1910 there were in this state 88,197 farms. There was not only increase in number of farms but in acreage, for the acreage on January 1, 1920, was 29,365,667; in 1910, 27,931,444.

Considering value of farm lands and buildings, California stands in the billion dollar class. We may remark that there are something over a score of states of the Union in this billion dollar class, and an even dozen with a valuation of over two billions. The topper of the whole list is Iowa, with $7,601,772,290. Little Rhoda stands at the foot of the class with a total valuation of $26,387,926.

California's percentage of increase is above that of most of the other states, though there was material increase in all valuations. The value of farm lands and buildings in the entire United States in 1920 was $67,795,965,384. That of 1910 was $34,801,125,697.

Average farm value for the United States in 1920 was $10,514, practically doubling the valuation in 1910, which was $5,471. California's average, however, was $26,122 as against $16,447 in 1910.

Average value of farm land per acre for the United States in 1920 was $70.94; that of 1910 was $39.60; in California, $104.67, more than doubling the average of 1910, which was $51.93. The highest average valuation is shown by Illinois, $231.93, with Iowa a close second with $227.09, that is, that ranking stands if the District of Columbia is not considered a state, for that rich little piece of land out of Maryland shows an average per acre valuation of $981.01. California ranks eighth in value of farm lands and buildings per acre of all the states in the Union.

	1920 No. Farms.	Value Farms and Bldgs.	Increase Value over 1910 Pct.
Alameda	2,778	$50,998,317	50.00
Alpine	21	468,800	—24.30
Amador	479	6,346,421	65.20
Butte	2,219	47,412,322	118.60
Calaveras	606	7,060,642	132.20
Colusa	816	36,738,253	112.70
Contra Costa	1,675	42,780,923	47.10
Del Norte	130	2,907,150	90.00
Eldorado	729	6,472,151	109.20
Fresno	8,917	279,861,191	241.30
Glenn	1,320	38,939,002	*
Humboldt	1,756	32,682,744	77.30
Imperial	2,843	58,118,264	182.20
Inyo	521	11,856,255	105.50
Kern	2,020	65,159,396	158.40
Kings	2,171	60,335,988	114.30
Lake	771	11,278,010	*
Lassen	606	15,347,737	*
Los Angeles	12,444	374,677,663	95.00
Madera	1,402	34,790,497	166.90
Marin	718	15,612,630	48.10
Mariposa	367	4,045,207	93.20
Mendocino	1,759	25,714,581	*
Merced	2,846	87,305,443	106.00
Modoc	743	17,006,955	102.90
Mono	74	1,960,580	12.50
Monterey	1,712	53,131,338	76.70
Napa	1,428	26,183,391	59.10
Nevada	481	4,153,795	67.40
Orange	4,188	168,330,541	177.70
Placer	1,280	20,394,038	122.90
Plumas	150	3,327,686	21.70
Riverside	3,949	88,311,891	105.20
Sacramento	2,975	79,894,423	137.60
San Benito	945	28,903,673	129.20
San Bernardino	4,023	93,233,337	41.40
San Francisco	74	1,556,070	—35.80
San Diego	3,200	56,918,847	108.70
San Joaquin	4,500	127,517,683	107.10
San Luis Obispo	1,803	52,689,576	96.00
San Mateo	624	16,742,010	—13.90
Santa Barbara	1,485	61,695,451	60.00
Santa Clara	5,016	138,920,013	124.00
Santa Cruz	1,759	24,555,410	49.70
Shasta	949	12,617,500	101.70
Sierra	77	1,451,600	18.50
Siskiyou	1,052	15,614,845	32.70
Solano	1,358	44,032,075	74.00
Sonoma	5,739	98,670,937	96.30
Stanislaus	4,566	96,245,539	149.10
Sutter	1,437	45,466,586	169.00
Tehama	1,414	28,376,996	100.30
Trinity	377	2,107,362	79.30
Tulare	6,372	180,546,028	163.00
Tuolumne	363	3,861,620	73.10
Ventura	1,543	91,214,201	106.40
Yolo	1,613	59,227,255	107.90
Yuba	487	12,042,270	115.00
All California	117,690	3,073,811,109	

*County boundaries changed since 1910.

The number of farms in the United States in 1920, according to the Fourteenth Census, was 6,448,366, as compared with 6,361,502 in 1910, showing an increase of 1.4 per cent. The total area of land in farms in 1920 was 955,676,545 acres, as against 878,798,325 acres in 1910, showing an increase of 8.7 per cent.

Value of Farms

The value of all farms in the United States on January 1, 1920 (value of land and buildings), was $67,795,965,384, as compared with $34,801,125,697 on April 15, 1910. The increase in the value of farms during the decade was $32,994,839,687, or 94.8 per cent. It thus appears that while there was only a slight increase in the number of farms between 1910 and 1920 and an increase of less than 10 per cent in the farm acreage, the value of farms nearly doubled.

Due allowance must be made, of course, for the fact that farm values in many localities were abnormally high at the beginning of the year 1920, and that present values might be considerably less than those reported at the time of the census.

Seven states reported values for farm land and buildings in excess of $3,000,000,000, as follows: Iowa, $7,601,772,290; Illinois, $7,416,583,951; Nebraska, $3,723,536,255; Texas, $3,717,799,544; Minnesota, $3,301,168,325; California, $3,073,811,109; and Missouri, $3,062,967,700.

Average Value per Farm

The average value of land and buildings per farm for the United States as a whole in 1920 was $10,514, as compared with $5,471 in 1910. —(Continued on Page 23.)

Established 1877 Forty-fourth Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

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Saturday, July 2, 1921

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

If any of the 40,000 Cultivator subscribers fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

EDITORIALETTES

Secretaries Hoover of the Interior and Wallace of Agriculture met with grain growers of the Middle West in Washington recently and discussed plans for improvement of warehousing of grains. There is nothing new in the plan they are suggesting; it is simply the nationalizing of a method which has been common in a few of the grain growing states. The proposal is to provide a method by which the farmer can be given unlimited storage facilities for his grain and receive a warehouse certificate in such form and under such conditions that it would pass as an order for delivery of the grain. It would thus greatly increase his borrowing power and relieve him of the pressure of selling his grain except at his own option. It would enable him to haul his grain at the time of the greatest farm economy without being compelled to sell at that time. It would extend his credit area far beyond his local bank.

* * *

Dispatches announce that "Wall Street has agreed to relieve some of the most serious phases of the domestic credit situation and will cooperate with the federal treasury by advancing $25,000,000 if Western bankers and associates will take care of another $25,000,000 for the creation of a $50,000,000 fund to be used in relieving the embarrassment under which farmers and livestock men are laboring. This offer comes, it is said, as the result of a resolution introduced into congress that the $50,000,000 be taken from the treasury. The $50,000,000 may be sufficient to aid in correcting the present situation, but it appears to us that it will take a much larger sum, and certainly more liberal treatment on the part of the market, to give very great encouragement to the livestock industry.

* * *

The Bankhead bill, H. R. 6048, is one of nearly a dozen bills before congress which provide for development of rural homes by a system of governmental cooperation in the reclamation of arid and semi-arid lands. These bills claim to retain some of the power and reclamation possibilities, especially of the Colorado River basin, for the use of all the people. There is a strenuous effort at this moment on the part of large hydro-electric corporations to gather in not only the power but the irrigation resources and make them subject entirely to private or, rather, big corporation control. It is a time for people of the Pacific Coast to keep their eyes open and prevent, if possible, the giving away of a great heritage.

* * *

Revision of freight rates to Australia and New Zealand will doubtless result in greatly increased trade with those countries. California's rice, barley, canned fruits and fish, as well as dried and fresh fruits, will doubtless meet with strong demand if they can be delivered at reasonable prices.

GREAT AGRICULTURAL FAIR

There are going to be some real fairs in California this year. We have never seen such early plans nor such early, aggressive action on the part of fair directors and managers. San Fernando Valley folks are no exception. A dozen or more chambers of commerce of the valley are in action and local pride is inspiring to best effort.

Hamilton Bassett will stage a great horse show as one feature of the fair. Mr. O'Neil, superintendent of tractors, trucks and farm power, will stage a great demonstration, also a still exhibit. Superintendent Hammond is making every effort to gather a great poultry exhibit and Mr. Adamson of Adohr Ranch is lining up the dairy classes.

OPPORTUNITY FOR SERVICE

Governor Stephens has signed the West bill creating a commission consisting of seven members to make a careful study of the entire problem of agricultural education in this and other states. During the last year there has been much said and printed to indicate that there exists considerable room for improvement in our present plan of agricultural instruction if California is to hold a front place among the leading colleges of America.

The Cultivator takes to itself reasonable satisfaction for having been the first periodical or paper in California to bring the need of a strong agricultural college before the people of this state. We assumed the responsibility in the face of considerable opposition and with little encouragement. From the first this paper endeavored to make plain that we had no axe to grind and that our motive ended in helping to secure the best college of agriculture in America for California. We believe that every investigation and development has justified the initiation of the movement.

CHIEF RESIGNS

George Livingston, chief of the bureau of markets, U. S. D. A., since the resignation of Charles J. Brand on July 1, 1919, has tendered his resignation to take effect July 1, 1921. In accepting his resignation Secretary Wallace said: "The government is, at least for the time being, unable to meet the competition of private enterprise in the matter of salaries and thus finds itself continually handicapped in carrying out its work in the most efficient manner. In view of all the circumstances and of your greater opportunities I am compelled to accept your resignation as chief of the bureau, but if you may find it possible to so arrange your affairs as to continue to assist the department for a few months at least, as a consulting specialist in marketing, I shall appreciate it."

A MILLION

The American Farm Bureau Federation has now passed the million mark and is adding at the rate of 50,000 new members per month. The 28 states affiliating in March 1920 have increased until now there are 43. The rate of increase in membership has been little less than marvelous. In March 1920 it was 456,000, by December of the same year it had nearly doubled, and on June 1, 1921 the exact count showed 1,052,114. Meantime an organ of large Eastern manufacturers is throwing forty fits because of the "terrible influence" which may be wielded by the "powerful and vicious lobby."

Well, for once the farmers are holding together and they may soon be classed with the powerful, and it is possible they may become real vicious. About the only excuse they offer for their use of the new found power is "Watch our smoke."

FOOL LAW

Referring to your editorial in Cultivator of June 18, headed "A Fool Law," I think your title for it is not strong enough. It is not only a "Fool Law" but a vicious one as well.

It is simply an entering wedge for a flood of just such class legislation. If lawyers can get a law compelling everybody to call a lawyer for any little bit of legal business he may be perfectly competent to do for himself, what is to hinder the carpenters, painters and plumbers from getting laws passed forbidding a man to build his own chicken coop, paint his barn or put a new washer on the kitchen faucet, but must get an expert, forsooth! for all these jobs? If this keeps up we shall soon be as bad as Germany with "Verboten" staring us in the face everywhere. The whole business is simply an outrage on free-born Americans.

If our friends the lawyers are losing their grasp on life so rapidly that they have to implore the legislature to pass laws to help them make a living, don't you think it is about time we stopped sending so many of them to the legislature?

Just what steps must be taken to invoke the operation of the referendum law that this sort of class legislation may be nipped in the bud?—D. W. Meeker, Escondido.

We appreciate our correspondent's spirit and interest in the referendum on this law, but so vigorous has been the protest that already nearly sufficient names have been signed to the referendum petition, and there is no doubt that the law will never become operative. However, anyone may aid in the campaign by dropping into the nearest bank or trust company and signing the petition. It was suggested that the Cultivator print blank form of petition for subscribers to sign and return, but it must be borne in mind that the signature must be made in the presence of the circulator of the petition, who must make affidavit that each name on the petition was signed in his presence.

WHY!

The San Francisco, or the Twelfth, Federal Reserve District Bank issues the best monthly report on agricultural and business conditions which we have yet received. The last number reviews conditions for the month of June and gives precedence, as it does also in its title, to agriculture. Bank clearances, milling, mining, lumbering, the petroleum industry, manufactures, and wholesale trade are all given attention, but California barley, livestock, wool, dairy products, canned fruits, farm prices and innumerable other agricultural items are discussed at length. Under transportation we note:

"Reduced rates by water from Pacific to Atlantic ports through the Panama Canal have stimulated wool shipments from points in Utah and Idaho by rail to Los Angeles and thence by water to the Atlantic seaboard. One hundred and fifty carloads have been dispatched at San Pedro since January 1, at a reported saving over railroad rates of $3 to $20 per ton."

A look at the map and then at "saving of $3 to $20 per ton" speaks volumes as to the failure of railroading. We certainly had it drilled into us during the war that the government was incompetent to handle a big transportation system and, unfortunately, some of those who had to do with the management of those railroads appeared to aid in the spreading of this propaganda. But conditions are so infinitely worse since the former management has taken back the handling of the railways that some of us, who were almost converted to the idea of the failure of government management, are now asking where may relief be had.

It is now in order to have the rates from Utah, Idaho and other mountain states to tidewater so advanced that this roundabout shipment at a saving of $20 per ton may not be possible to the producers.

Meantime railroads are calling attention to the fact that there is more produce being shipped this year than a year ago and endeavoring to show thereby that the producers are entirely satisfied with the high tariffs now prevailing. That there are greater shipments may be true, but it is also true that thousands of tons of lemons, onions, and other products have been dumped because of inability to get transportation costs when they are shipped. Products which would command sufficient to cover the transportation have gone forward because it was the only recourse for the producer. Livestock, which is eating its head off, and decaying onions are poor stuff to keep and must be shipped in order to prevent a greater loss.

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California Cultivator

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Citrus Institute Meets

By Ernest Braunton

THE summer meeting of the California Citrus Institute was held in the high school at Whittier on June 24, and the next day the fourth annual fumigation and pest control school of the agricultural extension service of Los Angeles County was held in the same building. The attendance was good, the school auditorium being well filled throughout the two days.

The institute opened with Dr. J. T. Barrett, president, in the chair. After a few remarks of an introductory nature he presented M. J. Haig, secretary of the Whittier Chamber of Commerce, who, on behalf of the mayor and the city welcomed the delegates to Whittier, "the best place on earth." Dr. Barrett briefly responded and then outlined the aims and purposes of the institute, with a plea for widespread support in the way of membership. Then followed the forenoon's program with three unusually interesting and most practical talks on

Holding Production Costs Down

The first speaker was Geo. B. Hodgkin, of the industrial relations department, California Fruit Growers Exchange, who urged an increased efficiency rather than a reduction of wages. It has been found that when wages have been reduced efficiency has been decreased. If wages are reduced and efficiency corrspondingly reduced, a mistake has been made. The aim should be the highest possible efficiency. If this is attained the cost is of secondary importance for it is usually relatively less than where efficiency is at low ebb. Care of employes is the strongest factor in efficiency; even where wages have not been increased, better care has proven a splendid economic investment. Raise the standard of living, especially with

Picking Valencias in C. H. Beam Grove, Whittier

Mexican labor. This has proven profitable wherever tried.

Some employment medium is needed. At present there is no mutual interest between employment agency and farmer. The former furnishes a hand without regard to experience, fitness, where from or where going. The farmer receives a hand of whom he knows nothing and who may be nearly or entirely worthless for his line of work. Here is where the farm bureau should function. It would tend to stability of the labor market. It could aid in shifting labor from one district as work slackened to another where an increase was needed.

Dr. I. G. McBeth, manager of the Bastanchury Rancho, Fullerton, was the next speaker, on "Cost Per Acre and Per Box, or the Value of High Yields." He endorsed all the previous speaker had said about increased efficiency. He has found it is necessary to irrigate but every six weeks on much of the Bastanchury Rancho and in the heaviest soils but once in 60 days. This has materially lessened the cost of production for it cuts down, not alone irrigation expenses, but lessens the number of cultivations necessarily attendant on irrigations. He also heartily believes in the cooperative tractor unit movement now in practice in some sections. He incidentally stated the ranch used about 200 pounds of nitrogen per acre each year.

The pruning of lemons has been too severe. "We are now cutting away but one-fifth of the brush cut about four years ago, with a corresponding decrease in cost. Thin, but do not reduce, the size of tree." Keep up fumigation; do not slacken because the bottom drops out of the market for a year or two. If fumigation is not kept up production is reduced and cost of washing, handling, etc., is increased, possibly by 15 or 20 cents a box. Keep up production of crop so cost per box is kept down or you will have to get a higher price per box if a profit is to be returned.

The next speaker was Harry Damerel, of the J. M. Riley Fruit Company, Covina, who was given the subject, "Possible Economies in the Management of Citrus Orchards." He strongly advised the preparation and per-

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Top-Working Australian Navel Trees

By A. D. Shamel

AN orange grower at Ojai, Ventura County, writes:

"I have several Navel trees that have degenerated into what I would call an Australian type. I wish to work these over into an improved Navel strain. What is generally regarded as the best practice for budding over old trees having a base diameter of from six to ten inches? It has been suggested that I bud the larger branches in the fall, also that I cut the tree back almost to the main forks and bud the shoots. I expect to have an expert do the budding. It has been our experience over a period of about 12 years with budding over these so-called Australians that after a few years of producing superior fruit they seem to gradually turn back into a tree that resembles closely the old tree in manner of growth, foliage and type of fruit. Of course this is not scientific, but many others to whom I have talked have had the same experience, and I feel sure that a few words on this subject will be of interest to many."

If the Navel orange trees are of the Australian type they can be worked over to an improved Navel strain with good results, providing proper care is taken to eliminate the adventitious growth of the Australian limbs until the growth from the improved Navel buds has become established. The writer's observations covering the top-working of several thousand of Australian strain trees of the Navel orange have led us to believe that the best results have been secured by budding directly into several of the main branches of the Australian tree. In most cases, it has been found advisable to thin down the bark where the buds are inserted so that it will not grow over inserted buds before the growth from these buds has started. The writer frequently cuts out a little notch in the bark where the bud is inserted and which fits over the eye of the bud, thus permitting the growth of the bud without restriction. The best results in the writer's experience have been secured by doing this work during the suring months and usually when the budding has been done during May. It is very important to have someone to do the budding who is experienced in this particular kind of top-working. It is the only safe way to undertake such a job.

With regard to the reverting of the top-worked Australian trees after a few years, will say that the writer is familiar with many instances where the Australian trees have been top-worked for ten years or more and are still producing superior fruit. In these cases care has been taken to keep out all adventitious growth from the Australian tree trunks or branches nearby or below where the buds were inserted. The writer believes that the so-called reversion is frequently nothing other than the development of growth from the Australian wood which, on account of its more vigorous habit of growth, eventually dominates the treetop. The writer has found several instances where this has been the case and he suspects that it frequently occurs where the top-working is not followed up carefully for several years. In one instance where a large number of Australian trees were top-worked eight years ago with bud wood secured from superior parent trees of the best Navel orange strain, the owner reported six years later that this top-working had proven to be a failure because many of the top-worked trees were producing Australian fruits and the growth from the improved buds had evidently reverted to the Australian type or the influence of the Australian trunk had been such as to develop coarse and typically Australian fruits. The writer and one of his associates made a careful investigation of these trees and found two interesting conditions; (1) in some cases the inserted buds had failed to grow on account of the bark growing over the buds, or they had died from other causes. Sprouts had developed from points on the Australian branches near where the buds had been inserted and this growth had been mistaken for the growth of the improved Navel buds. In these bases the treetops were made up of growth from the Australian limbs which was mistaken by those who cared for these trees and by the owner of them for the growth of the inserted buds; (2) another condition was where the improved buds had grown but in addition to the growth from the improved buds, sprouts from the cut off Australian branches had been allowed to develop which, on account of their strong growth, developed more rapidly than the growth from the improved buds. In these instances the fruits on these trees were largely borne by the Australian new growth and were typically Australian fruits, while the fruits borne by the growth from the improved buds were of fine quality in every respect. Enough time was taken by the writer and his associate to go into this matter fully and completely because the conditions were typical of those where most failures in top-working Navel orange trees have been ob-

(Continued on Page 6.)

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Agricultural News Notes of the Pacific Coast

Northern California

Colusa County warehouses are filled with grain.

Amador County reports grain and hay crops promising well.

Sacramento County is making a survey of its turkey population.

Yuba City peach growers are asking $70 per ton for canning peaches.

Alameda County dairymen picnicked at Centerville, Saturday, June 11.

Butte County hopes for a newly formed state land settlement unit.

Reorganization of the Pacific Rice Growers Association is contemplated.

Sonoma poultrymen met in annual meeting and reviewed the year's work.

J. R. Bush of Merced has leased the Chowchilla home ranch of 1,000 acres.

Colusa reports sacked grain beginning to come in from the harvest fields.

A new Grange Patrons of Husbandry has been organized at Dorris, Siskiyou County.

The California Wool Growers held its annnal ram sale at university farm last week.

Last year Petaluma and San Francisco shipped 800 carloads of eggs to New York.

Red Bluff, Tehama County, is planning to establish a free market where producers and consumers may do business directly.

Farmers Protective Association of Livermore, Alameda County, is discussing community slaughter house and refrigerator.

The Poultry Producers of Central California has packing and distributing plants at Petaluma, San Francisco, Oakland and Santa Cruz.

Home demonstration agent, Miss Clark, has been giving demonstrations of building and use of home evaporators at Redding and Corning.

President Denman of the Poultry Producers of Central California estimates sales made by the association this year will total $10,000,000.

Cherry growers of the Santa Clara Valley are asking assistance of the federal department of agriculture in solving problems of handling and shipping.

Officials of the California Cannery Association of Oakland met with the Farmers Union at Gridley to discuss means of bringing better prices to producers.

Rice growers of Sutter and Butte Counties recently held conference with the state reclamation board as to disposal of waste water from rice fields. Some drainage canals have been overfilled and serious damage caused.

President Stephens of the Pacific Rice Growers says that the average yield of rice per acre will be less than last year owing to poor quality of seed, and that, together with the reduced planting, will make this year's crop light.

"Sonoma County's Mountain Empire" centered around Annapolis in the northwestern corner of the county, recently picnicked and discussed its productivity, especially the proof which has been given that it is in the apple belt.

Central California

The annual rodeo at Salinas will be held July 27-31.

Sultana, Tulare County, is erecting a fig preserving factory.

The new sorghum factory at Modesto is nearly ready for operation.

Grain harvesting is in full swing with return more liberal than anticipated.

Tulare County farm bureau will hold a barbecue picnic at Mooney's Grove, July 4.

Fresno city is moving to secure better distribution of water, and perhaps better equipment.

The board of supervisors of Tulare County listened to arguments pro and con on squirrel destruction.

Kings County Fair Association is revising premium book for the fair to be held this fall at Hanford.

Tulare County poultrymen recently organized in Porterville with H. S. Williams of Poplar as president.

Commissioner Collins of Tulare County reports 19,500 acres set to grapes this season in that county.

The Corcoran district of Kings County is in the midst of grain harvesting season. The late rains materially increased the yield.

Representatives of local fruit and transportation companies met in Fresno last week to arrange shipping schedules for the 1921 fruit season.

San Joaquin Valley chambers of commerce have launched a movement for construction of a road connecting Grant and Sequoia national parks.

The Modesto and Turlock irrigation district people are discussing impounding water for power and irrigation along the Tuolumne and other rivers.

San Joaquin Valley towns are uniting in an advertising campaign through which it is hoped to give wide publicity to San Joaquin Valley's producing possibilities.

The farm center meeting at Ripon, San Joaquin County, was given to discussion of milk producers, J. M. Henderson, Jr., J. E. Thorp, Mr. Locke and others making addresses.

The California Associated Raisin Company is making survey of vineyards in Kings and Fresno Counties to determine extent of damage to grapes from excessive heat.

The Winton farm center of Merced Couny held an enthusiastic meeting, June 23, at which it was decided to establish a number of demonstration vineyards and orchards in that county.

According to the 1920 census, value of Fresno County farm lands and buildings is $279,861,191, as against $81,997,943 in 1910. This is greatest increase shown by any county in California.

Two concrete grain elevators were built in Stanislaus County this year to take care of present harvest. Grain is moving daily from both these elevators to the terminal elevator at Oakland.

Prof. J. W. Nelson of the state university has been making soil tests in Stanislaus County to determine moisture content. Many sections show serious condition through presence of too much water.

Southern California

The new freight rate on cantaloupes is $1.75 per hundred.

Orange County dairymen picnicked at Orange County Park last Saturday.

Prof. Bioletti gave grape culture demonstration at Coachella last Saturday.

California citrus growers met in semi-annual institute at Whittier last Friday.

Yucaipa Valley, San Bernardino County, reports marketing fine quality of cherries.

Orange County farm bureau is planning for grain elevators at El Toro and Capistrano.

Santa Ana canneries announce wage schedule for women and children same as last year.

The California Growers canneries will operate so far as possible during the coming season.

Ventura County apricot growers report 65,000 pounds of last season's 'cots in the holdover

The cannery at Banning has signed contracts with growers for 300 tons of peaches at $30 per ton.

Hemet, Riverside County, is making an effort to secure a greater portion of improved county roads.

The cannery at Arlington, Riverside County, announces that it will probably not open this season.

County Commissioner Sharp of Imperial reports roguing of cotton as deferred because of late season.

Coachella Valley cotton planters are practicing a much closer spacing system this season than formerly.

Imperial Valley pomelo growers are discussing advisability of forming cooperative marketing association.

Blythe, Riverside County, still maintains an organization of the Farmers Alliance. Tony Seeley is the secretary.

The cannery of the California Growers Association at Riverside announces that it will start on peaches about the middle of July.

Bruce Drummond, government date expert of Coachella Valley, announces that there will be exhibit of dates made at Riverside fair.

Coachella Valley interests have contracted with the department of agriculture to care for Saidy date shoots which are in quarantine.

The Milk Producers Association of San Diego County met recently and elected directors and officers. The president is James Ballantyne.

Ventura County is anticipating the early completion of a road over the mountains into Maricopa in the Kern County oil fields.

Bean growers are shipping and the market is receiving freely, and it is hoped the old crop will be out of the way before new Limas are harvested.

California Honey Producers Exchange reports its honey crop for 1920 totalled 844,000 pounds. This year's output will be little more than 30 per cent of that of last year.

One of Imperial Valley's finest melon fields this year was one of 400 acres grown and handled entirely by white labor. Japanese, however, control very largely in the general production.

The Coast and General

Hood River shipped its last car of apples May 19.

Western Oregon prune crop will average 50 per cent of normal.

Oregon Patrons of Husbandry recently met in annual convention at Eugene.

Mohair producers at Eddyville, Oregon, recently sold their entire pool at 22½ cents.

Douglas County, Oregon, claims to be the banner prune producing section of that state.

Many truck farms along the Columbia River have been materially damaged by overflow.

An international automobile, truck and tractor exposition is planned for the City of Mexico.

A 30 per cent injury resulted from heavy rains in the pepper producing section of Florida.

More than 200,000 pounds of Wasco County spinach was destroyed by high waters of the Columbia.

The United States imported 63,000,000 pounds of wool during the months of January and February.

The Institute of American Meat Packers has organized a committee on improved livestock breeding.

Yakima Valley potato acreage shows a material increase. The production will reach at least 12,000 acres.

Dairymen of Albany, Oregon, have just completed a new creamery to take the place of structure burned some weeks ago.

Tom Anderson of Chandler, Arizona, reports a yield of 17 sacks of wheat to the acre from 40 acres, or 2,380 pounds to the acre.

Georgia peaches coming into New York are declared lower in quality than usual. All fruit so far delivered has been small and green.

Georgia is declared to be the greatest watermelon producing state of the Union, some of the larger producing sections sending out as high as 1,000 cars.

The bridge over the Hassayampa at Wickenburg, Arizona, will be completed August 1, according to the announcement made by the state highway department yesterday.

The Arizona corporation commission has received nine applications for permits to operate stage line from Phoenix to Globe over the new Superior highway which will be opened this fall.

Plans are nearly complete for the extension of the electric power line from the Salt River Valley project in Arizona, which extends to Sacaton, to connect with the towns of Florence and Casa Grande.

Heavy showers over the northeastern section of Arizona have materially improved conditions on the range. Moderate showers have been reported in some other parts of the state, particularly in the northern section, but these were light and did little appreciable good.

The county farm bureau at Signal Creek school house of the Casa Grande Valley, Arizona, recently held a potato show. The first prize was won on the variety known as Flagstaff Reds. The farm bureau members have been getting together in an effort to improve types of vegetables, fruits, grains, etc.

Conditioning the Pullets

By Jean A. Koethen

AN item in a recent Cultivator entitled, 'To Postpone Laying' interests me greatly," writes a Santa Rosa subscriber. "I also have February pullets and do not want them to lay too soon. Is the bran and bone meal fed as a dry mash, and is the bone green? Will you also please explain how much cracked corn should be used and with what other grains, and what proportions of each grain."

The problem of the maturing pullet is a delicate one. We want our pullets to begin laying as early as they can without injury to the highly organized constitution which characterizes every high producer. We also wish to escape the fall molt, which, in the case of February and January pullets, is a more or less serious handicap, depending on weather, method of feed and some other considerations which I fear none of us clearly understand.

The average poultry keeper is delighted when the first of a bunch of pullets begins to lay. If it happens to be at four months of age he is loud in his advertising of those wonderful chickens, he increases the protein in their laying mash, keeps them stuffing the heaviest ration possible, and anticipates a year in which every pullet will lay her egg a day. Then what happens? The contrary creatures lay through July and August, possibly through September, then go into a molt which keeps them non-producers till the price begins to drop in January.

Maturity First

A February pullet of high fecundity cannot be kept from laying till October. She will probably lay in August in spite of all efforts to postpone laying. What she must not do is to lay before she is thoroughly matured.

Now maturity means two things. It means frame and muscle, but it also means fat. Professor Rice of Cornell in quite a long series of investigations discovered that the heavy winter producers always had considerable surplus of fat on their bodies and concluded therefore that some surplus fat is a sine qua non of steady production. Probably this is the reason hens of the American breeds lay more steadily in cold or wet weather than do Leghorns. Some fat is required for the manufacture of every egg yolk. In a long summer day the pullet gets enough fat from her daily ration to keep her body warm and provide the egg yolk. In the short, chilly days of fall and early winter she cannot eat enough for both purposes and is obliged to draw from the store of surplus fat on her body. When this is exhausted she quits and goes into a fall molt. If she can be held back from laying till October, or if she can be provided with a good deal of surplus fat before she begins, she may be kept laying right through the fall and winter. I say "may" because there are cases in which the greatest care and most scientific management have not prevented a fall molt though they have perhaps kept production going in spite of the molt. The hen is a temperamental creature at the best and we can only build on a scientific foundation and trust she will fall in with our ideas.

The Maintenance Ration

The holding back method advocated by the poultry division of our own agricultural college consists simply in removing the laying mash as soon as the first eggs are seen and giving instead a mixture of 95 per cent bran and 5 per cent bone meal, the theory being that a pullet cannot lay if she has not the proper materials for making eggs, and she must therefore use her food for building frame and putting fat on it. I have never heard Professor Dougherty mention the "surplus fat" question. Probably he holds that a pullet given such a light mash will inevitably eat more grain and inevitably put on fat.

The Conditioning Mash

Cornele G. Ross of Pomona is so thoroughly satisfied of the need of conditioning pullets before they are allowed to lay that he has worked out a system of his own for the feeding of his pullets from the end of the first month to maturity, and I am very glad to be able to publish it.

From the fourth or fifth week till the first egg is dropped, the following "growing" mash is used: Wheat bran, 880 pounds; low grade flour, 140 pounds; corn meal, 200 pounds; ground milo, 100 pounds; ground wheat, 100 pounds; ground oat groats, 100 pounds; high grade meat scraps, 75 pounds; ground green bone, 75 pounds; charcoal, 35 pounds; salt, 10 pounds.

When the very first egg is dropped by a bunch of four or five hundred pullets (which is usually at about four months with Leghorns) they are shifted into laying quarters and given a conditioning mash for a month or six weeks or as long as they can be kept from laying to any extent. This conditioning mash consists of: Wheat bran, 640 pounds; low grade flour, 200 pounds; ground wheat, 200 pounds; corn meal, 300 pounds; ground milo, 200 pounds; high grade meat scrap, 50 pounds; ground green bone, 75 pounds; charcoal, 75 pounds; salt, 10 pounds.

A study of these two formulas reveals that he has cut down on the bran and beef scrap, which are high protein feeds, and increased the amount of corn meal and milo, which are both fattening.

As soon as the pullets indicate that they are bound to lay, no matter what ration is given, they are put on a regular commercial laying mash and allowed to go to it, but by this time there is surplus fat on their bodies and they are ready to lay full sized eggs and to lay them right along.

Cracked Corn

Neither Mr. Ross nor Professor Dougherty mentions cracked corn as a conditioning feed. For that suggestion I am indebted to an article by Victor G. Aubrey in a Country Gentleman of nearly two years ago. Mr. Aubrey there calls attention to the pre-maturity molt, which he says "occurs more or less with all pullets just at a time when they are beginning to develop the yolks in the yolk cluster and just at the time you notice the reddening up of the face and the starting or budding of the comb."

"Now, the thing to be done," he says, "at the time of this pre-maturity molt is just the reverse of what often

(Contnued on Page 21.)

The Vegetable Garden for July

Northern California

By A. R. Gould

THERE is still room for activity in the vegetable garden, and to keep the home table well supplied it is essential that you keep busy sowing seed and planting up the vacant plots. Soil conditions must be considered and some plots will need lime and manure. Never allow any crops to suffer for want of water, as it will prove fatal to such as lettuce, radish, onions, celery, etc. They will quickly run to seed. Open up the irrigation trenches and cultivate the day after watering, keeping the soil fine and forming a dust mulch. This means success.

Turnips and Kohl Rabi

Sow White Egg variety in rows very thinly in good rich soil. It matures very early. Yellow Globe is also a fine keeper and should be sown now for winter use. The kohl rabi is somewhat like a turnip and the top leaves may also be used. Should be sown now.

Beans

Make successional sowings of Golden Wax, Stringless Green Pod and Refugee in rows two feet apart. Those sown last month will need attention in the way of thinning out where the plants have come up closer than one inch apart. They need this room for development and a better crop will be the result. Tall or pole varieties will need the stakes for support.

Corn

For a late supply sow Country Gentleman, Golden Bantam and Alameda Sugar. Keep the wheel cultivator or hoe busy every week or so between the rows.

Peppers

Secure strong plants of these of the Bullnose or Chili.

Lettuce

Sow Big Boston and May Queen for a late supply. Sow the seeds very thinly and in fairly moist soil.

Leeks and Celery

There is still chance to plant these in the trenches which should have been previously prepared with manure. Both make a splendid winter vegetable.

Carrots

Thin out to six inches apart those sown last month and keep well watered.

Kale and Brussels Sprouts

Both excellent to grow for table use and the first named is fine for poultry. Best varieties, Tall Green Kale and Dwarf Perfection. Sow seeds on a warm but shaded border.

Cauliflower

These, if sown last month, should soon be ready for transplanting to other beds and later this month may be planted out in the plots, which should have been richly manured.

Tomatoes

Keep those being trained, tied in, and remove all axil shoots. Remove all diseased fruits as soon as they appear.

Spinach

Sow Round Summer and the Prickly variety in fairly rich soil in rows 18 to 20 inches apart.

Southern California

By D. F. Reichard

WE have passed through a most favorable spring for our garden work, but beware of the hot weather that will be upon us, or no doubt has been before this paper gets to you. Watch your plants closely that they do not get dry or stunted from lack of moisture.

Cucumbers do best when they can be irrigated once a week. Corn, even though it has wilted somewhat, will come through with a good crop if given a couple of good wettings between the time the tassels are out and the silks appear. Tomatoes, eggplants and peppers, if not planted too close, will need irrigating but twice a month. The suggestions on these few items will suffice to give you ideas for other stuff in your garden. When irrigating or wetting your stuff do not be content with standing a few minutes with a sprinkler and wet only the surface. Rather make good sized basins around each plant or furrow out between rows and allow water to run long enough to thoroughly soak your ground.

Where stuff has come to maturity see that it is harvested and used while it is in its prime, before the vegetables get tough, woody, pithy or stringy.

Do not desert your garden now because the weather is getting hot. Fall and winter vegetables are the most relished and if grown for market bring best prices. Keep stuff not matured in good growing condition, and where crops have been taken out, irrigate and work up the ground preparatory for late crops. During early July cucumbers, melons and squash can be put in with full assurance of making good crops. Sweet corn put in this month will be ready for roasting ears during October. It is late for planting Kentucky Wonder beans, but bush varieties can be put in for fall string beans. It is also late for Lima beans as they are so slow to mature. The latter part of the month put in peas, either Yorkshire Hero or Senator, and Irish potatoes. Also get in small plantings of the hardier stuffs, beets, carrots, radishes, green onions, turnips and parsnips for early winter vegetables.

Keep diligently after any insect, fungi or pests that may be on your place. For aphids or plant lice and other sucking insects spray thoroughly with Black Leaf 40. Use rosin spray for scale and dry arsenate of lead either as spray or in the dry form applied to the plants for chewing insects. Bordeaux mixture is the best fungicide at this time of the year. Gophers

(Continued on Page 8.)

CITRUS INSTITUTE MEETS

(Continued from Page 3.)

petuation of the orchard's history and the keeping of tree performance records. Make and keep orchard charts, but in your own way. If you understand it that is sufficient, others need not. Think of individual trees, not of orchards. Be optimistic; do not neglect orchards in "lean" years, but keep groves up for they are hard to recall when once run down.

Growers should practice cooperative tractor work and cooperative fumigation. Pay higher wages if you can get better service. Likewise, the most economical fertilizer is the one that brings the best results, no matter what it costs. Do not put on heavy doses of nitrogen when they may be washed away or leached down below root zone by rains or in some soils at any and all irrigations. Apply small doses more often. Prune as little as is possible but proper, and wax or paint the larger wounds. Look up the latest machinery; a new machine is just being put out that is a great improvement in making the six furrow irrigation ditches. Take your men, especially the foremen, to see what is being done in other orchards of extent and high class, and take them often. It is time well spent.

Afternoon and Evening

The afternoon was given up largely to statistical information, of which we hope to give some "figgers" later. The first subject dealt with was: "Changes in Cost of Production of Citrus Fruits Since 1910," by F. O. Wallschlaeger, secretary California Citrus League. He was followed by C. C. Teague, Limoneira Company, Santa Paula, in a thorough, most comprehensive presentation of "Freight Rates and Their Relation to Fruit Production." A banquet was given at 6:30 p. m. at the Whittier Women's Club and the evening session was given over to an address by G. Harold Powell, general manager California Fruit Growers Exchange.

Pest Control School

This was the fourth annual fumigation and pest control school held under the auspices of the Los Angeles County farm bureau, President Robert H. Neely in the chair. He introduced Farm Adviser Hodgson who gave a brief history of the movement and said that these annual meets had been perpetuated by reason of the widespread interest shown as manifested by the increasing annual attendance.

H. J. Ryan, horticultural commissioner of Los Angeles County, was presented to speak on the announced subject of "Scale Conditions in Southern California." "It costs us from $750,000 to $1,000,000 annually for pest control. Black scale is the worst pest, but only one of many. Purple scale is everywhere in Southern California and at many points in Los Angeles County. It spreads but slowly. Red scale is well distributed in the county. Citricola is as far west as Azusa. Citrus mealy bug is mostly confined to Los Angeles County but is not serious and citrophilus is not bad. Yellow scale is still prevalent but nowhere serious or hard to control."

Last year 28,000 acres were fumigated for black scale, 5,128 acres were fumigated twice; 1,045 of the 28,000 acres were also given an early season spraying. Of 2,235 groves reported 75 per cent were satisfactorily controlled. About 27 per cent, or 294 groves, were satisfactorily treated with arsenical sprays, and several other sprays did good work. One curious, yet not unimportant fact is that of 116 groves fumigated last year and reported as in the A-1 class and again fumigated this year, but 42 are now in the same class. This is not necessarily laid to inefficiency of fumigation, but the difference may be due to hatch of scale alone. Despite this showing all of the groves of the county show a 75 per cent control as against 65 per cent last year. Several charts were exhibited to show the differences in loss or gain over last year, based on the month in which fumigated. These figures were so at variance, so "eccentric," that nothing of value could be deduced. They were shown merely as of interest, and were almost amusing.

Next came R. S. Woglum, field department California Fruit Growers Exchange, on the dual subject, "Improvement in Fumigation Practice for the 1921 Season"; and, "The Use of Pots Versus the Cyanofumer and Liquid Gas." He said that gas tight tents were the main improvements of the past year but as the subject would be fully covered by Prof. Quayle, he would not further consider it. The dissatisfaction with fumigation results for the last two years has led about 50 per cent of the growers in one district to declare that they would return to the cyanofumer or pot methods, but the speaker was emphatic, as was Prof. Quayle who followed him, that the unsatisfactory fumigation of the past two years was not traceable to the use of liquid gas but to other causes.

Late fumigaiton for citricola is not so good as earlier, but even here liquid has proven superior to solid cyanide. There is no question but warm weather is best for liquid gas, and when temperatures are low the pot or solid cyanide method will prove more effective. The unsatisfactory results in the Pomona district are no doubt due primarily to increased resistance of scale. The present method is good but better applicators have been needed and are now available, and with the use of these the speaker believes the results everywhere will be more satisfactory. But the fact remains that in coldest weather, and then only, is the cyanofumer better. Night inspection by owner or confidential agent was advised. The best time for control of citricola is July-September. Daylight fumigation in hot weather is undesirable. Also avoid heavy winds and heavy cover crops. The latter keep the tent off the ground so leaks occur and gas striking a heavy crop turns to liquid or even to ice.

The last speaker of the morning session was H. J. Quayle, of the citrus experiment station, Riverside, on "The Use of Gas Tight Covers." Prof. Quayle is a "bird" when it comes to telling a story that really illustrates. He said he could only give the results of late experiments as far as they have gone. It is a little too early in the season to report in full. "We will give you some more later. We are like the man who was chased by a ghost until he sank exhausted on the end of a log. The ghost sat down on the other end and said, 'Well, we've been going some.' And the man replied, 'Yes, and as soon as I get my breath we're going some more.'"

Prof. Quayle had at least 15 samples of tent cloth, duly labelled, which he passed out into the audience, to show the new material being used; also one of an old tent treated with a rubber dip to make it comparatively gas tight. Improvements in cloth are still going on but those last in use are very good. Asked about the reputed danger in removing these tents, because of gas remaining, he said the danger was little as they are using lighter doses and longer time, for the gas cannot now dissipate as with canvas tents. "We also are able to use lighter doses than formerly considered possible." On large trees under canvas tents the cost was 66 cents a tree with 83 per cent kill. Right beside them, under gas tight tents, the cost was 64 cents a tree with a 99.44 per cent kill. This cost has now been reduced to 48 cents a tree. It is too early to definitely determine results but "we know they are at least equal to those obtained under canvas tents at a much less cost." The dosage has been reduced from .50, or a half pound of liquid gas, to .20, or one-fifth pound. This explains decrease in cost. The range of temperature in these experiments was from 81 to 45 degrees, but at the lower temperature the kill was satisfactory. Some fumigators advise stopping at 50 degrees and a few at even 60. Woglum advises 50 degrees as the minimum.

The Afternoon

Three subjects were treated during the afternoon. The first was "Spray Injury to Citrus Trees," by Geo. P. Gray, of the state department of agriculture, Sacramento; and C. P. Wilson, of the research laboratory department, California Fruit Growers Exchange. The second was "Biological Control of Scale Pests," by H. S. Armitage, state department of agriculture laboratory, Whittier. This was followed by a spirited discussion on red spider control led by R. S. Woglum and H. J. Quayle.

TOP-WORKING AUSTRALIAN NAVEL TREES

(Continued from Page 3.)

served. As a result of these rather frequent observations of the causes for failure in top-working such trees, the writer has come to the conclusion that it is usually best to take out such trees and replant them, notwithstanding the many advantages of top-working when it is done and carried out under the best of conditions.

One other instance might be mentioned in this connection because it illustrates a less frequent but still, perhaps, an important cause of failure in this connection. A friend of the writer's several years ago decided to top-work a number of old Australian Navel orange trees in his orchard. He hired a budder who was a careful and conscientious man and what is ordinarily called an expert budder. The owner of the Australian trees asked the budder to secure his bud wood for top-working the Australian trees from some superior performance record trees in one of the writer's plats. The budder cut the bud wood from the trees which the writer showed him at a time when performance records were being secured from the remainder of the trees in this plat. During the bud cutting, the writer visited the budder to find how he was getting along with the work. He was greatly surprised to find the budder in a typical Australian tree in this plat cutting bud sticks for his work. The writer asked the budder the reason for this action and the budder replied that he was unable to get enough large bud sticks from the trees which the writer had pointed out to him and so had gone to the neighboring Australian tree in order to get an adequate supply of bud wood of the kind which he considered essential for top-working purposes. He was actually cutting bud wood from a typical—an extreme example—Australian Navel orange strain tree for top-working Australian trees. Owing to the belief amongst many budders that large bud wood is absolutely essential for top-working purposes, the writer is firmly convinced from the experience just related and other similar experiences that oftentimes the Australian trees are top-worked with bud wood secured from other Australian trees on account of the ease with which large bud wood is secured in such Australian trees.

This correspondent can secure reliable bud wood for top-working from the Fruit Growers Supply Company of the California Fruit Growers Exchange. This bud wood is taken from superior performance record trees which produce uniformly good fruits of the best Navel orange type. If the top-working is done with such bud wood, the trees should be examined two or tree times a year for four or five years, in order to make sure that all adventitious growth from the Australian wood is cut out and removed. This is the only way in which it is possible to make sure that the new growth on the top-worked trees is from the buds inserted and not from the sprouts which spring up freely around

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Spray Now---Delay Is Costly

From a large grower and packer we have received the following letter:—

"Replying to your inquiry regarding our experience with Citrospray will say that we welcome this opportunity of telling you of the splendid results we have had both in controlling the scale and cleaning up the fungus with which the trees were infested.

"The fruit from the trees sprayed with Citrospray was of excellent quality, and arrived in the eastern markets without decay, bringing the top prices for fruit from this district.

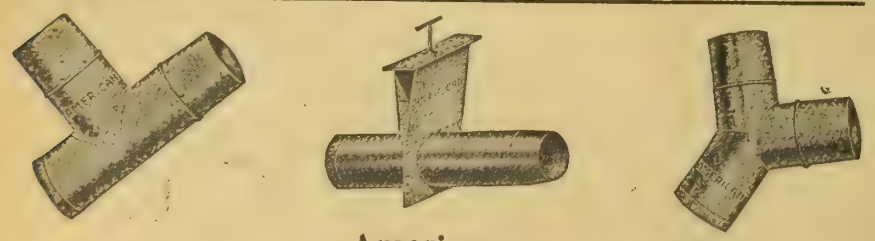
"We did not get all of our orchards sprayed last year, and we figure that on one orchard of 12 acres our loss this year will be at least $5,000.00 on account of not being able to spray it. We won't let this occur again, however.

"Wishing you continued success in your good work, we are, etc."

The name of the writer and further particulars may be obtained from

Citrospray Chemical Co., Ltd.

2205 Santa Fe Ave. Phone 41645 Los Angeles



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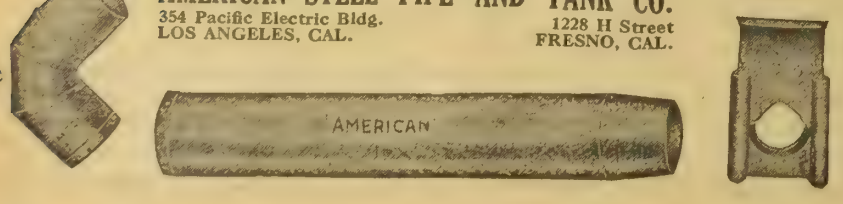

the cut-off branches of the Australian tree and frequently from dormant buds along the limbs of such heavily pruned trees.

Summarizing our experience:

It is possible and practical to top-work healthy Australian trees to the best strain of the Washington Navel orange.

Top-working should be done only with absolutely reliable bud wood from superior performance record trees. Such bud wood is now available through the Fruit Growers Supply Company of the California Fruit Growers Exchange.

Top-working should be done by an experienced budder in this type of work.

The top-worked trees must be looked after carefully for several seasons in order to remove all growth except that from the inserted buds.

The trunks and main limbs of the top-worked trees must be carefully protected during the top-working process in order to prevent injury to the bark from sunburn or other exposure. Furthermore, the growth from the inserted buds must be cared for intelligently in order to secure a satisfactory development of this growth for a permanent tree top.

If these conditions cannot be conformed to in every particular, it is probably a better plan to replant with a reliable young tree and not attempt to do this top-working which, without proper care and consideration for a number of years, is likely to be disappointing.

ASSOCIATION VS. PACKERS

E. M. COLEMAN in Sunsweet Standard, writing of the California Prune and Apricot Growers Association, says:

"Recently a suggestion has been made somewhat prominent that our association should cultivate a more friendly relation with the commercial packer. Assuming the proposal to come from one who is a sincere friend of our association, we are forced to conclude it is made because of a lack of a correct understanding of the real business relation of our association to the packers.

"It is so entirely unlike the usual relation of competing merchants, or that between the various packers.

"In the real sense the association is not a buyer, but a selling agency for its members.

"There is no possible competition between our association and the packers as buyers. Only as sellers do we compete. The first obligation of the association sales agent is to sell all the membership crop, and at a price to secure a profit to the producer. The packer is under no obligation as to quality or price. His interest favors a low price. That portion of the crop outside of our association is subject to the packer's pleasure as to price. It has no other channel through which to reach the consumer. When preessure of oversupply enables him to buy at his own price, he gladly takes the unfortunate grower's crop at a price below cost of production and with it can so break the market as to easily prevent the association selling at a profit.

"He has lost nothing, while compelling the association to take loss equal to all growers' profit above cost of production. The last crop has been a good illustration of these significant facts.

"When the price broke from that fixed by the association, the packer bought nothing until the outside grower in distress was ready to accept from the packer any price he saw fit to give. He then could take this fruit at half price and easily sell it to the undoing of the association's best work.

"Suppose you stretch your imagination to see two grocers in the same block, one doing business in just the usual way and the other with some unusual opportunity to periodically buy stock at half price. It would be but child's play for him to destroy all chance for the other merchant to make a living profit. Could those merchants be friendly competitors?

"All market disturbance works disaster to the association but aids the packer. His gain comes from all that defeats, disturbs and discredits the association with either its membership or its market.

"As well ask the sheep grower to maintain friendly cooperation with coyotes."

MODERN PROVERBS FOR FIG GROWERS

By Cal Myrna

Go to the Blastophaga, thou fig grower; consider her ways and be wise. For her ways bring prosperity and happiness to the man that trusteth in her.

Know thy soil, O fig grower; for in its depths are the elements of success and joy. Dig deep into mother earth's bosom and she will repay thee with bounteous crops.

A sweet fig maketh a glad eater; but a sour fig is the despair of the consumer. Bountiful crops profit nothing unless quality goes hand in hand.

He becometh poor that deals out culls to the packer; but the practice of quality maketh rich.

The study of your trees is the beginning of wisdom; but the slacker despises wisdom and instruction. Despise not the counsels of the experienced for in them ye may find the road to success. He that witholdeth food from the soil, the land shall curse him; but blessing shall be upon the head of him that fertilizes liberally.

A little sulphur is a legitimate thing; but an excess brings disaster.—Associated Grower.

REVIEW OF CROP CONDITIONS IN CALIFORNIA JUNE 1, 1921

The composite condition of all crops in California on June 1 was about 3.7 per cent below their 10-year average condition on that date and practically the same as on June 1, 1920. Fruit crops were all better in 1920 on June 1 than they are this year. Field crops are better this year than in 1920.

The condition of the various crops on June 1, expressed in percentage of their 10-year averages (not the normal) was as follows:

Hay	103.6	Olives	95.7
Pasture	103.6	Berries	91.4
Wheat	102.6	Peaches	90.1
Barley	101.3	Prunes	88.5
Cantaloupes	101.1	Walnuts	88.5
Lemons	100.0	Almonds	84.5
Oranges	100.0	Cotton	81.5
Sugar Beets	100.0	Beans	78.5
Alfalfa	98.9	Pears	76.3
Oats	97.6	Apples	70.7
		Apricots	64.3

Average of all June 1, 1921 ..... 96.3
Average of all June 1, 1920 ..... 96.4
Average of all June 1, 1919 ..... 105.0

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Reliable Trees and Vines

For Commercial Orchard and Vineyard Planting

To avoid the possibility of serious shortage we grow nursery stock in several favorable localities.

Occasionally unlooked for losses occur in nursery production, making it advisable to eliminate entire blocks of trees or vines. We plan to safeguard our customers to the fullest extent.

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Kirkman Nurseries

Fresno, California

Member of Bud Selection Association of California

VEGETABLE GARDEN FOR JULY IN SOUTHERN CALIFORNIA

(Continued from Page 5.)

and moles should be watched very closely. Take a walk around your garden each morning to see if there are any signs of either rodent. Trapping is the best method of eradication, but many people prefer poisoning, while considerable success is obtained by gassing. Moles are only caught by traps or by drowning out where it is possible to cover large areas at one time with water.

Southern Arizona

By M. E. Bemis

JULY in southern Arizona is the corn month. Few people in the irrigated valleys realize the potential value of Mexican June corn. This variety of corn, which was native in Mexico, is adaptable to all arid and semi-arid sections and succeeds in producing ears regardless of whether or not there is humidity in the air at the time of pollenization. Eastern varieties of corn do not become pollenized if the weather is extremely dry at the time when the silks begin to show. Consequently it is not safe to plant these varieties although occasionally they do splendidly. Mexican June corn has been improved, considerable work of this kind having been done by the Sacaton government experiment station. Corn may be planted in the vicinity of the Salt River Valley up to July 25.

Mexican June corn is splendid for roasting ears, is excellent as a grain crop and unexcelled at least in this part of the country for a silage crop. There are possibilities of improving this variety still further, and an enterprising farmer may find here a fertile field in the development of a strain of corn which will bring out all the good qualities and eliminate some of the objectionable features such as ears growing high on the stalk.

There are one or two varieties of Indian corn such as the Papago and Pima which make a quick growth and which, like the Mexican June corn, are sure croppers in a semi-arid country.

July is also the month for planting beans. The pink beans or frijoles should be planted the latter part of July. Pole beans may also be planted in July. Kentucky Wonder Wax may be planted in the early part of the month and Kentucky Wonder and White Seeded Kentucky Wonder the latter part of the month. Burpee's Bush Lima and the Large Lima may be planted in July.

There is plenty of time in July for the grain sorghums, cow peas and Sudan grass. Sudan grass at this season of the year makes a rapid growth and while it requires considerable water it will be well worth while as a quick means of producing forage. Sudan grass is good for chickens and a patch in the garden for clipping to furnish green feed for the poultry is excellent.

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Founded in 1889 by R. M. Teague

The Ornamental Garden for July

Southern California

By Ernest Braunton

JULY is a trying month on plants, beasts, and mankind. The exuberant growth of spring has been checked, plants have the added season's growth to maintain and mature and the demands on water and food are great. For ornamental plants nitrogenous fertilizers are not so much needed as earlier, for luxuriant growth is about over and ripening and finishing is the order of the day. A soil, staw or leaf mulch should be maintained to conserve the moisture content of the soil as equably as possible.

July is not an ideal month for seed sowing, and close attention must be paid to soil moisture if seeds are to grow. For that reason prepare seed beds deeply and pulverize well so soil will hold much water and keep seeds moist and unbaked. Gardeners are sowing antirrhinum (snapdragon), Canterbury bells, centaurea (dusty miller, etc.), cosmos, lobelia, nasturtiums, pansy, portulaca and stock. Nurserymen are planting eucalyptus and cypress seeds and all tree and shrub seeds from Australia and South Africa. They must have the young plants for fall, winter and spring trade. The following are some of the plants now being set in permanent position: carnation, cosmos, coreopsis, candytuft, centaurea, daisy, foxglove, forget-me-not, gaillardia, marigold, petunia, phlox, salpiglossis, scabiosa and violet. Carnations and violets are not expected to yield flowers before the cool weather of November or December, but now is a good time to establish them and continually nourish them to make good flower producers for winter.

Not until now have the tops of daffodils, Spanish iris and dwarf gladiolus died or yellowed in the writer's garden, and these bulbs may be taken up and stored in a cool, dry place, preferably in damp sand, if available. As the sand dries slowly in such a place, so do the bulbs, assuring a natural maturity and conservation of strength for next spring's floral effort. The foliage on amaryllis is also maturing; pull off the yellow leaves, stir the soil well but shallowly and mulch with stable manure. Flower spikes will soon appear.

This is the season when many flowering plants are at their best, the strain is great; if wrong treatment is given death may result. One of these plants is pelargonium, or Lady Washington geranium. Sometimes they will turn yellow and die, when three days before they were ideal. It is a case of "in the midst of life we are in death." Do not give much water or fertilizer after they begin to bloom. All that should have been done before. The same treatment is necessary with many plants.

Begin now with fertilizing chrysanthemums, about twice a week with liquid manure or balanced commercial fertilizer. After three weeks or so stop for a couple of weeks and then resume feeding. Water heavily Keep this up until buds begin to show color. Then stop feeding but water heavily until the last good blossom is gone.

Northern California

By A. R. Gould

IT will be necessary this month to give very careful attention to all flowering subjects, both annuals and perennials. Hot days and strong winds will play havoc with them. Stake all tall plants and be safe. This refers to hollyhock, dahlia, campanula, Michaelmas daisy, chrysanthemum, scabiosa and delphinium. Then special attention should be given to watering and cultivating. Once a week will help keep them in good condition. The application of a little liquid manure will have a lasting effect and fine flowers will result. The bugs will also be busy and spraying should be resorted to immediately they are seen.

All vines should be kept in order and any new growth tied in, as these tender shoots soon suffer if neglected. Especially is this true of roses. Of course there will also be dead wood to remove, as this makes a climbing rose look very unsightly, and while on the subject of roses we would also consider it opportune to attack the fungoid pest, rose rust. Climatic conditions are a contributing cause and the weaker hybrid varieties seem to be mostly affected. The most effective way to destroy this is to remove infected branches and burn, also spray even to the roots with copper sulphate. Liquid sulphur may be used as a preventive and we would advise spraying even those bushes which appear free from disease. Mildew attacks may also be warded off by liquid sulphur. Such varieties as Ulrich Brunner, Paul Neyron, Frau K. Druschki, etc., may be cut to encourage late blooming.

Dahlias

These should now be making very active growth, and it will be a good plan to mulch them around the roots

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with manure, which will do much to hold the moisture for the coming hot days. As the buds develop, remove all but the large terminal bud if you would have large flowers. As the black fly or aphis becomes troublesome spray with nicotine. Seedling plants of the dahlia should now be ready for transplanting, and after a few weeks will be large enough to plant out in their flowering quarters. Some very interesting types are obtained from seed.

Lawns

These will need plenty of water and a tonic such as a dressing of sheep manure, dried blood, guano, etc., will help to keep a fine dark green color. All weeds should be removed before they start to seed, which they will soon do during the hot weather.

Seed Sowing

Seeds to sow for winter and spring flowering subjects are cineraria, primula, Sweet William. We advise sowing in boxes of fine soil well prepared and placed in a slightly shaded situation. Keep moist but not soaked if you desire success.

Bulb Selection

Some might think it rather early to make out a list but those first with the order get the best stock imported. Some of the best Darwin tulips, those with the long stems, are fine for cutting. Daffodils or narcissus we shall deal with next month.

Asters, Zinnias, Cosmos

Plant out these useful subjects. Secure healthy plants from your nurseryman in the best colors but see that the ground is first well manured.

Propagate from Cuttings

Rose, carnation, box privet and lonicera nitda in a bed prepared with sand. Shade from the sun and keep well watered.

DATE GROWERS ORGANIZE

The Valley Packing Association is a new organization, with headquarters at Coachella. It is a strictly cooperative organization, embodying the one man, one vote; non-profit; no capital stock, and other of the well established principles of all cooperative effort.

This organization is a member of the California Date Growers Cooperative Association and, because of the large acreage controlled by its members, expects to handle a pack the coming season of from 35 to 50 tons of dates, composed of practically all the standard varieties now grown in this country, as well as much of the best of the fruit of palms grown from seed.

At the present the membership will not be increased in the belief that the only way for successfully solving the many packing and marketing problems is through a compact organization which will proceed very slowly, establishing the success of each new step before planning others.

This organization embraces the owners of the following groves: Beach Date Garden, Thermal; Menakher Date Garden, Coachella; Nomad Date Garden, Indio; Russel Date Garden, Thermal; Tropical Date Co., Inc., Thermal, and has leased the house and property of the California Date Association at Coachella for a period of years. The acreage controlled is 81 of imported varieties and 15 of seedlings. The officers are: R. H. Postlethwaite, president; Geo. M. Beach, vice-president; B. K. Marvin, secretary.

PEAR MEALY-BUG CONTROL

A meeting of California pear growers was called by Director Hecke on June 9 in San Francisco for the discussion of ways and means to prevent the spread of the pear mealy-bug. This pest is causing considerable alarm to pear growers in Alameda County, where it has recently broken out in a few orchards adjacent to the drying yards. Its introduction has been traced to infested Sacramento River districts from which points lug boxes of pears have been shipped for canning and drying purposes. These same boxes when carried into the orchards of Alameda County distributed the bug.

Among those attending the meeting were State Entomologist Harry Smith; Frank Swett, president of the Pear Growers Association; Fred Seulberger, commissioner of Alameda County; Harry Ladd, commissioner of San Joaquin County; Commissioner Fred Brosius of Sacramento County; W. D. Butler, Napa County commissioner; Lee Strong of the plant quarantine service, and representatives of the drying and canning interests. No definite means of control was decided upon and it is hoped that action will be adopted soon to prevent further spread into clean areas of this pest.—A. P. M.

U. S. DEPARTMENT REPORTS FROM FLORIDA

Florida will produce an excess of 1,000,000 more boxes of oranges this year than last, according to estimates just compiled by the bureau of crop estimates, United States department of agriculture. During 1919-20, the final reports of transportation companies show that 7,000,000 boxes of oranges were produced in the state. Up to April 1 of this year, 7,100,000 boxes had been shipped, and the department statisticians say that this indicates a yield for the 1920-21 season of 8,300,000 boxes.

The grapefruit crop in Florida, however, will not be as large as it was last year, the report shows. During the season of 1919-20, the state produced 5,500,000 boxes of grapefruit as compared with the estimates for this year's crop of 5,000,000 boxes. The total citrus fruit crop of the state, including oranges and grapefruit, was 12,500,000 boxes last year as compared with the estimated production of 13,300,000 boxes this year.

The report shows that up to April 1 of this year only 16 per cent of the grapefruit remained to be shipped, as compared to 30 per cent for the same date last season, and that 14 per cent of the oranges remained to be shipped, as compared to 10 per cent for the same date last year. The total value of the orange and grapefruit crop this year is estimated at $19,450,000, as compared to $26,800,000 last year. Though over 1,000,000 boxes more of oranges will be produced this year than last, the total value of the crop is estimated at $12,450,000, as compared to $18,550,000 last year. The average price per box is $1.50, as compared to $2.65 last year. The value of the grapefruit crop is $7,000,000, as compared to $8,250,000 last year, the average price per box being $1.40; last year it was $1.50.

MARKET NEWS

Market gluts are one of the principal causes of loss in marketing farm products, especially those of a highly perishable nature, such as soft fruits and vegetables, which can not be held until conditions of supply and demand adjust themselves. Avoidance of these ruinous conditions is possible in large measure by more careful and widespread distribution, but all products are not marketed most advantageously by the same system, and the marketing plan varies somewhat in different areas from season to season.

With respect to fruits and vegetables, and more especially those of high perishability, perhaps no more effective work in broadening distribution has been accomplished than that of the Imperial Valley melon growers and shippers in cooperation with the bureau of markets, United States department of agriculture. The department opens a temporary office at Brawley at the beginning of the shipping season. By means of a large chart in the temporary office of the department shippers are able to know the daily distribution of each day's shipments and diversions.

This information, in conjunction with the telegraphic report compiled by the department's representatives in the East and telegraphed to its Brawley office, showing receipts, prices and conditions in from 20 to 25 of the major markets of the country, enables the shipper to have before him each day a complete picture of the market situation with respect to melons, and to distribute his shipments accordingly. There is no discrimination. Every shipper has full knowledge of the entire situaiton. The day has passed when one shipper has advantage over another by reason of more complete information.

Widespread and accurate distribution can not be accomplished without dependable information as to conditions of supply and demand. The Imperial Valley situation is unique and not comparable to every condition, but when it is noted that carlot shipments have increased from approximately 4,500 in 1915 moving to about 150 cities to approximately 8,500 cars in 1920 moving to 260 cities, it furnishes food for serious thought.

Commercial date growing in the Salt River Valley has taken on a new impetus in the formation of the Phoenix Date Company, which has planted a considerable acreage of a variety of dates which has proved to be successful in Arizona.

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NOW BUYS A STANDARD NON-SKID
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Ford and other light car owners can now buy a tire of recognized standing and quality at a price that Firestone knows is the greatest value ever offered to the motoring public.

Cords At New Low Prices

Firestone Cords also are offered at lower prices: 30x3½, $24.50; 32x4, $46.30; 34x4½, $54.90. Tire repair men, who judge values best, class the Firestone Cord as the sturdiest carcass made. Forty-seven high-grade car manufacturers now use it as original equipment.

Go to the Firestone dealer. He offers you greater protection and economy at a time when protection and economy are demanded as never before.

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SINGER WHITE
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Portable Electric Sewing Machines

We have a limited number of the new 1921 model Singer, White, New Home and New Method Electric Sewing Machines that were slightly scratched in shipping, which we are offering at a Big Reduction—on terms of

$10.00 Down
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These machines are Guaranteed to be absolutely new and just as represented.

Singer Style 128-3. Known as the Long Shuttle machine and sold by Agents for as much as $116.00.

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White Rotary Electric. Agents' price $126.00.

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The New Method Rotary Electric. As Good a machine as money can buy.

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These machines can also be had on the Regular Stands, with or without Motors. We also have a large stock of all makes of slightly used and second hand machines at special prices and terms.

We have a complete stock of needles and parts and specialize in repairing all the different makes of sewing machines.

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Household Department

THE LITTLE HOUSES

I love the little houses
  On a newly opened street,
Where rosy wives with a child or two,
  Their homing husbands greet.

Where toys are on the new front steps
  And a baby cart chokes the hall,
Where velocipedes are the only cars,
  And like birds the children call.

The little house is a house of hope
  And love and faith also.
There's a busy hum in it all day long,
  And the hours like moments go.

The stately house has all achieved,
  It is dull and weary, too,
But the little house is aglow with dreams
  That may, perchance, come true.
—Mary Alicia Owen in Twilight Hour.

ELSIE

By Margaret A. Condon

SOFT shadows that wait on the late California afternoon were creeping down from the mountains. At Oakglen Ranch Donald Marsh, the young owner, and Pedro, his Mexican helper, were hastening to complete their task of propping the limbs of a huge Satsuma plum tree. Heavily weighted under the abundance of fast ripening purple fruit, the great limbs had been drooping almost to the breaking point, as if in mute entreaty for help to carry their luscious burden.

His work finished, and whistling softly, Donald stood back and surveyed the tree.

"It's a peach, Pedro," he said in his pleasant voice. "Those limbs are as heavy as"—he paused for a simile and, with a smile that belied his serious words, went on,"as heavy as my heart."

Pedro grinned from habit, showing a vast expanse of gleaming white teeth that lighted up his swarthy countenance as a glint of sunshine breaks through a cloud but, always chary of his English, said no word. In fact, it was not quite clear to Pedro what "the boss" meant by a heavy heart.

But Donald knew and for all his cheerful demeanor his heart was heavy. His vision was of a girl with lips and cheeks glowing, hair brown and wavy, eyes large and gray but dimmed with tears. This was Elsie, his young wife, who last night had sobbed out her sorrows on his shoulder and expressed in no uncertain terms her desire that they give up the California ranch and make their home in the East.

Donald was a native of California, loving the soil and the hills that surrounded him; Elsie a dainty maiden from the frosty slopes of New England. Their romance began one year before when Elsie was visiting friends in California. Six months later Donald followed the girl to her Eastern home and returned with her as his wife. The aftermath brought clouds as well as sunshine. Elsie, while very much in love with her goodlooking young husband, sorely missed her relatives and all the environment of her nineteen years of life in the East. While she did her best to conquer homesickness there was apparent a lack of interest in their surroundings that grieved Donald deeply. Matters had reached a point now where in his goodness of heart and affection for his pretty wife he was greatly perplexed as to what the outcome would be.

Elsie met him cheerfully that evening when he entered the neat home but there was a wistful look in her gray eyes that Donald would have given years of his life to dispel.

"You ought to see that big Satsuma tree over in the barley field, Elsie," Donald remarked, as, the substantials of the evening meal disposed of, he helped Elsie and himself liberally to peaches and cream. "It's loaded to the breaking point with purple beauties. Pedro and I spent nearly two hours this afternoon putting supports under the limbs."

Elsie laughed, and her laughter sounded very welcome to Donald. She was interested in Pedro: he was a new type to her.

"Good old Pedro," she said. "I'll bet, Donald, if any ripe plums dropped off he picked them up and asked you if he could take them home for the ninos."

"That's just what he did do—always thinking of the ninos, and I like him the better for it," Donald said laughingly, then regretted his words as Elsie's eyes grew misty and he knew her thoughts had flown to her young brothers and sister far away beyond the mountains.

A little later the girl drew a low chair beside her husband and said coaxingly:

"Now, Donald, let's talk it over."

Donald shook his head. He well knew to what she referred and said teasingly:

"Talk it over if you must, Elsie, but I'd much rather you talked about the fruit crop or the mockingbirds that peck our figs or about "Teddy," and on hearing his name, a beautiful tan and white collie with silky hair and long drooping tail rose from his place on the porch, came over to Donald and laid a cold black muzzle against his knee.

Elsie looked distressed.

I wish you would be serious, Donald," she returned. "This means so much to me."

Still smiling, Donald patted Teddy's head.

"You know how I feel about it, Elsie," he replied. "You told me one day you believed that I had a speaking acquaintance with every blade of grass on the place. It's true, Dearie. I love every tree, every shrub and growing thing that draws life from my land. I know you miss your friends and your old home, but that will wear off. I don't want you to forget your people but I do want you to take an interest in our home and be happy here. Later on they can visit us or we will make a trip East, but I'm afraid not until next year, Elsie. We have each other, and that is something. Don't ask me to give up the ranch."

"But I gave up my home and came to a strange country for you, Donald," the girl returned, on the verge of tears.

"You don't want to stay in a stange country for me, do you, Elsie?" Donald asked whimsically. "And the cases are not parallel. I'm established here and familiar with the ways and methods of ranching. In the East I'd have to learn and start all over again. It would be uphill work and we'd miss many of the comforts we enjoy here. Would you like to go East and spend a few months, Elsie?" Donald asked suddenly, his eyes searching her face with a look of fear and longing in their clear depths.

"Without you, Donald? Go away across the continent and leave you here? No, indeed," was Elsie's reply.

Donald laughed happily.

"Unreasonable woman," he said. "I should have been broken hearted if you had said yes, Elsie, but what are we to do? How shall we solve the problem?"

"I'm not asking you to sell the ranch, Donald," she persisted. "Lease it for a year, and we'll go East."

"It would mean a financial loss, Elsie. Dearie, try to be content here. I know you do not love my California now, but it will come. The lure of the West will hold you and everything will look bright. Won't you try to be patient a little while longer, Elsie?"

The girl's eyes filled with tears.

"I'm always trying—for your sake, Donald," she returned, and Donald thought best to say no more at that time.

The dry California summer was passing on flying feet. The girl of the East saw with wonder that the mountain streams were silent; the great hills wore their brown robes unchangingly; wild vegetation had parched and curled, and dry leaves littered the trails. But the home in its foothill setting was cool and pleasant. Great trees guarded it; vines and roses shaded the porch, and the spacious lawn under Pedro's watchful care was of a green to gladden the eyes.

Donald was rejoicing that Elsie had not mentioned the dread subject for several days, and hope was glimmer-

The Cultivator Patterns

3308. Girls' Blouse Suit.—Cut in four sizes: 8, 10, 12 and 14 years. A 12 year size will require 4⅞ yards of 36 inch material. Price 10 cents.

3614-3174. Ladies' Costume.—Waist 3614 cut in six sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Skirt 3174 cut in seven sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure. Its width at the foot is 1¾ yard. To make the dress for a medium size as illustrated in large view will require six yards of figured material 40 inches wide, and 1¾ yards of plain material. Of one material 7⅞ yards will be required. Two separate patterns, 10 cents for each pattern.

3171. Child's Play Garment.—Cut in five sizes: 1, 2, 3, 4 and 5 years. A 4 year size will require 2⅜ yards of 36 inch material. Price 10 cents.

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3280. Ladies' House Dress.—Cut in seven sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size will require 6¼ yards of 36 inch material. The skirt measures 1⅞ yards at its lower edge. Price 10 cents.

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PATTERN DEPARTMENT
California Cultivator
Los Angeles

ing in his heart that the fight might be won, when he came in one evening and found her sobbing over a letter from home.

"It's no use, Donald," she said, and he saw that her mood was petulant. "I can never learn to like your California, with its dust and its dryness, its glaring sunlight, and its"—she paused, as a further disparaging comparison did not come, then added:

"If you love me, Donald, you will give it up."

Donald's kind heart sank. This was a condition he had not anticipated when he brought Elsie to the ranch. He would not reproach her, but unconsciously a new and justifiable sternness crept into his voice as he said:

"All right, Elsie. I can't see you grieve yourself into illness. I'll see what can be done to dispose of the ranch."

What this would mean to Donald no one but himself could realize. He felt that a crisis had come in their lives. He could not sacrifice Elsie's health and happiness, and he must be the one to give up his cherished enterprise to accept an uncertain future.

(Continued next week.)

HOME MADE PRESERVES

By W. V. Cruess, Author of Home and Farm Food Preservation.

(Concluded.)

Raspberries

Use three-fourths pound of sugar per pound of berries. Proceed as directed for strawberry recipe No. 1.

Loganberries or Blackberries

One pound of sugar per pound of berries. Proceed as directed for strawberry recipe No. 1.

Currants

One pound of sugar per pound of fruit. Proceed as for strawberry recipes No. 1 and No. 2.

Peaches

Recipe No. 1—Whole peaches are often preserved. The fruit may be lye peeled (if of canning varieties such as Muir, Tuscan, Phillips, etc.) by immersing in a boiling lye solution of one-half pound of soda lye per gallon of water, immediately followed by thorough rinsing in cold water. Or the fruit may be halved, pitted and peeled as for canning. Firm ripe, not soft ripe, peaches should be used. To each pound of fruit add three-fourths pound of sugar and 2 pints of water. Cook down quickly until fruit is clear or to 55 to 60 degrees Balling or 218 to 220 degrees Farenheit. Seal hot in jars.

Recipe No. 2—Proceed as directed above for figs, but do not parboil fruit before placing it in the syrup. Peach preserves are very often made by this or a similar sweet peach pickle recipe.

Pears

Peel, halve and core as for canning. Tough varieties, such as Kieffer, should be parboiled in water until tender. Bartletts usually do not require this treatment. A syrup made similarly to that in Recipe No. 2 for figs gives better results than a plain syrup. In preparing the syrup use 3 pounds of sugar to 2 pints of water, 1 pint of vinegar and spices as directed for figs. Thinly sliced lemon rind (a few strips only) added to the syrup improves the flavor of the preserves. Add 3 pounds of the pears to this amount of syrup. Cook to heavy preserve, 55 degrees Balling or 218 degrees Fahrenheit, and allow to stand over night. Pack carefully in jars. Add the syrup to the fruit. Seal and sterilize in water heated to 180 degrees Fahrenheit (simmering) for 30 minutes as directed for strawberry preserves. Jars should be completely covered during sterilization. Time counted after water reaches 180 degrees Fahrenheit (simmering).

Kumquats

Wash thoroughly. Slit down side to prevent bursting Boil in water until tender. Cool in cold water and remove seeds. Drain on a colander. To each pound of fruit add one pound of sugar and one pint of water and cook until clear or until syrup boils at 220 degrees Fahrenheit. Allow fruit and syrup to stand over night to absorb syrup. Pack in jars. Add hot syrup and sterilize in jars at 180 degrees Fahrenheit for 30 minutes. Tangerines and small oranges may be treated similarly.

Watermelon Preserves

Remove outer peel and inner red flesh. Use white portion only. Cut into small cubes about ½ inch square or in strips about ½ inch thick. Boil in water until tender (about ten minutes). To each pound of melon add one pound of sugar, ½ pint of water, and the juice of half a lemon. Boil until preserves are clear or to 220 degrees Fahrenheit or 60 degrees Balling. Allow to stand over night. Pack and sterilize as directed for pears. Spiced watermelon preserves may be prepared from watermelon cubes or strips boiled until tender in water and then preserved in the special syrup recommended in Recipe No. 2 for figs.

Cherries

Pit the cherries, if this can be done conveniently, or puncture the unpitted fruit thoroughly with a fork. Cook until tender in water to cover. To each pint of this hot water drained from the cooked fruit add one pound of sugar. Add about 1¼ pints of this syrup to each pound of fruit and cook slowly to a preserve consistency. Allow to stand over night. Pack and sterilize as directed for pears. If the cherries become tough and shriveled it is an indication of insufficient preliminary cooking in water. If so desired, a harmless red food coloring obtainable from a grocery store may be added to the syrup to intensify the color of the fruit. It should be added to the syrup before cooking.

Apricots

Use firm ripe fruit. Pit. Add one pound sugar and ½ pint water to each pound of fruit. Cook to preserve consistency and cool overnight. Sterilize as directed for strawberries.

Quince Preserves

Peel, quarter or cut in cubes or strips. Cook in water until tender and proceed as directed for watermelon preserves. This fruit is liable to become toughened unless the preliminary cooking in water is given

HINTS FROM HOUSEKEEPERS

Honey Drop Cakes—Graham Bread

One cup honey, ½ cup sugar, ½ cup butter or substitute, ½ cup sour milk, 1 egg, ½ tablespoon soda, 4 cups sifted flour. Baked in gem pans or dropped on a large pan or baked in layer pans for layer cake.

Honey Apple Butter.—One gallon good cooking apples, 1 quart honey, 1 quart honey vinegar, 1 heaping teaspoon ground cinnamon. Cook several hours, stirring often to prevent burning. If the vinegar is very strong use part water.

Graham Bread—Take 1 pint sweet milk, ½ cup extracted honey, 1/3 cup sugar, salt to taste, 2½ cups graham flour. Stir all into batter; put in a greased vessel and steam for three hours, then put in the oven for a half hour. For a change I add a cup of raisins or nuts or ½ cup raisins and ½ cup currants and dried prunes or figs chopped fine, or part nuts and part fruit. If too sweet leave out part of the sugar. I cook it about 4 or 4½ hours when fruit or nuts are in and I double the recipe. I cook in a gallon vessel; set the vessel in a larger vessel of boiling water, put on stove or in fireless cooker. It isn't always necessary to put in oven unless it is steamed and placed in the steamer over hot water. Oven cooking improves it. The fruit or nut loaf is especially good cold for picnic lunch.

I have enjoyed the household department for several years, and often intended to answer some questions, but several times my recipes would be in before I could send my letter.—Mrs. G. P., Korbel.

Use for Old Jar Rubbers

Rubbers can be used several times by pouring parowax around them after the top of the jar is tight. To open put the top in hot water a few minutes. When too old to use on jars I save some and put three or four in small frying pan or vessel on stove with hot water to put the jar in while I am filling it.—Mrs. G. P. Korbel.

HOUSEHOLD QUERIES

Crisp Cucumber Pickles

Some time ago the Cultivator had directions for making crisp cucumber pickles without scalding the vinegar. I used it and we thought the pickles the best we ever tasted, but I have misplaced the recipe and can't remember just the proportions.—Subscriber, Hollywood.

Pack fresh crisp cucumbers in quart fruit jars. In each jar put 1 tablespoon salt, 1 tablespoon sugar, 1 tablespoon mustard or mustard and ginger mixed and fill jar with cold vinegar, diluted with water according to taste if vinegar is strong. I usually fill jars half or three-fourths full of vinegar and pour in water to completely fill. Put on rubbers, screw down tops and set away for three or four weeks before using. They will keep perfectly for two years—perhaps longer.

SAME ON BOTH SIDES

A woebegone looking traveler in a small Georgia town approached the ancient negro who operated the primitive ferry across the dinky stream, and accosted him with: "Uncle, I'm broke, and I got to get across the river. Will you trust me for it?"

"Fare's only three cents, boss."

"I know it, but I haven't got three cents."

Uncle Mose placidly resumed his pipe. "Boss," he decided, "ef you ain't got three cents you won't be no better off on dat side de ribber dan yo' is on dis."—Pittsburg Chronicle-Telegraph.

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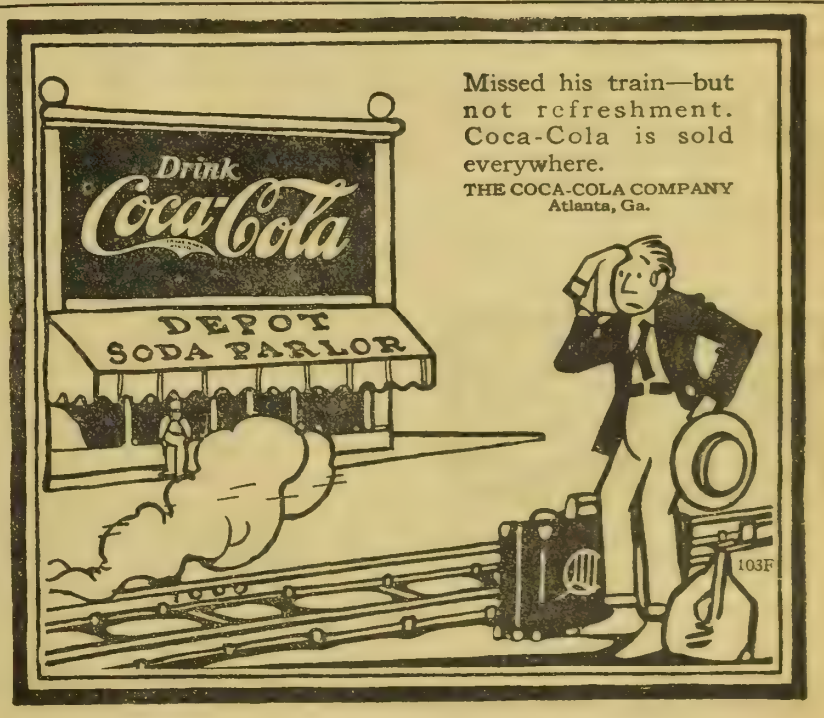

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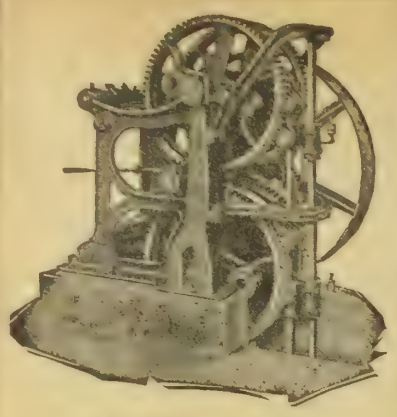

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Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.
Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Extension on Note

A owned house and lot upon which he gave mortgage to B. Thereafter A sold the place to C who agreed to assume the mortgage. Just before the mortgage became due B and C agreed to an extension of one year. A was not notified of this extension. Thereafter D purchased the note from B, took an assignment thereof, which was recorded. He then notified C that he must pay. What are the rights of the parties in the case?—Subscriber, Los Angeles.

As B received no consideration for the extension of time it was a void contract, and neither B nor his assignee, D, was in anywise bound thereby. D is entitled to immediately foreclose the mortgage and if he should grant an extension, as a consideration for such grant he may set any terms he may wish. If C had desired to have a valid extension he should have had a contract in writing, executed for a consideration, such as his obligation to pay the note, if he was not theretofore bound in writing, or a monetary consideration. It would not have been necessary to place the agreement for extension on record as it would be valid between the parties and any assignees of parties.

Separate Property

I have property upon which there is a mortgage. I have married and now wish to arrange the matter so that I can sell the property without my wife's consent and in the case of the death of either the property will go to the survivor. How can this be arranged?—Subscriber, Kelseyville.

As the property was undoubtedly separate property standing in the man's name, he is entitled to sell this property without the signature of the wife. If he desires the whole of the property to go to the wife upon his decease, he should execute a will in her favor. If she should die the property would remain in his name.

Partition of Estate

Six heirs of real estate in different eastern states live in various portions of the country. One would like these properties sold and proceeds distributed. What action is necessary to effect the sale, and if court action is necessary to be brought, is it necessary to bring it where the property is located, or where? How long would it take to get results? Would the party starting action be required to pay costs or would they all be liable?—Subscriber, Riverside.

Action concerning real property must necessarily be taken in the location of the property. If all of the parties desire to effect such sale it can, of course, be accomplished without court action, but if there is objection, an action in partition will be necessary. The form and procedure of such actions vary in the different states. The length of time it would take depends largely upon the condition of the court calendars in the location of the courts in which the actions would be commenced, and, consequently, no statement can be made. Generally speaking, the costs, including the attorney's fees, are made a lien upon the property and divided in proportion to the interests of the parties involved. Generally speaking, any party interested can obtain the partition by judicial action.

Salmon Fishing

May salmon be caught by nets in the San Joaquin Valley?—Subscriber, Turlock.

In the San Joaquin Valley, except in the tide water of the San Francisco Bay, salmon cannot be caught other than by spear or by hook and line.

Immigrants

I have a family in a foreign country who wish to come here. How can I help them to enter the United States? —Subscriber, El Cajon.

The last immigration bill provides that immigrants from any particular country would be permitted to enter only to the extent of three per cent of those now in this country. It would be necessary, therefore, to write Commissioner of Immigration, Washington, D. C., to ascertain how these immigrants may be permitted to enter.

Bees a Nuisance

Some colonies of bees are located near my property line. They sting the horses when cultivating so that it is impossible for me to give proper culture to that portion of my land. What can be done? — Subscriber, Los Angeles.

In some counties there are ordinances regarding the keeping of bees, which the inquirer should look up. It would seem that under the circumstances you might have a right to an injunction to abate this particular nuisance.

Family Corporation

A family desires to incorporate a small family company for the purpose of handling the property acquired. Could there be a provision that stock should not be sold to outside parties or until the stockholders should have the first right of purchase? What are the advantages and disadvantages?—Subscriber, Live Oak.

A provision in respect to the sale of stock, giving to the other stockholders a right to purchase at par or some other fixed price within a certain time would be entirely valid and is frequently made. Incorporation itself is in some instances a very good plan. However, it entails greatly increased taxation, both federal and state. Other means could be adopted to attain the desired ends without such expense, as to which it would be well to consult your local attorney.

Water Rights

I have found a stream of water in the mountains near a homestead, which apparently runs to waste. How can I procure information as to this stream? Must a person place water to beneficial use in order to hold? Could it be placed to use for a homestead for which a patent has not been acquired? Must it be developed within a certain length of time?—Subscriber, Anaheim.

You could undoubtedly ascertain the facts concerning this stream either from the county recorder, who would have recorded appropriation notices, or from the state water commission. If you desire to place this stream to use it would be necessary to secure a permit from the state water commission, and this permit would provide a certain length of time which the commission would deem a reasonable time for the construction of, diversion and works. For good cause the time of permit may be extended from time to time, taking into consideration the size of the stream, difficulties of diversion and other matters pertaining to the particular work. The stream could undoubtedly be used for the development of the homestead unless there has been a prior appropriation. It must be placed to beneficial use to hold the right to take water.

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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Brown Scale

Am sending an apricot twig and would like to ask if there is any spray which can be used now for this scale. Is the scale one which may spread to peach, pear, apple and plum? We sprayed twice this spring with lime-sulphur and rosin spray.—Subscriber, Long Beach.

The twig sent showed a most serious infestation of brown apricot scale which can not be handled very successfully at this period of the year. If taken in hand when trees are dormant it may be eradicated or greatly reduced. This pest is rather liberal in its choice of a home and while perhaps more serious on the apricot than on other trees infests the orange, the date, peach, pear, plum and many of our ornamental plants. We would prefer to spray with the rosin or old time Martin wash in winter when trees are free of leaves.

Leaf Curl

Is there any spray that can be used now for leaf curl?—Subscriber, Long Beach.

The time to spray for leaf curl is in spring before blossoms are open. If trees are sprayed for blight in the fall then in spring spray with Bordeaux and there will be but little manifestation of the curl. Once the leaves have shown the curling there is no help whatever other than spraying with a weak Brodeaux which will possibly prevent new growth from becoming infected.

Codling Moth

Our apples, pears and peaches all had worms in the center of the fruit last year. Can this be avoided this year?—Subscriber, Long Beach.

Presumably this was codling moth, which may be controlled by spraying first in spring when tree is in full bloom and later at intervals of two to four weeks through the early growing season with neutral lead arsenate, three pounds to 50 gallons of water.

Twig Borer

Will you please tell me how to control a long, brown beetle about a quarter to a half inch long with blunt and rather large head in proportion to its body? It works into the branches of trees. It is attacking two eight year old olive trees, boring in about the length of the body and leaving the ends of the twigs to fall off. If the branch is a little larger than a lead pencil it is left in a weakened condition.—Subscriber, Maxwell.

There is no control of this pest which is economically possible.

Cucumber Blight

Please tell me why my cucumber seeds come up, then tiny plants turn brown and wither up.—Subscriber, Inglewood.

This trouble appears to be the result of adverse climatic influences. The unusually damp, cool weather experienced for the past few weeks has wrought well nigh universal destruction, in many districts, of cucumbers and melons of all sorts. Leading seedsmen report such complaints made every day as the helpless grower comes to buy more seeds. Doubtless nothing but sunshine will overcome this blight.

Tanning Rattlesnake Skins

Under "Questions and Answers" in the issue of June 18 you ask how to prepare a rattlesnake skin for a belt.

First select your belt, a smooth leather belt is the best. Take your belt with you and hunt up your snake and "kill it first," then skin it. By cutting through the skin from the tail to the head it will peel off readily. Put the skin on the belt green and let dry, and the belt is finished. The green skin will stick to leather as if it were glued on after it is once dry, and to remove it you will have to scape it off, if pains are taken when it is applied to the leather. A dry snake skin is useless as far as I know. —R. L. Snelling, Turlock.

* * *

Snake skins should, upon their removal, be fleshed, removing all surplus flesh and fat. After being well salted (common table salt) they should be laid in cool place for two or three days. Then take out salt and rinse in cool water, put into solution (in glass or earthen jar) made of one teaspoon each of alum, borax and saltpeter, rain water to cover skin, two or three days. Remove and hang by pinning each side of neck on wall, letting tail hang down in cool shady place out of all draft or breeze. When nearly dry place back (or scale side) long way on a smooth round pole with some smooth hard cloth next to pole, to prevent marring scales, rubbing flesh side with a smooth round surface until perfectly dry and soft. Never stretch or pull skin as scales will not stretch and they will be loosened by pulling the skin from them.—Jno. H. Baker, Ontaro.

(There are professionals who do this work and the Cultivator can supply address to those interested.—Edit.)

Useful and Ornamental Street Tree

There is a movement on foot here to plant ornamental trees along the highway. The power and telephone lines are in the way, which makes it necessary for us to put the trees back on our own land far enough to clear the lines. We would like to know whether there is any kind of fruit or nut tree that would be both useful and ornamental. Soil is saline, with 12 to 16 inches of fine sediment on top, sandy subsoil. Water is a foot from surface. Fig trees freeze back too often.—Subscriber, Thermal.

With water only a foot from the surface it would be difficult to find a tree that would stand such condition, but why not plant the tree which is supreme in the Coachella Valley, that is, the date, then trust the telephone line and highway regulations to raise that line so it will not interfere with trees. Certainly no telephone or power company has the right to usurp the highway to the exclusion of shade trees. It appeals to us that figs would not do well with subsoil conditions which are described. As a strictly ornamental tree which will stand the conditions of Coachella Valley this paper has referred heretofore to Tamarix articulata. Other ornamentals which will perhaps do well under those conditions are Casuarina, willow and cottonwood.

Wire Worms

Regarding article in the June 4 issue on page 746, "Wire Worms," signed Subscriber, Anaheim:

"Wire worms have positively been eradicated by the use of two sacks of Toro brand agricultural sulphur per acre, in both bean and melon fields. Potato scab has also been prevented by this soil application. It is beneficial to apply to the soil at the time of planting in order to have live sulphur around at the time of germination of the seed and growth. Sulphur applied to the soil in the fall will greatly increase the crops, but would likely not affect the wire worms in the summer time.—P. M. Paulson, San Francisco.

PAID BACK

She: It is complained of Shakespeare that he unnecessarily murdered Hamlet.

He: But he has been paid off for it. A great many Hamlets have murdered Shakespeare.—Foolscap.

To get more, a man must study and work more, to make himself worth more.

Harvest—and Your Fall Work

AS HARVEST approaches and passes, with the finishing-up of work on this year's crop in sight, another beginning looms up just ahead —fall plowing—and commands its share of attention, even in the crowded hours of harvest. Where crops grew this year there will be, in most cases, crops again next year. And in many places there will be crops on land that was unproductive this year.

Forward-looking farmers are thinking about this—planning just what land is to be plowed for next year's crop and what additional machinery will be needed in order to handle the work in a way that will bring the greatest profit return. Are *you* equipped to start the new beginning right? To carry through your fall work the way you'd like to do it?

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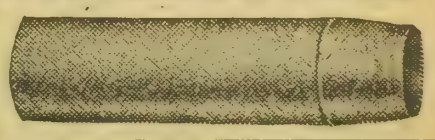

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Livestock News Notes

A new world record for butter production was established June 15 when the Holstein cow, Bella Pontiac, owned by T. A. Barron of Brantford, Ontario, completed a year's test with 1,573.75 pounds of butter from 27,017 pounds of milk. The former record of 1,506.36 pounds of butter in 365 days was held by Duchess Skylark Ormsby and has stood since 1915.

Alex McDonald, who is in charge of the beef cattle herds at the university farm, Davis, has accepted an invitation to judge the Shorthorn classes at the Oregon state fair.

O. L. Raper of Glenn County, who recently purchased the Shire stallion, Dovecote King, from the Blackhawk Ranch, has also selected the two young mares, Blackhawk Sally and Blackhawk Belladona. Blackhawk Sally was sired by Salvadore Conqueror and her dam was Quanea Diamond, both of which had showyard records. Blackhawk Belladona was by the former state fair champion, Blymhill Forester, and is out of Witchford Darby.

The Bridgford Holstein Company of Patterson was the second largest money winner among the Holstein breeders during the year just closed. This firm won $363.75 with their test cows and was the only California herd represented in the leading 15 winners.

M. C. Tolls of Long Beach has registered "Thelones" as the prefix for his Holstein herd, and in the future hopes that animals bearing a name prefixed by Thelones will be ranked among the best.

William R. Hearst has entered the ranks of the Hereford breeders and through his representative, H. J. Heeg, was a buyer at recent Eastern sales. In the Van Natta sale seven females were selected at prices indicating unusual quality. It is reported that the cattle will be maintained on the Hearst ranch in Southern California. Two daughters of Woodford 9th, one by Woodford 4th and one by Woodford 6th and one by Weston Prince were purchased in the sale mentioned.

Palo Alto Stock Farm has recently completed a seven day record on Kiatta Pontiac Pride of 34.8 pounds butter and 747.6 pounds milk at four years, one month and six days old. Last year as a junior two year old she produced in 305 days 21,511.5 pounds milk and 706.5 pounds butter. She is being continued on semi-official this year and from present indications should set up a very creditable record. Kiatta Pontiac Pride is a daughter of Finderne Pride Johanna Korndyke and King Pontiac Segis Korndyke.

A new Hereford firm has been organized in this state by G. Ellinwood Finnell, who recently closed out his partnership holdings with Russel Richardson. The new firm includes Mr. Ellinwood and will be known as Finnel, Hall and Richardson. The herd will be maintained in Shasta County.

Entries in the livestock department of the California state fair will close August 3 and exhiibtors are requested to send in their entries at the earliest possible date.

J. J. Murphy of Weed has purchased a well bred Holstein bull from the McCloud River Lumber Company, McCloud.

Hogs sold up to $9.25 in the Fresno auction held by the farm bureau marketing association June 17. The top lot averaged 196 pounds.

Chandler, Arizona, dairymen are following the example of the Tempe dairymen and are planning the organization of a cow testing association. An association has also been formed in the Roosevelt district south of Phoenix.

At a recent meeting of the Sycamore-Cienega Cattle Growers Association at the Sycamore ranger station James Reeves was elected president; B. C. Burmeister, vice-president; Ben Stewart, secretary and treasurer; John Boyer and E. D. Thurston, members of the advisory board formed by the inclusion of all five men named. This is a newly formed cattle growers' association in Yavapai Conuty, Arizona, within the Prescott forest reserve.

A law passed by the Arizona legislature provides for restrictions on slaughtered cattle for food. Any producers slaughtering any domestic animal, intending to sell it for food, must give notice five days previously to the livestock sanitary board, describing the animal, the brands and give the owners' names. The producers must retain the hide of the animal.

Efforts are being made to reduce the head tax on cattle and sheep grazed in the San Carlos and Indian reservations in Arizona. Tentatively the reduction on cattle is from $2.00 to $1.40 and on sheep 27 cents and 29 cents instead of the former rate of 75 cents.

The recent purchase of Jerseys from the Ed Cary ranch in Oregon has arrived at the Winsor Ranch, Bonita. It includes four females by Rosaires Olga Lad, two by Poppy's St. Mawes, one by Susy's St. Mawes and a six months old bull by Rosaires Olga Lad. They are all beautiful animals.

MORE CONDENSED MILK FOR ARIZONA

By M. E. Bemis

During the period when the dairy cow was in the height of her glory as queen of the Salt River Valley of Arizona there were two large condensed milk plants in operation. One of these was the old plant which had been in operation for a number of years and later was purchased by the Armour interests. This was located at Tempe on the south side of the Salt River in the heart of the Salt River project. The other was a new plant erected by the Armour interests at Glendale.

When the success of cotton discouraged the dairymen so that they sold off their cows, the Tempe plant was closed and about one year later the Glendale plant. The one condensed milk plant and the three creameries were unable to operate with the number of cows that remained. Although thousands of cows were sold many head of young stock remained. With the decrease in the acreage of cotton and the increase of alfalfa acreage and other forage, more attention has been given to dairying, and with the heifers coming into milk this spring there has been considerable increase in milk, an increase which has taxed the capacity of the one condensed milk plant and the creameries. Through cooperative arrangement the Tempe plant has been leased by one of the local creameries and will operate under the management of the former manager of this plant. The same brands of condensed milk will be again manufactured and through the selling organization of the Armour interests markets will be opened throughout the country. This will serve to take care of the milk and cream until the dairy herds have been greatly increased, probably for the next year.

Nothing has occurred recently which is of so much encouragement to the dairy interests and in fact to the Salt River Valley as a whole as this announcement of the opening of the Tempe condensed milk plant.

A TON OF MILK DAILY FROM 30 COWS

B. C. Benson, dairy test supervisor in this state, recently furnished the Holstein-Friesian World some remarkable figures that came to his notice at the Bridgford Holstein Company's herd at Patterson.

On May 25 there were 29 cows on semi-official test in this herd. Of these, 22 were milked three times daily and given only ordinary care. Seven are milked four times daily, but outside of that their care is very ordinary. They are not pampered in any way.

These 29 cows on that day averaged to produce 68.7 pounds milk. The seven milked four times daily averaged over 81 pounds, Adirondac Wietske Dairy Maid leading with 123.4 pounds on that day. Of these seven cows three are junior two year olds and one is a junior four year old.

A majority of the cows milked three times daily are under full age. I am not aware of the exact number. The average for the 22 was 64.9 pounds. One produced over 93 pounds and only one produced under 40 pounds, seven milked over 80 pounds, and they are in all stages of lactation.

In over three years of supervising official and semi-official tests in several states I have never seen the equal of the above. And production is not the only good feature of the Bridgford herd. It is headed by King Segis Alcartra Prilly, whose two year old daughters are making wonderful records and who was grand champion at every show at which he was exhibited, including three times at the California state fair.

Special mention must be made of Bessie Veeman Alcartra Prilly, a daughter of the above bull. At the end of her fifth month she is milking over 80 pounds daily as a junior two year old. She has a seven day record of 24.81 pounds butter and 460 pounds of milk.

Anyone who visits the Bridford establishment is certain to come away commending the type and individuality of the entire herd.

Kreso Dip No. 1

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PROTECT YOUR PROFITS

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All Livestock and Poultry Healthy

Effective. Uniform. Economical.

Kills Lice, Mites and Fleas. For Scratches, Wounds, Scab, and Common Skin Troubles.

PREVENTS HOG CHOLERA

Experiments on live hogs prove that a 2 1/2 per cent dilution of Kreso Dip No. 1 will kill virulent hog-cholera virus in 5 minutes by contact.

FREE BOOKLETS.

We will send you a booklet on the treatment of mange, eczema or pitch mange, arthritis, sore mouth, etc.
We will send you a booklet on how to build a hog wallow, which will keep hogs clean and healthy.
We will send you a booklet on how to keep your hogs free from insect parasites and disease.

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Animal Industry Department of

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ABSORBINE

TRADE MARK REG. U.S. PAT. OFF.

Reduces Bursal Enlargements, Thickened, Swollen Tissues, Curbs, Filled Tendons, Soreness from Bruises or Strains; stops Spavin Lameness, allays pain. Does not blister, remove the hair or lay up the horse. $2.50 a bottle at druggists or delivered. **Book 1 R free.**

ABSORBINE, JR., for mankind—an antiseptic liniment for bruises, cuts, wounds, strains, painful, swollen veins or glands. It heals and soothes. $1 25 a bottle at druggists or postpaid. Will tell you more if you write.

W. F. YOUNG, Inc. 244 Temple St., Springfield, Mass.

For Profitable Durocs

As we have sold out of bred sows and gilts, we are now offering big growthy fall pigs, either sex, at attractive prices.

D. G. Cummins & Son

Route 1 Visalia, Cal.

Duroc Weanling Pigs

By Wavies Professor, grand champion Indiana state fair. Dam, King Orion Lady 2d. Litter mate to King Orion Cherry, second prize junior yearling boar state fair.

Weanling Boar Pigs $25 Each

WALNUT GROVE STOCK FARM
Box 152, Walnut Grove, Cal.

The Willows Ranch

Home of Big Type Poland China Hogs. This Herd Noted for Size and Quality. Correspondence Invited

A. J. ELLIOTT, Proprietor
Box 45, Route 1, Tulare, Cal.

How to Ship Dairy Cows

EACH fall and spring there is normally a heavy movement of springers or fresh cows from the city markets and from dairy breeding regions to the milk producing sections of the country. Careful management will reduce mortality and will increase production over the flow from the average cow carelessly "railroaded."

Valuable pure bred cows usually should be handled by express service, as their increased worth for breeding purposes over that of grade animals, which are usually handled by freight service, justifies the additional expenditure for a rapid trip from the point of loading to destination. Expressage usually costs four or five times as much as movement by freight, but in the case of particularly valuable cows the saving in animal comfort, the shorter time in transit and the better conveniences for feeding and watering animals make the added expenditure advisable. In case pure bred animals cannot be handled by express, they should be loaded according to the special system discussed in this article. As far as possible, dairy cows should be shipped one or two months before they are due to freshen, as repeatedly fresh cows have been ruined, so far as the subsequent lactation period has been concerned, as a result of being shipped shortly before freshening or so as to calve in transit.

Milk cows of grade breeding ordinarily are shipped by freight, dry cows and far springers being most desirable for long shipments. Heifers which are not due to freshen until three or four weeks after arrival at destination make good "buys," as they are of a size and condition which permits of loading the car to capacity. Furthermore, immature animals are less susceptible to injury in transit and to damage as a result of change of environment. So far as possible, animals without horns should be shipped, and where it is necessary to carry any horned animals in railroad cars they should be penned apart or tied securely at one end of the car, so that they cannot injure any of their traveling mates. Where bulls are shipped in mixed carloads, these sires should be confined in pens apart from the other cattle.

Other conditions being equal, it is recommended by specialists of the United States department of agriculture that about 14 mature cows be loaded in a 38 or 40 foot car. A practical arrangement is to tie four cows in each end of the car, facing the end walls, and then rough partitions can be installed so that two other rows of three cows each face a center alleyway between the car doors, where the attendant can stay and extra feed and water can be carried. This arrangement is most comfortable for the cows, as they ride and absorb the shock and jar better, while it also facilitates the operations of the caretaker in feeding the cows and cleaning the car.

Dairy animals, although they require neither petting nor pampering, should be handled under normal conditions before and during the railroad trip. The cows should be fed and watered at regular intervals, and if any of the animals are in milk they should be milked according to regular schedule. It pays to feed grain and hay during a long shipment where the cows are accustomed to these feeds. It is difficult to feed grain in a freight car where no special provisions are made to prevent wastage, as a result of the tendency of the animals to move about where they are not held securely in place. However, on long trips grain can be carried in the car and fed at all points where the stock is unloaded. A competent attendant should always accompany the dairy cows; he should ride in the car with the stock, as often he can avert injury to the animals by prompt action in case one of them gets down or otherwise gets into trouble.

Several large barrels of water, as well as plenty of feed, should be carried in the car as insurance against delay or accident which may detain the train to the extent that without this feed the animals might go hungry or thirsty far beyond the 36 hour limit. Sand is one of the best bedding materials, and during long trips fresh supplies of it should be placed in the car at unloading points whenever they are needed.

THE VALUE OF MANURE

"New countries rarely appreciate," states F. S. Harris of the Utah agricultural college, "the value of barnyard manure. It is not until the soil begins to be depleted of its fertility and the yield of crops begins to decline that manure is given the attention that its value justifies. In new counties it is not uncommon to see manure hauled into a rut in the road or left in scattered heaps along the roadside or the ditch bank. Often a year's accumulation of manure is drawn out of the barn or corral in scrapers and added to a pile containing the accumulation of previous years.

"As the development of the country progresses the rancher begins to feel himself in luck when he has a chance to get his yards cleaned for nothing. A nearby farmer hauls the manure to his own farm, receiving the manure for his trouble. The rancher is likely to consider himself particularly fortunate if he is able to get 25 or 50 cents a ton for the manure besides getting it out of the way. It is not usually until high priced cash crops are raised that the farmer is made to realize how valuable manure really is."

Mr. Harris summarizes the results of experiments as follows:

"The idea sometimes expressed that Utah soils are so fertile that they do not need manure is certainly not borne out by these experiments.

"Manure applied to sugar beets at the rate of ten tons to the acre gave an increase in yield of about one ton of beets for each ton of manure. Five tons to the acre gave nearly two tons of beets for each ton of manure, but where as much as 40 tons to the acre were applied the increase was only about four-tenths of a ton of beets for each ton of manure.

"Where potatoes were manured at the rate of five tons to the acre the yield was increased by nearly 13 bushels for each ton of manure, but where 40 tons were applied the increase was only 4.3 bushels for each ton.

"Manure applied to wheat gave an increased yield of two bushels for each ton of manure where five tons were applied, 1.13 bushels where 15 tons were applied, and only .33 bushel for each ton of manure where 40 tons were applied.

"Manure applied to oats gave an increase of 1.65, 1.21 and .36 bushels of grain respectively for each ton of manure when 5, 15 and 40 tons of manure to the acre were applied.

"The average of nine years of manure applied to corn gave an increase of 3.83 bushels of grain and 428 pounds of stover, and 1.61 bushels of grain and 214 pounds of stover respectively for each ton of manure when 5 and 15 tons were applied to the land each year.

"The use of farm manure under dry farming conditions does not seem to be so immediately profitable as under irrigation; the residual effect of manure under dry farming is very marked.

"The use of manure on expensive crops such as sugar beets and potatoes gave a higher return for each ton of manure than when it was applied to wheat and oats.

"These experiments bring out clearly the fact that manure is much more valuable on Utah soils than it is usually thought to be."

SOME ARIZONA CENSUS FIGURES

The census bureau figures recently released as to livestock in Arizona are as follows:

	No. 1910	No. 1920	Value 1920
Horses	93,803	136,167	$5,744,671
Mules	3,845	11,992	1,415,397
Range and Beef Cattle		768,197	
Dairy Cows		53,721	
Total Cattle	767,042	821,918	35,500,759
Sheep	916,600	881,914	7,123,719
Goats	161,124		
Swine		49,599	885,590
Chickens	252,657	495,065	
Hives of Bees	23,770	28,174	

BULK HANDLING WILL SAVE MILLIONS

Farm bureau centers throughout the state have been discussing bulk handling of grain and the facts disclosed at these meetings have resulted in the belief that millions of dollars will be saved annually if farmers discard the costly method of handling grain in sacks. The cost of installation of metal grain bins on the farm, the building of grain tight wagon boxes and the erection of miniature elevators or loading stations on railroad sidings, it is claimed, will soon be met by the greater economies of bulk shipment.

Robert N. Clapp of Nuevo has sold ten heifers of the King Segis Pontiac breeding to the Santa Monica Dairy Company, the firm which owns the great bull, King Segis Pontiac Jannek, formerly herd header for J. J. Jeffries.

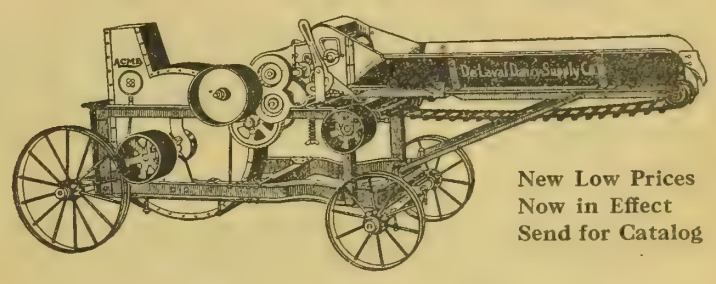
CORN SILAGE CHOPPED ALFALFA

THE BALANCED RATION

The Cheapest and Best Milk-producing cow feed known — correctly and efficiently made by

The ACME Cutter

Acme Cutters are built exceptionally strong to stand continual use season after season. The sound, well riveted steel frame—the center hung blower—the 3-bearing cutter shaft—bearings that stay in alignment—all combine to reduce vibration and wear to the minimum. Careful investigation will prove to you that no other cutter on the market possesses the advantages of the Acme.



New Low Prices Now in Effect Send for Catalog

De Laval Pacific Company

61 Beale Street San Francisco

Cattle Should Have

Copro Brand Linseed Oil Cake Meal

To get results from your cattle you should incorporate "Copro" Brand Linseed Oil Cake Meal in the rations when when feeding. If your dealer cannot quote you prices, write us direct.

Pacific Oil & Lead Works 155 Townsend St., San Francisco

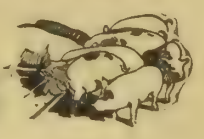
Italian Vineyard Company Big Type Berkshires

Some dandy young boars for herd headers. The choicest breeding and ready for service.

Every one tuberculin tested and cholera immune.

Alex. M. Wilson, Supt. Guasti, Cal.

Cream Calves and Pigs



A Missouri farmer writes:

"I bought a De Laval Separator and in 12 months I sold $400 worth of cream, and received $150 for calves and $270 for pigs which I raised on the skim-milk. I can truthfully say the De Laval Separator is the most profitable investment I have made for some time."

This is not an unusual instance of what a De Laval Separator will do, and thousands of farmers have done even better.

The De Laval Separator saves the most cream and gives you the greatest cash income. It provides skim-milk in the best condition for feeding calves, pigs and poultry. And it gives this excellent service over the longest period of time. That's why there are more than 2,500,000 in use the world over. It is the best and in the long run the cheapest.

Easy terms can be arranged so that it will pay for itself. See your De Laval agent or write us.

DE LAVAL PACIFIC COMPANY

61 Beale Street **San Francisco**

Sooner or later you will buy a

De Laval

Cream Separator or Milker

HG RANCH

Santa Ynez Valley

Breeding Stock of Quality at Farmers' Prices

Ayrshire Cattle
Toggenburg Goats

Harry Gantz, Owner

Hampshire Hogs
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SOLVANG, CAL.

Herd Bulls

Harris Standard 2d

Beau Blanchard 76

Nevada Hereford Ranch

J. H. Cazier & Sons
Wells, Nevada

A government accredited herd. No reactor in 16 years. A herd whose record in the show and sale ring is only surpassed by the esteem accorded its productions by cattlemen. We can furnish bulls or females to fill any need—and at sound prices. Visit our herd or write for information.

GLOBE "AI" FEEDS

-Judge them on Business Principles!

FEED FOR SWINE, STOCK AND POULTRY

ASK YOUR DEALER

King Segis Pontiac Jannek

A proven sire of show winners and high producers is available for service to high class Holstein cows.

SANTA MONICA DAIRY CO.

Farm is on Washington Blvd.
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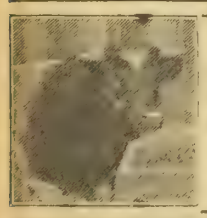
Santa Monica



The farmers are buying Shorthorns, as indicated by the transfer made through the association office. For the three-month period beginning February 1 the transfers have kept close pace with the same period last year, when public sales were more numerous.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION
13 Dexter Park Ave., Chicago, Ill.

When Writing Advertisers Mention California Cultivator.

Report of State Dairy Cow Competition

By F. W. Woll

LIST of cows producing 50 pounds butter fat or over during May:

Adohr Stock Farms, Guernseys and grades: C-421, 1,023 pounds milk, 60.36 pounds fat; C-269, 1,417, 59.51; C-319, 1,039, 57.15; C-310, 1,423, 56.92; C-338, 1,035, 54.86; C-329, 809, 51.78; Leota of S. S., 809, 50.16.

Arden Dairy, grade Holsteins: 982, 1,838 pounds milk, 73.52 pounds fat; 48, 1,801, 61.23; 902, 1,386, 59.60; 976, 1,311, 57.68; 188, 1,345, 53.80; 35, 1,448, 53.58; 58, 1,485, 53.46; 65, 1,364, 51.83; 164, 1,169, 51.44; 249, 1,519, 50.13.

Anita M. Baldwin, Holstein: Thelma Riverside W., 1,937 pounds milk, 84.45 pounds fat; Ellen Walker H., 1,710, 74.38; Anoakia G. P. W., 1,585, 61.18; Marken Louise, 1,717, 54.10.

Dean Beeman, Holsteins: Capunista, 2,048 pounds milk, 75.97 pounds fat; Jacobina, 2,465, 64.33; Bylaria, 1,774, 64.23; Bernice NaD. DeK., 2,032, 52.63; Jean NaD. DeK., 1,436, 51.10.

Berylwood Stock Farm, Holsteins: Fay Tritomia H. W., 1,945 pounds milk, 73.72 pounds fat; Douwe Pontiac, 1,795, 70.90; Romeana Douwe, 1,781, 62.51.

Eug. Biondini, grade Jerseys: Rachel, 1,835 pounds milk, 89.92 pounds fat; 1910, 1,699, 83.25; Shortie's Best, 1,268, 81.15; Hannah, 1,358, 80.12; Twinnie, 1,507, 76.86; Rosalie, 1,302; 74.21; Brownie, 1,352, 73.01; Judy, 1,395, 68.36; 62, 1,080, 58.32; Ruby, 1,060, 54.06.

Bonnikson Bros., Jerseys: Financial C's Lor. D., 1,153 pounds milk, 60.99 pounds fat; Bonnie's Fin. Lor., 800, 51.33.

J. C. Broady, grade Holsteins: Dogie, 1,928 pounds milk, 61.70 pounds fat; Jumbo, 1,786, 57.15.

N. L. Browning, Holsteins: Segis DeK. Bess, 2,107 pounds milk, 73.12 pounds fat.

Burr Farm, Holsteins: Zampa Annie, L. 2nd, 1,899 pounds milk, 65.52 pounds fat; Amelia Bona DeK. 2nd, 2,381, 64.77; Amelia Bona DeK., 1,836, 60.40; Carnation Rag A. DeK., 1,792, 58.24; Goshen Snowb. P., 1,826, 54.78; Lady Veeman, H. T., 1,457, 54.33; Queen of F. L., 1,298, 53.86; Dorothy Kornd. B., 1,602, 51.60; Durasia Canary, 1,838, 51.11.

Leo Christen, grades: Newberg, 2,040 pounds milk, 71.40 pounds fat; Mama Jersey, 1,432, 70.17; Mousie, 1,314, 68.33; Young Lumpjaw, 1,820, 67.34; Buttercup, 1,308, 64.09; Black Beauty, 1,618, 61.48; Lily, 1,494, 61.25; Daisy, 1,234, 59.23; Roan, 1,342, 59.05; Coaly, 1,442, 56.24; Nig, 1,398, 54.52; Hilene, 1,190, 51.17; Bridget, 1,259, 50.36.

D. F. Conant, Jerseys: Lady Kate's Ros., 1,190 pounds milk, 67.02 pounds fat.

J. W. Coppini, Jerseys and grades: Lady Mc., 1,611 pounds milk, 71.21 pounds fat; Noble's Sayda P., 964, 69.20; Hazel Marig. of F., 1,185, 65.67; Olga Fern's Olga, 1,269, 64.86; Chiephana 2d, 1,104, 59.42; St. Helier's M. D., 1,067, 58.56; Marigold of F., 1,013, 66.81; Olga Fern Smith, 953, 51.38.

L. A. Driver, Holsteins: Miss Gerben Col. F., 2,075 pounds milk, 65.76 pounds fat; Anthelmo DeK. B., 2,247, 55.72; Pauline Cornuc. W., 1,879, 53.37; Roseland G. W., 1,634, 50.17.

W. F. Early, Jerseys and grades: Rosy, 1,736 pounds milk, 83.33 pounds fat; Little Darling, 1,500, 76.50; Norene, 1,370, 64.39; Granny, 1,779, 64.04; Butterfly, 1,637, 63.84; Jack Rabbit, 1,116, 63.61; Pencil, 1,572, 62.88; Creamcup, 1,249, 62.45; Darky, 1,618, 61.48; Brindle, 1,221, 61.05; Little Rose, 1,624, 60.09; Pet, 1.420, 59.64; Lineback, 1,265, 59.46; Roany, 1,550, 58.90; Buck, 1,104, 58.51; Annie, 1,296, 58.32; Black Ward, 1,197, 57.46; Humboldt Maid, 1,101, 50.65.

M. J. and B. A. Edwards, Holsteins: Sarcastic Dora of M., 1,877 pounds milk, 58.57 pounds fat.

El Mirador Dairy, grade Holsteins: Belle, 1,451 pounds milk, 59.49 pounds fat; 53, 1,575, 58.28; 112, 1,113, 53.42.

C. E. Fisher, grade Jerseys: Minnesota, 973 pounds milk, 50.60 pounds fat.

J. A. Genzoli, grades: Star, 1,525 pounds milk, 83.88 pounds fat; Jill, 1,481, 82.94; Brownie, 1,314, 80.15; Pansy, 1,354, 75.82; Blue Spot, 1,767, 74.21; Fannie, 1,376, 71.55; Sarah, 1,553, 71.44; Baby, 1,528, 70.29; Princess, 1,351, 68.90; Josie, 1,144, 59.49; Lena, 880, 51.04.

Giacomina & Pedrotti, grades: Georgia, 1,308 pounds milk, 70.63 pounds fat; Sassy, 1,320, 69.96; Peany, 1,357, 67.85; Daisy, 1,181, 67.32; Roan, 1,202, 67.34; Pearl Smith, 1,054, 62.19; Buttercup, 1,144, 60.63; Brindle, 1,051, 58.86; Six Teats, 1,001, 58.06; Francis, 992, 57.54; Taby, 1,261, 56.75; Arlene, 1,336, 56.11; Fanny, 1,016, 54.86; Black Eye, 1,072, 53.60; Pearl, 1,212, 53.33; Gladys, 1,565, 53.21.

Earl Graham, Holsteins and grades: Hauser, 1,739 pounds milk, 88.69 pounds fat; Gamma Sarcastic of L., 2,423, 83.34; Black Emma, 1,835, 73.40; Peg, 1,705, 73.32; Princess Maida V., 3,022, 72.82; Cora Jarie P., 1,715, 70.99; Tomie, 1,714, 70.27; Pinkie, 1,987, 69.55; Montana, 2,012, 68.41; Smithy, 1,962, 66.71; Alice, 1,798, 66.53; 21, 1,832, 64.13; 5, 1,558, 59.69; Valentine, 1,866, 59.71; Rose, 1,516, 59.12; Jersey, 1,287, 57.92; Donnoly, 1,606, 57.82; White Emma, 1,243, 54.69; Brownie, 1,522, 53.27; Niger Heifer, 1,479, 53.24; May Walker G. K., 1,575, 52.93; Miss Segis P. W., 1,466, 51.75; Spencer, 1,246, 51.09.

W. B. Gries, grades: Nig, 1,256 pounds milk, 74.10 pounds fat; Bessie, 1,088, 65.28; Brindle, 1,395, 64.17; Shorty, 1,256, 59.03; Whitie, 1,203, 54.14.

H. G. Gross, Jerseys: Cynthia of B. V., 1,186 pounds milk, 62.87 pounds fat; Lydia's Valentine, 949, 62.76; Francesca of E., 1,096, 59.48; Raleigh's Echo Girl, 821, 55.22; Raleigh's Ang. Girl, 1,225, 53.64; Raleigh's Peggy M., 846, 51.03.

J. B. Harbers, grade Jerseys: Brindle, 815 pounds milk, 67.71 pounds fat; Nellie, 1,225, 66.15; Flora, 1,020, 65.28; Polly, 1,265, 64.52; Clara, 1,057, 64.47; Champion, 1,138, 61.45; Helen, 1,042, 59.39; Bertha, 1,318, 59.31; Daisy, 1,128, 58.66; Edith, 1,138, 58.04; Molly, 1,104, 57.41; Princess, 849, 56.03; Cora, 794, 52.40; Fancy, 1,063, 52.09; Pauline, 890, 50.73; Lulu, 890, 50.73; Mabel, 831, 50.69.

Fred Hartsook, Holsteins: Bessie Snowball DeK., 2,600 pounds milk, 90.21 pounds fat; Miss Aaggie DeK. Merc., 2,315, 88.44; Athenia Rod. L., 3,119, 82.34; May Altoone Pontiac, 2,188, 82.27; Alexandria DeK. P., 2,659, 81.37; Aegis Tubie C., 2,465, 79.62; Junette Heng. C., 2,713, 76.79; Miss Aaggie O. S., 2,269, 74.18; Parthenia Champion, 2,268, 72.79; Parthenia Paul S. 2d, 2,502, 72.30; Sarcastic Bl. Cir. DeK., 2,350, 71.43; Fascination DeK. 2d, 2,320, 70.07; Queen Canary S., 2,416, 70.06; Annie Langtry DeK., 2,180, 69.54; Ciruela Car. W. DeK., 2,011, 68.59; Beryl Mortun L. DeK., 2,586, 67.76; Dora Netherl. S., 2,382, 66.69; Juliana Elza of R., 2,110, 64.78; Mutual DeK. Joh., 1,749, 62.09; Viola Canary S., 2,255, 62.01; Colantha Pauline K., 2,234, 58.75; Rosamaines Dora J., 1,744, 55.11.

Ferndale, June 20, 1921.

California Cultivator,
Los Angeles.

Dear Sir:

Received your check for $25 and I thank you. It came as a surprise to me, as I didn't think I would win any prize, for when I came on the place on January last I found it badly run out and I haven't the feed I should have for my cows, but I am willing to take a tip any time, which is encouraging to me. In the last ten years I have tried different breeds of cows but from now on my motto will be "Jerseys for mine."

Thanking you again, I remain,

Eugene Biondini.

Nate Hauck, grades: Bally, 1,992 pounds milk, 88.41 pounds fat; Brownie, 1,602, 80.10; Nigger, 1,782, 73.06; Slow, 1,525, 70.15; Brindle, 1,943, 69.94; Speck, 1,705, 66.49; Strap, 1,336, 58.12; Sister, 1,091, 52.36.

C. D. Hayworth, Jerseys: Duchess of Ransom, 1,333 pounds milk, 56.91 pounds fat.

A. B. Humphrey, Guernseys: Calla Grove Itchen M., 1,108 pounds milk, 55.85 pounds fat.

Peter Iversen, grades: Marcella, 1,469 pounds milk, 85.20 pounds fat; Black Jersey, 1,333, 67.98; Baby, 1,215, 66.83; Red, 1,308, 65.40; Old Jersey, 1,200, 64.80; Poor, 1,293, 64.65; Kicker, 1,575, 64.58; Yellow Jersey, 1,166, 62.96; Holstein, 1,132, 61.13; Freddie, 1,023, 56.27; Old Red, 1,404, 56.16; Toughy, 1,026, 51.30.

L. A. County Farm, Holsteins and grades: Tuolumne, 2,536 pounds milk, 93.84 pounds fat; Trinity, 2,506, 85.19; Whittier Pont. N. 4th, 2,168, 84.54; Princess, 1,542, 67.83; Amador, 1,768, 60.10; Whittier Segis P. M., 1,576, 55.17; Blossom, 1,707, 54.61; Sunland Peerless T. K., 1,614, 51.65; Domino, 1,326, 50.38.

Estate of J. Henry Meyer, Ayrshires: Finlayston's Annie L., 1,401 pounds milk, 57.31 pounds fat; Bright Eyes of H., 1,270, 53.59.

Napa State Hospital, grade Holsteins: 715, 2,241 pounds milk, 74.86 pounds fat; 651, 1,885, 68.62; 760, 1,794, 57.41.

Palo Alto Stock Farm, Holsteins: Thelma Hartog S. DeK. 4th, 2,500 pounds milk, 80.51 pounds fat; Alta Joh. Princess, 2,097, 76.32; Irene Segis Pont., 2,095, 74.16; Alta Pappoose, 2,290, 73.04.

F. F. Pellissier, grade Holsteins: 2423, 1,854 pounds milk, 76.01 pounds fat; 2479, 2,303, 76.00; 2403, 1,736, 72.91; Princess Tolia W., 1,984, 69.44; Mamie Pontiac, 1,488, 62.50; 2416, 1,882, 62.11; Brudorin, 1,733, 60.66; 1899, 1,522, 56.31; 1917, 1,494, 50.80.

M. L. Pontoni, grade Jerseys: Klamath, 1,851 pounds milk, 83.30 pounds fat; Arcata Girl, 1,535, 69.08; Beauty, 1,535, 66.01; White Tail, 1,618, 63.10; Mouse, 1,779, 62.27; Meschini, 1,798, 61.13; Mabel, 1,566, 59.51; Margaret, 1,371; 57.58; Belle, 1,234, 56.76; Berne, 1,448, 53.58; Rolley, 1,755, 52.65.

Hugh F. Richards, Jerseys: Teddy R's Silver B., 1,418 pounds milk, 63.12 pounds fat; Victor's Lady Q. 2d, 1,371, 60.71; Teddy R's Poppy G., 991, 56.81; Victor's Queen N. 2d, 882, 50.54.

John Rowe & Sons, Shorthorns: Alma, 1,469 pounds milk, 53.75 pounds fat; Greenhill Caroline, 1,543, 53.24.

Olga Saxer, Holsteins, Moorland Col. Rose, 2,990 pounds milk, 100.77 pounds fat.

W. Terkelsen, grades: Christina, 1,773 pounds milk, 81.56 pounds fat; Annie, 1,479, 78.39; Laura, 1,662, 76.45; Friday, 1,209, 71.33; Amy, 1,302, 66.40; Lucy, 1,401, 64.45; Edna. 1.091. 62.19: Ethel, 1,172, 60.94; Evelyn, 1,386, 59.60; Lina, 1,187, 58.16; Monday, 1,113, 56.76; Babe, 1,175, 55.23; Pale Face, 1,344, 51.07.

University of California, Guernsey and grade: Calif. Questa Queen, 1,133 pounds milk, 54.17 pounds fat; Ramona, 1,527, 50.38.

H. L. Wakeham, grades: Jim's Wonder, 1,993 pounds milk, 103.64 pounds fat; Big A, 1,283, 71.85; Brown Jersey, 1,286, 59.16.

R. H. Walrath, grades: Pansy, 1,522 pounds milk, 62.40 pounds fat; Minnie, 1,417, 60.93; Amy, 1,383, 52.55.

Warne & Sons, Holsteins: Fayette Segis, 2,156 pounds milk, 72.64 pounds fat; Bessie Abbek. Col. 2d, 1,795, 56.54; Miss Floa Juliana, 1,848, 53.96; Bertha Pontiac J. 2d, 1,733, 52.

The reports for May so far received show that 618 cows in milk during the full month produced an average of 1,243 pounds milk and 50.65 pounds butterfat (average number of days in milk at the beginning of the month, 117).

Two cows produced over 100 pounds butterfat during the month; the one, a grade Jersey, Jim's Wonder, is owned by H. L. Wakeham of Santa Ana (1,993 pounds milk, 103.64 pounds butterfat). This is the fourth month during the present lactation period that this grade has produced over 100 pounds butterfat, and her total credit to date is 511.75 pounds butterfat during 151 days, equivalent to nearly 600 pounds commercial butter, or an average of almost four pounds per day for five months. The other cow producing over 100 pounds butterfat during the month is a pure bred Holstein, Moorland Colantha Rose, owned by Olga Saxer of Modesto (2,990 pounds milk, 100.773 pounds butterfat). This cow has poduced over 550 pounds of butterfat during 166 days of the present lactation period, a similar average production per day for the period as that of the peceding grade.

Two cows produced between 90 and 100 pounds butterfat during the past month, 21 between 80 and 90 pounds, and 47 between 70 and 80 pounds. This is a larger proportion of exceptionally high records than during any previous month of the competition.

The California Cultivator prize for May was won by Eug. Biondini of Ferndale, for an average production by five grades of 82.26 pounds butterfat (ranges, 76.9 to 89.9 pounds). These grades stand first among the groups of five cows in 27 different dairy herds that competed for the Cultivator prize for the past month. The average production for the grades in all the herds but six came above 50 pounds of butterfat, the lowest producing group averaging 33.36 pounds butterfat for the month. Five grades in the herds owned by the following dairy farmers produced on the average over 50 pounds of butterfat: Eug. Biondini, 82.26 pounds; N. Hauck, 76.33 pounds; J. A. Genzoli, 75.81 pounds; W. Terkelsen, 74.83 pounds; Earl Graham, 71.09 pounds; W. E. Early, 70.42 pounds; Peter Iversen, 70.04 pounds; M. L. Pontoni, 68.75 pounds; Giacomini & Pedrotti, 68.61 pounds; Leo. Christen, 68.27 pounds; H. L. Wakeham, 66.36 pounds; J. B. Harbers, 65.63 pounds; Los Angeles County Farm, 64.33 pounds; W. B. Gries, 63.34 pounds; Arden Dairy, 61.17 pounds; F. F. Pellissier, 60.62 pounds; Napa State Hospital, 59.63 pounds; Adohr Stock Farm, 56.69 pounds; R. H. Walrath, 53.94 pounds; El Mirador Dairy, 52.56 pounds; and J. C. Broady, 50 pounds. This is the second time that the Cultivator prize has been won by a Humboldt County farmer, and also the second time in eight months that it has gone outside of Los Angeles County.

PICKINGS FROM THE CENSUS

There are 9,506 farms in California reporting pure bred livestock of some kind. Five hundred eighty-eight of these report pure bred horses. More than half the number of farms having pure bred stock report pure bred cattle, or, to be exact, 5,179. Of course the dairy breeds predominate, as is reported from 3,959, while the beef breeds are reported from 1,401. Pure bred sheep are maintained on 371 farms, while swine are a favorite and bred on 4,886 farms.

The horses are divided up as follows: Percherons, 769 of both sexes. The next favorite is the Belgian, 152; Shires, 110; Thoroughbred, 113; American Saddler, 27; Clydesdale, 37; German Coach, 24; Standard, 35; all others, including ponies, 348. Total pure bred horses, 1,615.

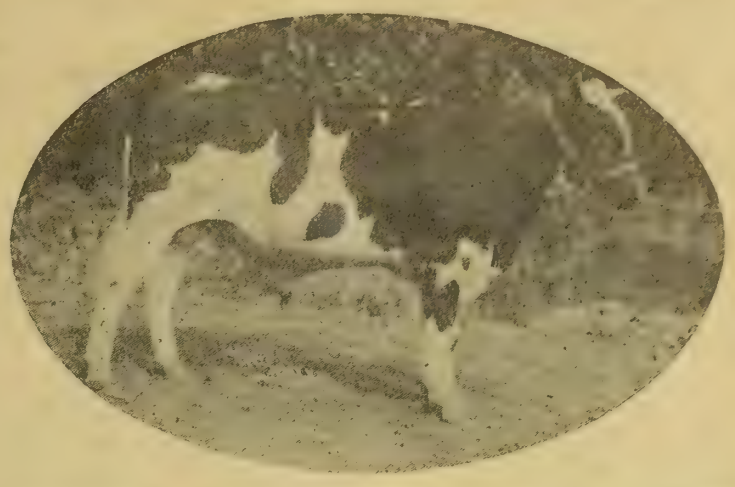
As shown by numbers the Hereford is the favorite of the beef breeds. There are 5,238. It is rather surprising to note that the numbers of Polled Durhams and Shorthorns are almost identical. Polled Durhams report 3,100, Shorthorns report 3,045. Aberdeen-Angus come next with 1,182, with the Devons showing only 124. Total, 13,244.

Dairy breeds give the place of honor to the Holstein. Of that breed there are in California 12,189. Jerseys are second with 3,832. Guernseys are third with 1,145. Then come Ayrshires, with 595; Brown Swiss, 36; all others, 1,347. Total, 19,144.

In sheep the Rambouillet is the leader with 15,175; Shropshire, 6,242; Merino, 5,010; Hampshire Down, 1,372; Lincoln, 148; Dorset Horn, 48; others, 768. Total, 28,831.

The Duroc-Jersey is the favorite of the swine breeds with 14,153; Poland China, 11,146; Berkshire, 5,348; Hampshire, 2,699; Chester White, 997; Yorkshire, 333; Tamworth, 96. Total, 35,741.

Sir Prince Aaggie Mead



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His sire, KING AAGGIE MEAD, is the one and only son of the great King Mead of Riverside retained for service in the A. W. Morris & Sons herd, and is thus by a son of De Kol of Valley Mead, founder of the great Mead family, and is out of Aaggie Acme of Riverside, founder of the now famous Aaggie Acme family.

His dam, MISS VALLEY MEAD DE KOL WALKER, the greatest female descendant of De Kol of Valley Mead yet developed, and rated as one of the breed's greatest young matrons. She has three splendid sons in active service to transmit her tremendous production and excellent type.

SIR PRINCE AAGGIE MEAD is being mated with some of the highest class females in both our herds. Keep your eye on his get, for you will want one of his sons in your own herd later on.

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NAMING THE FARM

Here is the text of the California law as to procedure necessary to secure exclusive right to your chosen name for your farm. It is worth keeping for some day, no doubt, you will decide that your farm, as a business proposition and as a home, is worthy of a distinguishing title.

"Any farm, ranch or villa owner in this state may upon the payment of one dollar to secretary of state, have the name of his farm, ranch or villa duly registered in a register which the secretary of state shall keep for said purpose, and shall be furnished a certificate, issued under seal, and setting forth the name and location of the farm, ranch or villa, and name of the owners; provided, that when any name shall have been recorded as the name of any farm, ranch or villa, such name shall not be recorded as the name of any other farm, ranch or villa in this state, except by prefixing or adding of designating words thereto. The secretary of state shall register such name only for the person entitled thereto.

"Any person, who shall register as his own, any such name already in use in this state, knowing such name to be adopted as the name of a farm, ranch or villa therein, or shall make use of such name when regularly registered and in use by any other person entitled thereto under the provision of this act, shall be guilty of a misdemeanor."

THE BIG NOISE

An Italian fruit dealer was caught in the railroad yards in his Ford truck. Becoming excited, he killed his engine, stopping the truck on the track, from which it was knocked by a switch engine. Next day a friend asked him if the car was badly damaged.

"Yes," replied the Italian, "he pretty bad smasha up."

"Did it damage the engine very much?"

"No, I tanka not. De horn he stilla blow."

HONORABLE TROPHIES

An army recruit went on parade one day with six medals on his chest.

"Ah," said his officer, "you have seen service?"

"No, Sir."

"Then what are those medals? You have no right to them!"

"Sure I have. Didn't my pigs win six first prizes at the county fair?"

NOT ON SPEAKING TERMS

Mother: Joan, darling, run and call Fido, will you?

Joan: I don't see how I can, mummy, 'cos I aren't speakin' to Fido since he broke my doll.

The Business of Farming

ONE of the most serious questions confronting the farmer today is that of securing labor. Its cost is exceptionally high; its quality, while better than a year ago, is still desperately low. So the farmer is asking "How can we produce more and at the same time employ less labor?"

In an address delivered before the Columbus Tractor Show committee President Finley P. Mount of the Advance Rumely Company argued for more extended use of farm power. He said:

"Six years before the Clermont steamed up the Hudson under its own power Robert Fulton had demonstrated his invention on the River Seine before the most distinguished body of scientists the great First Consul could get together. The verdict of this French jury was negative. They believed their eyes, but they also believed the old ways better than the new ways. They pronounced navigation by steam entirely too expensive to be practical. As a result the invention of the steamboat and the honor of applying steam to navigation on its own waters came to this new and untried country of America. One trial before America resulted in immediate adoption and pushed the whole world farther forward on its road to commercial progress than all that had gone before.

"Of every modern invention designed to increase the power and productivity of man, to lift civilization from a primitive state of barter to its present highly organized system of modern commerce, a like story can be told. Always it is the quick adaptability of the American, who promptly drops the old, seizes upon the new, and just as promptly takes primacy in the world of progress. It was so of the railroad, of the telegraph, of the telephone, of applications of electricity in all its phases, in the mine, in the factory, on the farm; from the primitive hand needle to Elias Howe's sewing machine, from the slow process of man power to Eli Whitney's cotton gin, from the highly developed horse to the modern automobile, from the most up-to-date bookkeeper to the Burroughs adding machine, from the sickle to the scythe and cradle, from these to the McCormick reaper and then on up the line to the modern binder and modern harvesting machinery, from the ox yoke and goad to the neck yoke and reins and thence to the steering wheel of agriculture's latest and greatest invention, the modern farm tractor. Always it is the same story. He has substituted mechanical power for living power. He has multiplied an hundredfold the power of human hands; he has applied brain as well as brawn to all his problems and he stands today in all lines of human endeavor the greatest producer per man power involved the world has ever seen.

"This statement is particularly true of the American farmer. The European produces more food per acre farmed than does the American, perhaps on an average twice as much, but the American farms ten times the acreage of the European. The average acreage farmed per man in Europe is less than five; in America it is more than 50. It is intensive against extensive production. So long as the land and equipment hold out the odds will remain five to one in favor of America.

"The thing which has enabled the American farmer to hold this position is his readiness to take on improved methods and particularly his use of power farming machinery. The story of the development and expansion of American agriculture in the last hundred years reads like a romance. In 1820, 95 per cent of the population of the United States lived on farms and engaged in the production of food for themselves and the remaining five per cent in the cities. By the census in 1920 but 48 per cent of the population of the United States live on farms and 52 per cent live in cities.

"What is it that has made possible this tremendous change in the producing power of the American farmer? What is it that has made it possible for 48 American farmers to do what 100 years ago it required the work of 85 to accomplish? It is improved agricultural machinery, and the latest and greatest of these is the farm tractor.

"The 300 million acres devoted to farming in 1850 increased in 1875 to 500 millions and is now well over 900 million acres, and of this but little over half is actually devoted to the raising of crops. Land has always been and yet is so abundant in this country, and comparatively cheap, and labor, even before the great war, had become so scarce and commanded such high wages that the American farmer has been forced to extensive rather than intensive methods of farming, and this, of course, means the increasing use of power farming machinery.

"When we speak of power farming machinery, our minds naturally revert to the farm tractor, because the farm tractor is the newest form of labor saving and crop increasing tool created for the farmer's use. It must not be overlooked, however, that while the farm tractor and the power plow are of vast importance in increasing the wealth of the nation, the grain separator, the corn harvester, the ensilage cutter, and the hundred and one other power driven machines hold the very important position of saving or converting the crop after it is produced."

IMPORTING MILK PRODUCTS

Answering query from a subscriber as to tariff and internal revenue taxes on margarine and milk products Sam H. Greene of the Dairy Council writes:

"There has been no 'process' butter sold in this state for a number of years so far as I know. Process butter is made in the large cities of the Mississippi Valley. In this territory there is a large quantity of farm butter. Farmers usually keep two or three cows and therefore have a small surplus during the spring and early summer. As they do not produce enough cream to sell to a creamery they make butter on the farm. It is either traded out at the store or bought by peddlers who go through the country for that purpose. Of course it is of all kinds, qualities and conditions. It eventually finds its way to the big cities, where there are concerns that made a business of melting it, removing the salt and impurities, deodorizing it and then reworking it with sweet milk or cream and resalting it. The resulant product is termed process, or renovated butter. All such butter pays a tax to the United States government through the internal revenue department.

"Oleomargarine is also taxed by the federal government. If it is uncolored the tax is one-quarter cent per pound; if colored, ten cents per pound. This, you undersand, is an internal revenue tax.

"There is an import duty upon butter from foreign countries of two and one-half cents per pound. The same applies to oleomargarines coming in from foreign countries. No oleomargarine is imported.

"There is an emergency tariff bill now being considered by congress which carries an import duty of six cents per pound on butter. I do not know if it carries a duty on oleomargarine, but I assume that it does. There are two kinds of oleomargarine manufactured in the United States. One is made from animal fats, either with or without the addition of a small percentage of butterfat. The other is made from coconut oil and skim milk. It contains no butterfat. Four years ago we were using in California less than half a million pounds of oleomargarine of both kinds. For the 12 months ending June 30, 1920, the sales in this state were a little over ten million pounds, mostly of the coconut oil variety."

LIVESTOCK COST ACCOUNTING PAYS

Under present market conditions it becomes more necessary than ever, says W. H. Peters, head of the animal husbandry division at university farm of the Minnesota college of agriculture, that the stock grower should know what it is costing him to produce the different types of stock on his farm. A separate account should be kept for each kind of stock, the following items featuring each account:

An inventory of the stock at the beginning of the year.

All feeds used and these should be charged for at the prices prevailing locally at the time of year when they would have been marketed had they not been fed to the stock.

A fair rental for all pasture land used.

The cost of all animals purchased during the year.

Interest, depreciation and insurance on the equipment other than the stock itself.

Insurance on the stock, if carried.

Labor used in caring for stock.

Care should be taken in making the inventory, estimating as accurately as possible the amount and value of feeds consumed and the amount of labor used. It is seldom practical to weigh all feeds used, but the amounts can be estimated accurately enough so that the cost record will be reliable.

Then in striking a balance at the end of the year a careful inventory of all stock should be made again and this, together with the money received from sales and a reasonable allowance for manure produced, should be totaled for the credit side. All the items listed above should be totaled for the debit or cost side. The credit total minus the debit or cost total will represent the interest or dividend on the capital invested in the stock.

Such an account will show weaknesses in the average method of handling livestock and the places where costs have been too high, also some possibilities for reducing costs in the future. The paying and non-paying types of livestock will be disclosed. No manufacturer can make his business pay without an accurate system of cost accounting. It is at least reasonable to assume that a careful system of accounts will help materially to show the livestock producer wherein his big problems lie.

FIGURING THE BULL'S VALUE

If the value of a pure bred sire in a grade herd of dairy cows was fully appreciated by the average dairyman the dairy situation in this country would in a comparatively short time be on a much higher plane than is now the case.

Probably the best way to convince a farmer of the value of a change from his old beaten path is to show him by figures and facts the increase in hard dollars and cents due to a new practice. For that reason the following case is given: Suppose we take a herd of 20 grade cows which have an average milk production of 4,000 pounds per year. It is very easy, by the use of a good pure bred bull, to increase this production 1,000 pounds in the offspring. If this milk is worth $2 per hundred pounds on the farm, which is a conservative estimate, the yearly increase will be $20 per cow over the original cows which produced 4,000 pounds. Now then, what is a pure bred sire worth at the time of purchase simply from this standpoint?

The average life of the cows we shall figure as eight years, six of which they will be giving milk. The rate of interest shall be five per cent. If we purchase our bull today it will be at least a year before all our cows have calved and it will be an additional two years before these heifers are in milk. Thus we see we cannot figure our profit before the end of the fourth year.

Value of increased product per cow per year: Fourth year, $20; fifth year, $41; sixth year, $63.05; seventh year, $86.20; eighth year, $110.51; ninth year, $136.04.

The total value of increase per cow at the end of nine years is $136.04. This amount nine years hence will only be worth $87.70 today. Thus we see that the cash value increase per cow is $87.70 at the time of purchase of the bull. In this herd we should expect to get nine heifer calves, and of this number there should be six of sufficient merit to raise. So multiplying $87.70 by six we get $526.20, which is the true cash value of the bull at the time of purchase due to the value of increase in milk production in the first generation. The larger the herd the more the bull will be worth.

The dairyman cannot make a better investment than to buy a pure bred bull of good stock to head his herd. Join a cooperative dairy bull association. See your county agricultural adviser about it.—University of Illinois.

ALFALFA GROWERS' ORGANIZATION

The reorganized Alfalfa Growers should move right along to a successful consummation of all their plans for the stabilizing of prices and the salvation of their industry.

It is an industry absolutely essential to the welfare of California. And as other important industries have been saved to their owners and to the world by the adoption of the cooperative method of marketing, there is every reason to believe that this great basic source of wealth and means of preserving life will also be maintained in volume of product and satisfactory average of returns, once the growers organization shall secure control of the situation.

It is a mystery why farmers in any line in California should hesitate about organizing for cooperative marketing.

The system has done so much for the raisin and peach grower and is doing so much for farmers in many other lines that it would seem safe to assume that no producer would think of sticking to the old discredited competitive selling under which the industries mentioned were threatened with extinction, and by reason of which the farmers of wheat and other staples are now suffering unprecedented losses. The lesson should have been learned, long ago, by every farmer in the land, and not a pound of farm product should now be finding its way to market through the old competitive channels.

No more time or money should be lost. Farmers should organize everywhere, and in all lines of farm industry for the intelligent cooperative marketing of their crops.

But in the alfalfa business the organization is already formed. Much good was accomplished even under the former imperfect organization. Now, with a richer experience and solider organization, there should be no trouble in securing a proper price for the commodity. That is all the alfalfa grower asks for, and that he is fully entitled to receive.

Growers should remember that the result depends upon themselves. Organized they can secure their full rights; disorganized they are at the mercy of circumstances similar to those that have always operated to the disadvantage of honest industry.

Why should any farmer hesitate between such alternatives? There should be no waiting. Every alfalfa grower who has not already done so should at once ally himself with the organization, selling his crops through it, to the advantage of himself, his neighbors and the state.—The Cooperative Californian.

Guernsey Bulls

We are offering some dandy young bulls—some ready for service—for sale

They Are Moderately Priced

Sired by Nobleman of Richneck, senior champion at Los Angeles and Riverside last fall—and by Bullion of Edgemoor and out of high record cows.

——16 May Rose Crosses——

Write and see how cheaply you can own a good one

GRAPE WILD FARM

A. B. Humphrey, Owner Escalon, Cal.

Grain Growers Marketing Plan

The U. S. Grain Growers, Inc., is sending out a booklet of information, "Grain Marketing Plan of the Committee of Seventeen," which explains the working plan of the great cooperative organization of the grain growers of the United States. Copies may be had by writing U. S. Grain Growers, Inc., 59 East Madison Street, Chicago. From a circular sent out by President Gustafson we quote:

There are two things which farmers must do to assure success for this historic movement:

First, pay $10 for a life membership in the U. S. Grain Growers, Inc., and sign the grower's contract.

Second, subscribe, wherever it is at all possible, for stock in the Farmers' Finance Corporation, admittedly the most important phase of this promising effort to remedy the injustices to which the farming community is subjected.

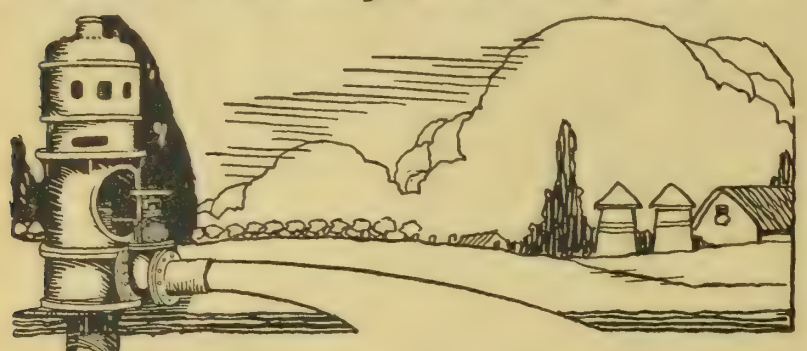
Stock will be issued in amounts of $100 and up and certificates will be offered for sale by membership solicitors while organization work is in progress, thus eliminating the expense of a second campaign.

No farmer can afford to lose sight of the importance of the Farmers' Finance Corporation. It ranks second only to the U. S. Grain Growers, Inc., itself, and if carried to fruition will put the farmer in a position where he will be independent of unsympathetic financial interests for all time. The Farmers' Finance Corporation will be a $100,000,000 corporation, and in point of magnitude will be second to only one other finance institution in the United States. However, it will be concerned only with the financing of farmers' cooperative marketing organizations. The needs of the farmer owned national grain sales company, of course, will come first, but it will be friendly to cooperative organizations concerned in the marketing of all farm products.

The Farmers' Finance Corporation will be under the supervision of the same farmer directors who are responsible for the U. S. Grain Growers, Inc. The Farmers' Finance Corporation will have a standing in the business world that will not be excelled. It will be the farmers' own credit institution upon which the grain growers and other farmers may depend.

Farmers' money is now and always has been used to finance the business interests of the nation. This corporation will remove all chance of producers' money being used in channels opposed to cooperative marketing. Briefly stated, a request that you subscribe for stock in the Farmers' Finance Corporation is merely a proposal that you invest some money in your own business.

The cheapest water



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Our engineering department is at your disposal—no obligation on your part.

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Wherever water is to be lifted

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A Combined
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3,600 acres pronounced by experts the ideal location for avocado and citrus planting. Protected from frost and wind in combination with good soil. Nearly $250,000 spent on irrigation plant, roads and other improvements. The Hacienda Country Club will soon have their golf course and club house finished in this property.

Ideal conditions for avocado and citrus growing. Fine country club for recreation; beautiful homesites.

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Alfalfa Growers Market Letter

Receipts of alfalfa hay, while somewhat larger than during preceding weeks, are still light for this time of the year and consist largely of ordinary and low quality hay. It now looks as if this year's production would in most parts of the state fall short the equivalent of at least one cutting and probably decidedly more than that as far as the higher grades of hay are concerned. The market continued firm with a further stiffening up in the prices of the higher grades, offerings of which have become very light. Supplies in the hands of dealers and users still remain very small. Current prices are of course still too low, from the standpoint of cost of production plus a legitimate margin of profit, but it would be a mistake on the part of the growers to expect a rapid return to adequate prices. Such a return must come gradually or it cannot be maintained. It would lead to violent and erratic price fluctuations, thereby unsettling business more than ever and postponing the return of stable conditions of regular demand and free consumption. We must bear in mind that it was the very unfavorable money and credit situation, beginning last fall, which brought about the intense and long drawn out general business depression and tremendous price declines, and which in turn compelled dealers and users of alfalfa to reduce and practically exhaust their stock on hand and then buy from hand to mouth only. This situation was not less unsatisfactory to dealers and users than to growers, but there was no help for it. While this general depression has not yet disappeared it has of late become gradually less severe, encouraging the belief that we are on the road again to normal conditions, and making alfalfa buyers disposed to again take hold more freely, especially in view of the inherent strength of the alfalfa situation. Further improvement in the money and credit facilities being promised by the authorities, from President Harding down, we may look for a further gradual improvement in the alfalfa market and the alfalfa business generally, provided of course that these promises are kept. This return to normal conditions can, however, only be brought about by the buyers feeling reasonably sure that they are running no serious risk in buying freely at the current prices during the next few months and are also fairly sure of finding it profitable to do so. It would therefore be a mistake on the part of the growers if they were to discourage this demand by advancing their prices too quickly. We do not mean by this that we advise growers against holding part or all of their hay for sale next fall and winter, if they want to do so; on the contrary, it is very desirable that a substantial part of the production should be so held back by the growers who are able to carry it in order to fill the demand during the six or seven months of the year during which no hay is being produced. What we advise against is the refusing of fair offers during a time of good demand by growers who need the money to meet their current obligations; they should make up their mind to keep their sales a little ahead, if possible, and not behind their money requirements, so that afterwards they do not have to force sales at the wrong time. If after having made these provisions they wish to hold the balance of their production they are then in much better position to do so. In other words, our endeavor is to come as near as possible under existing conditions to establishing a market throughout the year on basis of cost of production plus a fair profit, and of course a fair additional margin for such part of the production as will have to be carried for consumption during the non-producing time of the year. By thus doing all we can to stabilize the market on a fair basis and at the same time give due consideration to the protection and promotion of the other legitimate interests of dealers and users, we believe we are operating in the best interests of buyers as well as producers.

COTTON WAREHOUSES APPEAL FOR LICENSES

There has been a marked increase in the demand for cotton warehouse licenses during the past year. In the administration of the United States warehouse act 242 such licenses were issued since July 1, 1920 by the bureau of markets, United States department of agriculture, and applications were received for 289. During the previous year 106 applications were received and 24 licenses issued. The increased interest in the licensing of cotton warehouses is thought by department specialists to be due largely to the following facts:

The Atlanta federal reserve bank is actively encouraging warehousemen to become licensed and bonded under the United States warehouse act and a cooperative agreement has been entered into with the Georgia state bureau of market whereby the state bureau furnishes a free grading service to all licensed warehousemen who desire it. The governor of the federal reserve bank at Dallas has recently taken an active interest in the act and is circularizing member banks in his district in advocacy of the federal system of warehouses.

Very substantial reductions in the rates of fire insurance on licensed warehouses have been granted by the various rating bureaus in the South. In a majority of Southern states this reduction amounts to 25 per cent from the scheduled rates; in other Southern states the reduction ranges from 25 per cent on certain classes of warehouses to 10 per cent on others. Ten per cent is the minimum concession. The federal farm loan board has approved forms of receipts to be used under the regulations and steps have been taken to secure like approval from the federal reserve board.

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$1000 Cash

(Balance 12 Months)

Yuba 20-35 completely overhauled by the Los Angeles Yuba Agency, where it may be seen. The tractor is in good operating condition.

Price $2,000; $1,000 cash, balance by note, 12 months 7%.

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This has increased crops up to 500%. It prevents wire worms, smutty grain and potato scab. For Lime-Sulphur Solution use DIAMOND "S" BRAND REFINED FLOUR SULPHUR. For dry dusting use ANCHOR BRAND VELVET FLOWERS OF SULPHUR. Against rodents use CARBON BISULPHIDE. Write for circulars 6, 7 and 8, price list and samples.

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Better service is assured by the advertiser if when writing you mention the California Cultivator.

CONDITIONING THE PULLETS

(Continued from Page 5.)

is done. The feeds carrying a great deal of protein, animal protein especially, should be cut down. The feeds carrying a great amount of fiber, such as bran, ground oats, alfalfa meal, which the birds should get during the summer or growing season, should be cut down, and the feeds carrying great amounts of carbohydrates or fattening elements and small amounts of fiber should be materially increased.

"The simplest and perhaps the handiest way to make this change under ordinary circumstances is to add more cracked corn to the scratch feed and to increase the amount of corn or hominy feed in the mash by about double the amount of feed used during the summer. Increase the amount of scratch feed given daily until they get about all they will clean up, and it will be found that if the corn is of good quality, dry and sweet, the birds will eat almost their whole ration of this scratch feed. Sometimes they may leave a few oats or barley. If they do, don't cut down on the amount of scratch given, but decrease the amount of these feeds in your scratch feed." This extra amount of fattening feed is given for a month or six weeks and dropped as soon as the pullets seem in good condition and anxious to lay.

I have mentioned briefly these three theories in regard to preparing pullets for their winter work in the hope that my readers will each one work out his own system of pullet feeding, and having found what worked best, hold onto it. We are all learners together and the last word is yet to be spoken.

POULTRYMAN'S CALENDAR—JULY, CLEAN-UP MONTH

July is not always housecleaning month. Many years this work must be done with the first hot days of June. This season is late, and after the cool, foggy weather of May and June the hot July days will see an army of mites breeding in every neglected henhouse. Now is the time to clean out dust and cobwebs, as well as every bit of manure, to freshen up nest and scratching litter, to hose the walls, using boiling water on ends of roosts and other places that show the dull gray of mite infestation, and then to disinfect with carbolineum or with kerosene and crude carbolic acid or a cresol preparation. Disinfect twice, a week apart, and then a third time for luck, and there will be no more mites unless they have hidden in cracks out of reach of the disinfectant. Spade the yards that have not been already purified with a green crop, and sow barley in them. The hens will dig up most of it, but some may sprout if it is watered. In any case the hens get the exercise and the barley. If the birds can be moved to another yard for the summer or allowed to run in the orchard it will be good for them and for the houses.

Clean up the flock as well as the houses. Get rid of birds that are plainly unprofitable and reduce the flock to its lowest terms, for the sake of both health and sanitation. The fewer birds there are in a house the easier it is to keep it clean and them healthy.

Poultry Queries

Conducted by Jean A. Koethen

Bald Heads

Can anyone tell me what to do for hens that lose their head feathers? I have a few that get perfectly bald every spring and put on feathers again when they molt.—Subscriber, Los Angeles.

If a male is running with the hens I should be inclined to blame him for the loss of head feathers. An active male often loosens the feathers in the heads of his harem. There is a mite which sometimes eats off the feathers on various parts of the body of fowls, but they would not grow again after the molt if such a mite were there. If you find any indications of its presence, such as rough ends of feathers or debris at their base, you might anoint with a mixture of lard and sulphur, half and half.

Poultry for Profit

Will you please advise me where I can purchase and the price of your valuable book, "Poultry for Profit." I have borrowed it from a friend and would like to have one of my own as I am a beginner and your book has lots of good advice and ideas.—Subscriber, Santa Rosa.

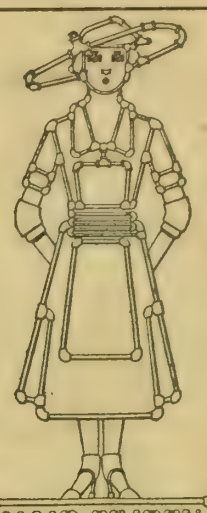
Thanks for the kind words. "Poultry for Profit" may be had from the Cultivator, 115 North Broadway, Los Angeles, and costs one dollar. It was written for beginners and aims to give necessary information simply and accurately.

Coccidiosis

Please tell me what causes the disease called coccidiosis. Does it only appear at about five or six weeks in young chicks? I had a flock of 1,000 five weeks old chicks and they were absolutely fine and in one day it looked as though the whole flock would die. Lost 100 in four days. The directions for using Lactein are to discontinue mash altogether. Does this mean that mash is not very safe food? I fed mash (P. C. A.) from 8 a. m. to 12 daily. Would it be safer and as well to feed half of mash and same of bran until, say eight weeks? I never had this experience before as my chicks were good after about the first ten days. What can be done to prevent this disease? Thanking you for much useful and helpful information.—Subscriber, Inglewood.

Coccidiosis is seldom seen except in large flocks and most frequently those kept on the same soil for several years. A liberal use of buttermilk or clabbered sour milk is the best cure. If milk is not available a teaspoon hydrochloric acid to quart of drinking water sometimes gives good results. In order to make the chicks drink as much sour milk as is necessary the mash must be limited. Probably this is what is meant by the directions for using Lactein. "Feed a small amount of grain night and morning," is Dr. Beach's advice. "Feed mash during the middle of the day, never leaving it before the chicks longer than two hours. Feed greens as usual. Keep buttermilk in fountains constantly before the chicks. The restricted grain ration will keep the chicks hungry and they will consume large quantities of buttermilk. If too much grain and mash are fed and the chicks drink large quantities of buttermilk sour crop is very liable to result. There is no danger of this occurring, however, if the amount of grain fed is small." The chicks should be moved to new ground if possible. If not, the ground of the yards should be spaded, and the houses thoroughly cleaned and disinfected. Fresh scratching litter should be spread on the floors daily and swept out and burned every day. Feeding troughs and water fountains are best disinfected with boiling water. After all, prevention is a good deal simpler than curing, and prevention would seem to demand: Clean soil and clean houses and brooders. It is a singular thing that coccidiosis never appears before the chicks are two weeks old, when things begin to get a little dirty; as much room for each chick after two weeks as before; suitable food. Mash is not considered an unsafe food, though it is not given the first week. Beef scrap should not be used the first ten days. It is a good plan to begin with a mixture of bran and rolled oats, and then to gradually add corn meal, beef scrap and other ingredients, but as far as I can learn, the poultrymen who use a commercial mash after the first week do quite as well as those who mix their own. The little chick requires hard grain, mash, greens and grit for grinding them. Just exactly what mixture shall be used is not as important as cleanliness, a chance to exercise, untroubled sleep, in short, the favorable environment which keeps digestion normal.

The cooperative cannery at Modesto opened for the season's run, June 23.



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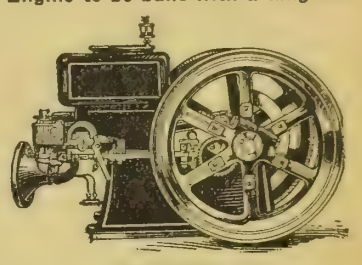

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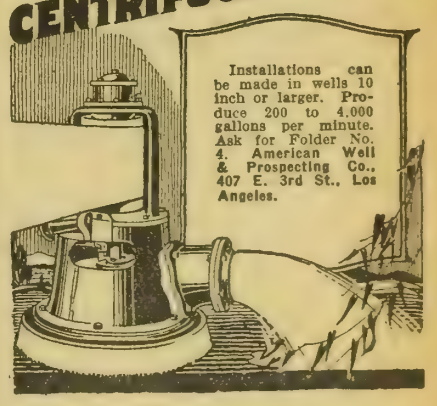

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PETALUMA, CAL.

Los Angeles Markets

Los Angeles, June 29, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price 40 cents.

June	22	23	24	25	27	28
'21 ...	38	38	38	..	38	40

CHEESE

Brokers' prices:
California flats, 19@21.

EGGS

Fresh extras (case included): Produce Exchange closing price 29 per dozen. Case count Produce Exchange closing price 27. Pullets, closing price 26 per doz.

June	22	23	24	25	27	28
'21 ...	27	27	27	..	27	29

POULTRY

Price to producers: Hens, 19@25; colored, 33; broilers, 26@30; roasters, 40; old roosters, 12; fryers, 35; ducks, old, 23; ducklings, Pekin, 3½ up, 30; others, 30; geese, 25; turkeys, live, young tom, 50; dr., 55; old, live, 40; dr., 41; hens, live 40; dr., 44; squabs, 45@47.

Belgian hares, live, 12@16; old 8.

LIVESTOCK

Los Angeles, June 28. — Weighed and delivered off cars without food or water:

Hogs (hard grain fed), 125 to 175 lbs., 9.00; 175 to 225 lbs., 9.50.

Cattle (on foot, gross weight): Steers, good, 8.00@8.50; medium, 7.50@8.00. Cows, good, 6.00@6.50; medium, 5.50@6.00. Calves, 125 to 150 lbs., 9.50; 175 to 225 lbs., 9.00.

Sheep: Ewes, 5.00@5.50; lambs, 8.50@9.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock June 28, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies heavy, movement slow, market dull. New Stock: Wide range in prices, mostly 50@60, few best 65, poorer 40 per lug. No. 1, sacked per cwt. wide range in prices, mostly 1.40@1.50. Jobbing: No. 1 sacked per cwt. mostly 1.25.

Onions: Supplies moderate, market firm. Very little good stock on market. Coachella and Imperial Valleys: Standard crates Yellow Bermudas 1.10@1.25, few best 1.50, few fancy Wax 2.00@2.25. Jobbing: Bermudas 1.00, fair condition 85@90.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock June 28, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Asparagus: Market firm; supplies moderate. Local: 16@18 per lb.; Northern mostly 10@12; poorer 6@8; fy. 15.

Beans: Supplies heavy, market weaker. Kentucky Wonder mostly 3½; jobbing 2½@3½.

Beets: Doz., 30@40.

Cabbage: Field crate best mostly 2.25, few 2.50.; poorer 1.75@2.00.

Carrots: Doz., 30@40.

Celery: Supplies moderate, market steady, cr. mostly 6.00@6.50.

Corn: Supplies heavy, market steady, local mostly 1.40@1.50; few fy. 1.75.

Cucumbers: Supplies heavy, movement slow, market weaker. Local: Lugs most-

Lettuce: Local field crate mostly 1.00; few 1.25; poorer 75@90.

Peppers: Supplies moderate; market steady. Imperial Valley: Bells best, 18@20; few, 22@25; poorer 15. Chilis, best 20 per lb.; poorer 15@18.

Radishes: 15 doz.

Rhubarb: Local strawberry, best 90@1.10; poorer 65@75 bx.

Squash: Supplies moderate, market weaker. Summer squash: Local, 25@30 per lug.

Tomatoes: Supplies liberal, market firm. Imperial Valley: Crates 1.50@1.60 for best greens and pinks, poorer 1.25@1.40, fancy ripes 1.65@1.75. Local: Supplies moderate, market steady, crates best 2.00@2.10, lugs 2.50@2.75, fancy 3.00@3.25. Jobbing: Local crates 1.90@2.00, lugs 2.00@2.25, fancy 2.50@3.00.

FRESH FRUITS

Apples: New lb., 4@5.

Apricots: Supplies heavy, market weak, 2½@3 per lb., few fancy 4@4½; poorer 2. Jobbing: 2@3 per lb.

Cantaloupes: Supplies heavy. Demand and movement moderate, market firm on fancy stock, weak on ordinary stock. Ponys mostly 1.75@2.00, standards mostly 2.00@2.50. Jobbing: Standards 1.75@2.00, few fancy 2.25, poorer 1.50, ponys mostly 1.50@1.65, few 1.75, poorer 1.25@1.40.

Cherries: Supplies moderate, market steady. Whites, various varieties mostly 10@12, few 13@15, ordinary 8@9 per lb. Blacks, various varieties 10@12, few fancy 13@14; poorer 8@9; Bings fancy 18@22 per lb. according to quality.

Figs: Supplies light, market stronger. Flats 1.00@1.25.

Grapes: Supplies light, market steady. Per lb. 12@13.

Loganberries: Supplies moderate, market steady; 30 pint crates 2.50@3.00; few 3.25.

Peaches: Supplies increasing; movement slow, market firm. Wide range in quality and condition. Lugs, best 1.50@2.00, poorer 75@1.25; fy. Red Bird 2.00@2.50; various varieties, 5@6 lb.

Plums: Supplies heavy. Movement very slow, market weaker. Santa Rosas, best 6@7, various varieties mostly 5 lb.

Raspberries: Supplies moderate; mostly 2.50@3.00 per 30 pint crate; few fancy 3.25@3.50.

Strawberries: Supplies moderate, movement slow, market weak. Per crate, 30 pints best mostly 3.50@4.00; No. 2 stock, 2.75@3.00.

Watermelons: Supplies liberal, market steady, mostly 2@2½ per lb., poorer 1½@1¾. Jobbing: Klondikes, 40.00@45.00 per ton, other varieties 30.00@35.00.

CITRUS FRUITS

Grapefruit: Supplies liberal, market steady on good stock. Local: per box, market pack 2.00@2.50, special packed brands 3.00@3.25; ordinary 1.75.

Lemons: Supplies moderate, market steady, wide range in prices. Local: packed box 4.50@5.00; few fy. high as 7.00; loose 1.25@1.75 per box; few fy., 2.00@2.25; per lug mostly 50@75.

Oranges: Supplies liberal, market steady. Valencias, best brands, all sizes, 3.50@4.00, few 4.50; ordinary 3.00@3.25; packing house culls 50@75, few best 1.00@1.75 per box.

HONEY

As reported by the Bureau of Markets:

Supplies of White Sage, Light Amber and White Orange light, other varieties heavy. Light wire inquiry. Movement very slow, market dull, little change in prices. Carloads f. o. b. usual terms at loading points: White Orange, new crop 12@12½; old crop, no sales reported. Light Amber Alfalfa, old crop 5½@6, new 6@6½; White Sage best 12@12½; Light Amber Sage, no sales reported. Hawaiian White 6, Light Amber 5½.

Beeswax in less than carlots light 30@33, dark 26@28 per lb. Alfalfa crop is now estimated normal, orange 25 per cent and Sage at 30 per cent of normal.

GRAIN AND FEEDS

Grain Exch. price bid June 28:
Corn: Bulk No. 2, Yellow 1.57½.
Bran: Kansas, 25.00.
Milo: No. 2, bulk, 1.50.
Barley: Carloads, 1.12½.
Kafir: No. 2, bulk, 1.50.

HAY

Alfalfa Growers of California report prevailing prices f. o. b., Los Angeles:

No. 1 Dairy	19.00
Standard	16.00

Shipments of alfalfa hay to the Los Angeles market, to be sold after arrival there, continued to come in quite freely, in fact they formed the bulk of the week's receipts and further depressed prices. Practically all of these lots were shipped by growers not belonging to the association; these shipments consisted mostly of the coarser grades of hay and as they broke the market for these about $5 a ton in two weeks, it needs no further argument to show how very expensive to the growers, aside of selling commission, is unorganized marketing. We want to emphasize again that it is the unorganized growers, principally those in one section of the state, and not the dealers and speculators, who are primarily to blame for this temporary break which has brought prices down to where they net the growers less than half the cost of production. Present total receipts are really not heavier, in fact they are still rather lighter than usual at this time of the year, which is the stocking up period for dealers and users.

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats	18.00@26.00
Barley	16.00@24.00
Alfalfa, No. 1 Dairy	18.00
Standard	16.00
Straw	10.00@13.00

San Francisco Markets

San Francisco, June 28, 1921.

Quotations made daily by San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

BUTTER

Dairy Exchange quotations June 29:

Extras	38

Dairy Exchange prices extras this week and year ago:

June	21	22	23	24	27	28
'21 ...	37	37½	36½	36½	38	39½
'20 ...	59½	60	60	59	..	..

Rcts. wk. ending June 27, 3,531 centals.

CHEESE

Dairy Exchange quotations:

Jack, full cream, street prices	14½@16
Oregon Trips	20
Cal. Y. A.	22
Cal. Flats	19½

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases, June 29:

Extras	30½
Extra Firsts	30
Dirties No. 1	28½
Extra Pullets	26½
Undersized	22½

June	21	22	23	24	27	28
'21 ...	28	27½	27½	27½	28½	30½
'20 ...	46½	46	46½	48	..	..

Rcts. wk. ending June 27, 374,070 dozen.

POULTRY

Wholesale prices are:

Young chickens, Leghorns, 1 to 1¼ lbs., 25@27; 1½ to 1¾ lbs., 28; 2 lbs. up, 30@32; heavy breeds, 1½ to 1¾ lbs., 30@32; 2 lbs. and up 55; old roosters, Leghorns, 13; do, heavy breeds, 18. Hens, Leghorns, large, 23; do, small to medium, 17@20; heavy breeds, 30@32.

Ducks: Young, 35 per lb., old 25.

Geese: 25 per lb.

Turkeys: Live, 35 per lb., do, dressed, 45@50 per lb.

Squabs: Fy. 45@48 lb., common, 3.50 per doz.

Belgian Hares: 13@14 per lb., do, dr., 18@20.

Pigeons: Old 3.00 per doz.

Chicago, June 27: Poultry, alive, higher; fowls, 27; broilers, 38@45.

New York June 27: Poultry, alive, firm; broilers, 45@55; fowls, 32; roosters, 16; turkeys, 25. Dressed, firm; Western chickens, boxes, 23@45; fowls, 15@34; old roosters, 15@20; turkeys, 20@55.

LIVESTOCK

Western Meat Company prices are:

Cattle: Steers, No. 1, 6½@7; do, second quality, 6@6½.

Cows and Heifers: No. 1, 5@5½; do, second quality, 4½@5.

Calves: Light weight, 6½@7; medium, 5½@6; heavy, 4½@5½.

Sheep: Wethers, 3½@4; ewes, 2½@3; Lambs: Milk, 6@6½.

Hogs: Hard, fat, grain-fed, weighing 125 to 200 lbs., 10; do, 200 to 250 lbs., 9; do, 250 to 350 lbs., 8; light sows, 8; heavy sows, 7.

California Farm Bureau Market Association reports sales:

No. Hogs	Ave. Wt.	Dock	Price
Tulare, June 21			
85	162	40	$10.30
79	193	...	10.00
9	108	...	9.60
24	244	...	8.55
7	413	260	6.05
1	...	...	11.00
Three cars, 23 consignors, $2,190.27.			
Visalia, June 22			
91	180	50	10.20
12	79	...	9.70
56	234	...	9.30
5	340	...	8.30
10	415	130	5.75
Three cars, 10 consignors, $3,372.79.			
Hanford, June 23			
99	154	...	10.20
10	112	...	10.20
81	190	...	9.40
9	252	10	8.50
4	350	50	5.75
Two cars, 26 consignors, $3,410.71.			
McFarland, June 24			
31	175	...	10.15
48	132	...	9.65
18	215	20	9.65
100	165	...	9.10
4	145	20	9.00
3	346	20	7.00
4	287	20	8.15

Two cars, 19 consignors, $3,289.72.

Total for the week 10 cars, 78 consignors, $12,269.49.

These prices are net to the farmer, while the prices as quoted in the papers, or other markets are f. o. b. the packers' yards.

POTATOES AND ONIONS

Wholesale prices:

Potatoes: Street prices: River, nominal; do, Oregon Burbanks, 2.00@2.25; Nancy Hall, 5.00@6.00 per 100 pounds; Idaho Gems, 2.30@2.60.

New: Garnets, 1.75@2.00 per 100 lbs.

do, White, 1.50@1.75.

Onions: Australian brown, 35@50 per bag; new red, 75@1.00 bag; green, 1.50@1.75.

Garlic: New, 6@8 lb.

VEGETABLES

Wholesale selling price:

Artichokes: Crate, 3.00@12.00.

Asparagus: Culls, 2½@3 per lb.; field run, 4@5; fancy graded, 7@10; green, 3@5.

Beets: 1.75@2.00 per sack.

Beans: String, 3@12.

Celery: New, 8.00@9.00 cr.

Corn: Alameda, 7.00@7.50 per crate of about 9 dozen ears; 5.00@6.00 per sack; Vacaville, 2.00@2.50 per sack.

Cucumbers: 50@90; lug, 2.15.

Eggplant: Lb., 10@12½.

Okra: 8@12½ lb.

Peas: 3@4 lb.

Peppers: Bells, 10@30; Chili, 15@20.

Spinach: Lb., 2@4.

Tomatoes: Imperial, green, 1.00@1.75; ripe, 1.75@2.00; Merced, 1.60; small lug, 2.50. The first large consignment of Stone tomatoes from Merced arrived yesterday, according to advices received by local dealers, who anticipate getting in the neighborhood of $2 for the first shipment. In addition to the large shipments from Merced, the crop movement of "Stones" from Los Angeles will begin the latter part of the week, and dealers are of the opinion that lower prices for tomatoes will prevail this year than did last. They cite for example the fact that the first shipment of tomatoes from Merced last year netted the grower $3 a lug, f. o. b. Merced, in contrast to $1.50 this year.

FRESH FRUITS

Apples: New crop white Astrakhans, 50@75 per small lug; do, reds, 50@75 per lug box; fancy Gravenstein, 75@1.50.

Apricots: 1.00@1.25 per 4-basket crate; 60@1.00 per lug box.

Avocados: California, doz., 3.00@6.00.

Bananas: Lb., 8½@10.

Blackberries: 40@45.

Cantaloupes: Standard, 1.50@2.00; ponies, 1.00@1.50; flats, 50@75; Honey Dew, 1.50@2.00 per crate; flats, 75@1.00; Casabas, 2.50@3.00.

Cherries: Tartarian, bulk, 5@7 per lb., 1.00@1.25 per drawer; Bings, 17½@20 lb.; Santa Cruz, 11@12; Royal Anne, 7@10 per lb., 75@1.25 per drawer.

Currants: 85@1.00 per drawer; 8.00@9.00 per chest.

Figs: Black, 40@65.

Grapes: 3.00@4.00 small lug.

Gooseberries: 7@8 lb.; English, 15 lb.

Loganberries: Red, chest, 7.00; 35 per drawer.

Loquats: 6@7.

Peaches: Cr., 1.00@1.75; lug, 2.00@2.25.

Plums: 1.50@2.00; fy, 2.25.

Raspberries: 75@90 per drawer.

Strawberries: Peninsula and Watsonville, 50@60, some higher; Salinas, 1.10@1.35 per crate; Watsonville, 1.00@1.25 per crate, according to quality.

CITRUS

Navel oranges, 4.00@5.25; Valencias, 3.00@4.00. Lemons, 5.00@7.00 per box; lemonettes, 3.00@4.25; grapefruit, 2.50@4.00.

BEANS

Below California Bean Growers Association shippers prices choice recleaned:

Large Whites	3.75
Small Whites	3.65
Pinks	6.40
Mexican Reds	8.00
Red Kidney	9.75
Henderson Bush	4.50
Cranberries	6.60
Bayos	10.50
Blackeyes	8.00

HAY AND FEED

Alfalfa Growers of California state that prevailing prices f. o. b. S. F. are:

No. 1 Dairy	16.50
Standard	14.50

Under date of June 24, A. W. Scott Co. says:

Receipts, 1,496 tons as compared with 1,187 tons of last week. Old hay is rapidly being cleaned up and has practically ceased to be a factor in the market figures, and very shortly will be selling only on a par with the new crop.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers charges of switching, cartage, commission and handling expenses must be added according to conditions).

Wheat Hay, fancy	15.00@18.00
Wheat Hay, fair grade	13.00@15.00
Tame Oat Hay	12.00@15.00
Wild Oat Hay, new crop	10.00@12.00
Barley Hay	10.00@12.00
Alfalfa Hay, new 2nd cutting	12.00@14.00
Alfalfa Hay, new first cutting	9.00@11.00
Stock Hay	8.00@10.00
Barley, Ground	29.00@32.00
Barley, Rolled	26.00@28.00
Oats, Rolled Feed	34.00@36.00
Bran, Red	33.00@36.00
Bran, White	37.00@39.00
Millrun	36.00@40.00
Middlings	46.00@48.00
Linseed Meal	35.00@37.00
Coco Meal	23.00@25.00
Alfalfa Meal, old crop	23.00@25.00
Alfalfa Meal, new first cutting	22.00@23.00
Cottonseed Meal	35.00@40.00
Sugar Beet Pulp	32.00
Molasses, Tanks	21.00
Molasses, Bbl.	25.00
Milo	44.00@46.00
Corn Meal	45.00@47.00

GRAIN

Wheat: Milling, 2.10@2.20; feed, 2.10@2.20.

Barley: Feed, 1.10@1.25; shipping, 1.20@1.30.

Oats: Red Feed, 1.20@1.30.

Corn: California yellow, 1.55@1.60; white Egyptian, 2.40@2.60 per cental; California red milo, 2.00@2.10; Eastern red milo, 1.95@2.00; Eastern kafir, 1.75@1.80.

Citrus Markets

Los Angeles, June 29, 1921.

Shipments of oranges have been running rather lighter during the past week. This because of the effort to steady up the market a bit which has been running somewhat easier than during the preceding two or three weeks.

Lemons are holding up to very satisfactory prices. The hot streak of the Middle West has shifted to the Atlantic but demand continues strong with limited imports. There are now on hand or available within 30 days 60,000 boxes of foreigns.

Shipments

Shipments of citrus fruits to date since November 1, 1920, Southern California: Oranges, 29,079 cars; lemons, 7,447; total, 36,526. To same date last season: Oranges, 23,067; lemons, 5,885; total, 28,952. From Central California to date this season: Oranges, 6,617; lemons, 198; total, 6,815. To same date last season: Oranges 5,370; lemons, 289; total, 5,659. From Northern California to date this season: Oranges, 305; lemons, 5; total, 310. To same date last season: Oranges, 261; lemons, 22; total 283.

AT THE AUCTIONS

June 22

New York: 37 or., 1 mixed, 3 lem. Nav. 4.60-5.30, Val. 4.25-6.75, Mikes. halves 2.55-2.85, lem. 6.35-7.75.

Boston: 11 or., 4 lem. Val. 4.30-7.30, Nav. 5.05-5.60, grapefruit 3.50-5.00, Jaffas 4.50-5.05, lem. 6.50-7.30.

Pittsburg: 6 or., 5 lem. Val. 4.15-5.75, Seeds. 3.00-3.85, Lem. 3.50-6.80.

St. Louis: 5 or., 3 lem. Val. 3.90-5.05, Sweets 4.05, lem. 4.30-8.95.

Cincinnati: 4 or., 5 lem. Val. 4.75-6.00, lem. 7.25-10.00.

Philadelphia: 9 or., 4 lem. Val. 4.00-6.00, Mikes. 4.25-4.30, lem. 5.10-6.60.

Cleveland: 11 or., 5 lem. Val. 3.85-6.35, lem. 6.20-7.45.

June 23

New York: 36 or., 2 mixed, 5 lem. Val. 4.15-6.00, Nav. 4.70-5.40, Seeds. 4.15-4.70, lem. 7.70-10.14.

Boston: 9 or., 3 lem. Val. 4.20-5.85, Nav. 5.10-5.55, grapefruit 4.10-4.50, lem. 7.50-9.20.

St. Louis: 4 or., 4 lem. Val. 4.00-5.05, lem. 5.95-6.90.

Philadelphia: 11 or., 7 lem. Val. 4.10-5.95, lem. 6.45-7.60.

Pittsburg: 5 or., 3 lem. Val. 4.00-5.80, lem. 6.20-8.50.

June 24

New York: 18 or., 1 mixed, 4 lem. Val. 4.20-6.50, Nav. 4.40-5.30, Mikes. 5.25-5.80, grapefruit 5.50, lem. 8.80-11.00.

Boston: 14 or., 3 lem. Val. 4.45-5.45, Nav. 4.80-5.55, Mikes. 5.05-5.40, grapefruit 3.70, lem. 8.30-9.80.

Philadelphia: 4 or., 3 lem. Val. 4.75-5.85, lem. 7.40-9.70.

Pittsburg: 6 or., 2 lem. Val. 4.05-5.75, lem. 2.90-7.35.

St. Louis: 4 or., 4 lem. Val. 3.50-4.75, lem. 3.25-7.40.

Cleveland: 10 or., 5 lem. Val. 3.95-5.60, grapefruit 3.35, lem. 5.95-8.00.

Cincinnati: 5 or., 4 lem. Val. 3.25-5.60, lem. 7.60-9.25.

June 27

Pittsburg: 9 or., 4 lem. Val. 3.45-6.05, lem. 9.50-12.15.

New York: 50 or., 1 mixed, 1 grapefruit, 13 lem. Val. 4.75-6.50, Nav. 4.95-5.75, Seeds. 2.15-4.90, Mikes. 5.35-5.60, grapefruit 3.85, lem. 8.25-12.50.

Boston: 17 or., 4 lem. Val. 4.25-6.10, lem. 8.00-10.95.

Philadelphia: 17 or., 7 lem. Val. 4.70-5.95.

Cincinnati: 5 or., 5 lem. Val. 3.35-5.75, lem. 6.25-8.10.

St. Louis: 5 or., 6 lem. Val. 3.55-4.60, lem. 2.77-6.10.

Cleveland: 12 or., 4 lem. Val. 3.40-5.50, lem. 9.60-12.25.

June 28

Pittsburg: 7 or., 5 lem. Val. 3.90-5.10,

lem. 7.15-8.90.
Boston: 18 or., 4 lem. Val. 4.00-5.60, Mikes. halves 2.30-2.45, lem. 8.60-11.10.
Philadelphia: 11 or., 7 lem. Val. 4.35-6.25, lem. 9.55-12.70.
New York: 33 or., 5 mixed, 2 lem. Val. 3.90-6.90, Nav. 4.95-5.40, Mikes. halves, 2.30-2.80, Sweets 4.10-4.80, Seeds. 4.10, lem. 9.70-12.70.
St. Louis: 4 or., 3 lem. Val. 3.90-4.95, lem. 4.45-8.10.

IN THE BILLION CLASS

(Continued from Cover.)

In five states the average value reported per farm was above $25,000. These states were Iowa, $35,616; South Dakota, $33,122; Illinois, $31,270; Nebraska, $29,927; and California, $26,-122.

Average Value Per Acre

The average value of land and buildings per acre in farms in the United States in 1920 was $70.94, as compared with $39.60 in 1910.

An average value of more than $100 per acre was reported for eight states, as follows: Illinois, $231.93; Iowa, $227.09; Indiana, $125.98; Ohio, $113.18; New Jersey, $109.67; Minnesota, $109.23; California, $104.67; and Connecticut, $100.20.

CROP TONNAGE ON COUNTRY ROADS

Eleven principal crops afforded 86,-500,000 tons for hauling on country roads in the yearly average of 1915 to 1919, or 27 tons per 100 acres harvested. Among the results of computations made by the bureau of crop estimates, United States department of agriculture, Illinois is far in the lead of states in providing crop haulage, and its fraction of the United States total is one-tenth, or 8,855,000 tons. Iowa has 6,590,000 tons and Kansas somewhat more than one-half of the Illinois tonnage hauled, with 4,862,000 tons. Following in order are Nebraska, Indiana, Ohio and Texas, with 4,050,000 tons in the last named state. The difference between high and low costs of hauling due to poor or good condition of roads reaches a large figure in the hauling of this great tonnage or a large fraction thereof.

Where is California? Counting up its money, perhaps, for it does not specialize on tonnage so much as quality, or rather, commercial worth. California crops produce the gold.

SHORT STRAW—MUCH GRAIN

Answering Farm Adviser Curtis of Tehama as to the behavior of Mariout barley, Geo. W. Hendry, professor of agronomy, writes:

"I would say that Mariout has a shorter straw than common barley, Tennessee Winter barley or Four Thousand barley and that in dry seasons on dry soils or when spring planted it is frequently very short in its growth. The majority of all the barley in this (Davis) region, however, is now Mariout and very little difficulty is experienced in harvesting it. We have found that growing conditions which result in Mariout straw too short to harvest with the combined will generally result in a complete failure of common barley. Many crops of Mariout in this locality which averaged from six to ten sacks per acre last season stood only about six to eight inches in height at maturity, but by dropping the cutting bar of the harvester until it touched the ground and by attaching strips of rubber automobile tire casing to the reel in such a manner they acted as flaps it was possible to recover without loss barley which stod only six inches in height in the field. This of course was on fairly level ground which was not cloddy.

"Tennessee Winter barley, on the other hand, shows marked superiority to the other varieties on any of the heavy, poorly drained soils under circumstances which would result in drowning out due to the presence of standing water. To get the best results with Tennessee Winter, planting should be done early in the season and not later than January 1. It is at a great disadvantage with other varieties in spring plantings and especially in dry seasons and on dry soils. We do not recommend it except for early fall planting and on heavy, poorly drained soils.

"I am very gratified to learn of the good report upon Four Thousand barley and trust that it will meet with continued success in your locality. It is nothing more than a pure strain of common or coast barley and has no special adaptation such as the wet resistance of Tennessee Winter or the drouth resistance of Mariout. It has been our experience, however, that it is about ten per cent more productive than common barley under all conditions, but is generally exceeded in yield by Mariout on dry soils and by Tennessee Winter on wet soils."

COMING EVENTS

Frontier Days Celebration, Prescott, Arizona, July 2-5.
North of Bay Counties Fair, Santa Rosa, August 24-28.
Yuba County Agricultural Fair, Browns Valley, Aug. 29-31.
California State Fair, Sacramento, Sept. 3-11.
Tulare County Livestock and Agricultural Show, Tulare, Sept. 13-17.
Humboldt County Fair, Ferndale, Sept. 13-17.
San Fernando Valley Fair and Market, Owensmouth, Sept. 13-18.
Glenn County Fair, Orland, Sept. 19-24.
Kings County Fair, Hanford, Sept. 19-24.
San Diego County Fair, San Diego, Sept. 21-24.
Fresno District Fair, Fresno, Sept. 26-Oct. 1.
Southern California Fair, Riverside, Oct. 11-16.
California Association of Nurserymen Annual Convention, Exposition Park, Los Angeles, Oct. 20-22.
Date Festival, Coachella Valley, Oct. 21-23.
California National Livestock Show, San Francisco, Oct. 22-30.
California Horse Breeders Association, Los Angeles, Oct. 30-Nov. 5.
Pacific International Livestock Exposition, Portland, Oregon, Nov. 5-12.
Stanislaus County Poultrymen's Association Show, Winter Garden, Dec. 4-7.

SALT PER CAPITA

About 130 pounds of salt, possibly the weight of Lot's wife, was produced in the United States in 1920 for each person in the country. Of course everyone or anyone of the 106,000,000 inhabitants did not use or eat that much salt, but salt is employed for many other than culinary uses. It is used in packing meat, curing fish, dairying, refrigerating, preserving products from detérioration, making a glaze on pottery, enameling, curing hides, making pickles, and salting live stock, and it is used in some chemical industries, as in preparing soda ash and caustic soda.

According to figures just compiled by the United States Geological Survey, the quantity of salt produced in the United States in 1920 was 6,965,188 short tons, or only slightly less than that produced in the peak year, 1917. The value of the product was $30,539,-168, or nearly $3,500,000 more than in any other year. The average price per ton of all salt sold by the producers in any form rose from $3.93 to $4.38. The average price and total value has increased more than 100 per cent since 1916.

The imports of salt in 1920 amounted to 137,654 short tons and were practically balanced by the exports, which amounted to 139,272 short tons.

FIRE PREVENTION TO BE TAUGHT

Paul G. Redington, district forester of the United States forest service, says that through the signing of Assembly Bill No. 769 and observing of Forest Protection and Fire Prevention Week the state of California has aligned itself with a nation wide drive against the ravages of fire.

Assembly Bill No. 769 provides that each teacher in any public school of the state of California shall devote a reasonable time in each month during which such school is in session to the instruction of the pupils thereof in a course of study and fire prevention comprising ways and means of preventing loss and damage to lives and property through preventable fires.

Last year in California fires destroyed timber, grass and grain worth $983,-562 and burned over approximately 415,275 acres. This bill will go far to provide a remedy for the needless destruction of timber and other resources. Another and very simple remedy may be summed up in the phrase "Help Protect the Forests—Be Careful With Fire." This done, 75 per cent of our forestry problems will be solved.

SALMON PACK CURTAILED

Because of shelves overstocked with high priced 1920 salmon, the canners of British Columbia look for about a 20 per cent pack; some canneries are prepared to put up about 25 per cent of their normal pack, while others are figuring on only 15 per cent. These will all be sockeyes. No "chums" will be canned in British Columbia during 1921, as there are close to three-quarters of a million cases still in stock without a market. In previous years the lower grades of fish shared the overhead expenses of the canneries; this year, there being no lower grades, the sockeyes will carry the entire cost of operation.

HOG AUCTIONS

Fat hog auctions of the California Farm Bureau Marketing Association: Wasco, July 2; Modesto, 5; Tegner, 6; Chowchilla, 7; Fresno, 8; Tulare, 12; Visalia, 13; Hanford, 14; Corcoran, 15; Bakersfield, 16; Turlock, 19; Merced, 20; Madera, 21; Fresno, 22; Tulare, 26; Visalia, 27; Hanford, 28; McFarland, 29.

WEATHER REPORT

San Francisco, Cal., June 25, 1921.

Stations	Rainfall Wk.	Rainfall Season	Norm.	Temp. Max.	Temp. Min.
Eureka	.00	48.29	46.00	68	52
Red Bluff	.00	27.92	25.00	106	62
Sacramento	.00	16.79	20.09	104	54
San Francisco	.00	23.16	22.27	90	52
San Jose	.00	15.01	16.79	96	52
Fresno	.01	8.19	9.68	108	58
San Luis Obispo	T	19.27	20.51	98	50
Los Angeles	.01	13.65	15.64	84	58
San Diego	.00	7.08	10.01	78	57

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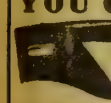
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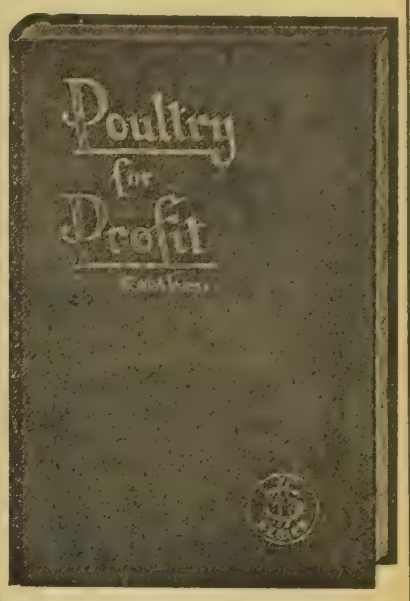
Poultry Can Be Made Profitable



Making use of information gathered from experienced poultry writers who have been guided by their practical experiences will always result in profit from poultry.

¶ ¶ ¶

"Poultry for Profit"
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Feeding
Ducks and Geese
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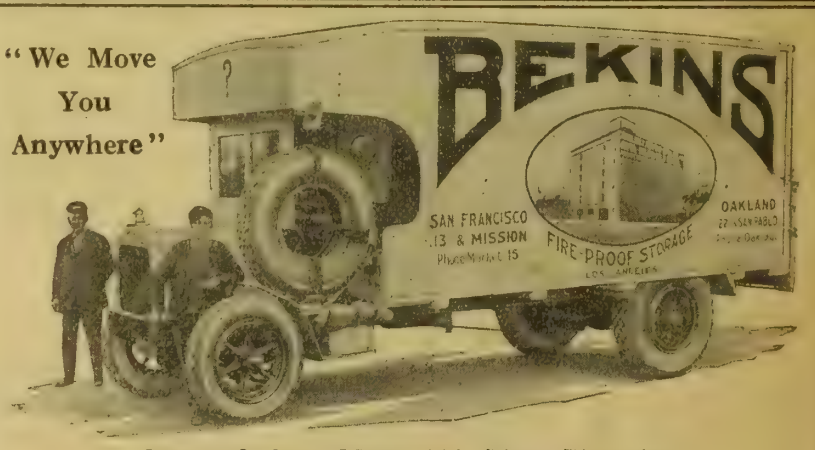

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LVII — July 9, 1921 — No. 2

Where Does Our Camphor Come From?

And, we may add, "Where does it (camphor) go to?" It comes mostly from Formosa and may come from almost any humid section where the orange tree will exist. In fact, it may come from a semi-arid section, but probably not with profit. The above specimen stands in Orange County in the city of Orange and is proof of the magnificent growth the tree will make under favorable conditions in California. As a shade tree it is grown largely in California and still more extensively in Florida.

Gum camphor is made by distillation of the wood and even of the leaves of this tree. Japan has now stopped exporting the crude camphor and we are compelled to buy the refined. In 1919 this country imported 2,622,792 pounds of crude and about half that amount of refined.

The gum is used in medicine as a diaphoretic and both stimulant and sedative, but more largely in the manufacture of celluloid.

Established 1877 Forty-fourth Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877

Combined with California Cultivator 1914 Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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Saturday, July 9, 1921

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

If any of the 40,000 Cultivator subscribers fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

EDITORIALETTES

It is probable that California will never produce camphor in a large commercial way, yet the tree does sufficiently well in this state to make the photograph which appears on this cover and the facts given with it of considerable interest. The tree is of such slow growth under ordinary rainfall and climatic conditions of this state that unless there is something like the ecualyptus boom of a few years ago or the present effort to make the carob a commercial factor, there will be no general commercial planting. Where the camphor grows naturally there is usually a rainfall of from 100 inches up and humid climatic conditions. However, America needs considerable camphor gum and California can produce it if it is made an object.

* * *

We are assured that the reorganization and bringing together of crop reporting and market bureau forces will give far greater efficiency and be of benefit to producers. One of the latest announcements has to do with a nation wide wireless market news service. We believe it is not yet in operation in California but is from the eastern seaboard to a great number of Middle West market centers. The idea is to make this of value to most remote farms through crop reporting by county farm bureaus. "It is expected that market news will be in the hands of farmers shortly after the close of the markets every business day" and "will help materially to regulate the movement of farm products to meet demand, a condition precedent to stabilization and equalization of prices.

* * *

The International Institute of Agriculture at Rome writes as to supplies of wheat and "arrives at the conclusion that the world stocks are sufficient for all requirements until the new harvest and will leave a margin of 1.4 million metric tons." The world will not go hungry this year and probably not for another twelve month for the institute adds: "It is fortunate that the prospects of a new crop are fairly favorable and indicate a satisfactory yield."

* * *

It is estimated that the United States has one-eighth as much oil in the ground as all the rest of the world and is using four times as much oil as all the rest of the world. An "oil census" is about to be taken by the U. S. geological survey. The work will require nine months' time. Fortunately for Californians the Pacific Coast oil situation is the best of any part of the United States. The object of the census to be taken is to give warning to oil users and secure greater economy in operations.

* * *

Californians who anticipate building campfires must bear in mind that before they are permitted to do so in any one of the ten national forests of California they must secure a permit. There is no charge for the permits and they may be secured from forest rangers or officials in the field or often from merchants and fire agents near the reserves. But even with the permit there is no remitting of the provision that all fires must be extinguished before camper leaves them.

NOT SUFFERING

Eugene Grubb, just back from an observation trip over the East, in referring to financial conditions here and there, says that as one goes east from the Pacific Coast financial conditions become gradually more depressing. Some California producers are unable to see the bright side of things, but the general conditions of the state are vastly better than those of the East. Nor is it entirely due to tourists "doing" the resorts, rather to the putting out of a class of products which the world must have. We won't say the only fly, but we will say the biggest fly, in our ointment is the transporting of these products to market. Fortunately, one great big factor in our transportation is the biggest ocean in the world and the Panama Canal.

FERTILIZERS PAY

The farms of the United States spent during 1919 nearly a third of a billion dollars for fertilizers. This varies from about $9,000, which is spent by the farmers of Nevada, to $52,546,795 which is spent by South Carolina. North Carolina is second with almost as large an expenditure, nearly $49,000,000, while their neighbor, Georgia, is third with over $46,000,000. In fact, the farmers of these three states spend nearly one-half of the fertilizer money of the entire country. The three Pacific states spend which is spent by the farmers of California.

Explanation by the census bureau of the large outlay for fertilizer in the Southern States is found in the character of crops grown, cotton and tobacco being crops which require a great amount of fertilizer.

FARMERS BY RACE

Of California's 117,670 farmers 290 are negroes, 578 Indians, 466 Chinese and 5,152 Japanese; 76,995 are native white farmers, 34,189 are foreign born white farmers. Or, expressed in percentages: Native white, 65.4; foreign born whites, 29.16; colored races, including red, black and brown, 5.5. The increase in the colored races since 1910 was from 3.5 to 5.5 per cent, largely in Japanese. In number of Japanese farmers California is vastly ahead of any other state in the Union, or, rather, all other states in the Union. The states showing the next largest number of Japanese farmers are: Washington, 691; Colorado, 321; Oregon, 224.

DAIRYMEN BEAT WORLD

California dairymen have again shown their ability to produce a superior product. Dean Van Norman, director of the world's dairy congress, writes that at the recent annual meeting of the American Association of Medical Milk Commissioners, held in Boston, California dairymen won first and third on certified milk which was shipped from California to Boston in competition with scores of exhibits from other states.

The Cold Springs Dairy of Pasadena took first, with a score of 99.6, while the Arden Farm Dairy of Los Angeles took third, with a score of 99.4. Dean Van Norman states that these scores would be remarkable if the contest had been held in California, but to ship across the continent and get such scores certainly reflects rare credit on the character of work being done on these certified milk farms.

Nor is this the first time, for California dairymen have repeatedly shipped fresh, unpasteurized milk thousands of miles across the desert and proved winners. It costs money to produce clean 100 per cent pure milk. California has it—and spends it.

CORDIALLY RECEIVED

The Farmers Weekly, published in South Africa, reports the sending of a commission of wool producers to German manufacturers to dispose of some of the South African surplus. The African wool growers received most cordial reception in Germany but went home without any contract for: "We have come to the conclusion that the government is, no doubt with the cooperation of the banks, keeping the industrial development of the country back as far as possible just now so as not to give the appearance to the outside world that Germany can or could pay a large indemnity, and we therefore think it is quite possible that the mark is artificially kept at its present depreciated figure for obvious reasons. In other words, we think that directly the indemnity question is finally settled the country will be allowed to develop on natural lines, and we venture to think that it will quickly improve despite its present very great difficulties, always provided that nothing unforeseen arises, such as internal or external far reaching troubles. It is illustrative of the present policy of Germany, in our opinion, that they do not publish, as has always been and is the case with all other countries, the returns of their imports or their exports, and neither will they allow any inquirers to get any idea as to what these figures are."

ENJOY BUT DON'T DESTROY

The mountains from Monterey to the Mexican border are covered with "waxen tapers which increase in height as the white bells climb the slender shafts. Each cluster reaches its perfection and becomes a solid distaff of two—yes, even six—thousand of the waxen blossoms. These grand white soldiers with their hundred swords * * * surpass all known species in the height and beauty of flower and panicles." We said "covered," which is hardly correct, for these wonderful yuccas, or Spanish bayonets, appear at rare enough intervals to glisten purest white against the deep green of the hillsides.

The reason for referring to these flowers of wonderful beauty is not that we may quote the charming poetical expression of another, but to call attention to the more practical suggestion that we may preserve some of these California flowers. It is hardly probable that they will ever disappear for their habit of growth takes them to the most inaccessible of locations where even the most greedy of humans may not reach them, but, so far as they can, they go forth in automobiles, laden with hatchets and saws and carry by the thousands these beautiful flowers to destruction. We have seen great spikes tied to the sides of autos, and occasionally these are so tall that in passing under a low shade tree or other overhanging object the spikes have been broken at the tip and the 30 or 40 mile speed has enabled the wind to whip to pieces the mass of flowers. The spikes of wonderful bloom arrive in the city—where they do not belong—with little of beauty left.

There is as yet no "Save the Yucca" organization, but we may at least pass on the word and urge a bit of consideration for these flowers. Fortunately the California yucca is better located for preservation than the California poppy. The poppies prefer the plains, where automobilists go by the thousands and carry away literally loads of flowers and seed possibilities. Those gathering the flowers seem to feel that they may only possess them by clutching in their hands or entirely uprooting. These beautiful things are "going to waste" if the observer looks and leaves them for some one else to see.

They are apparently inspired by the same feeling as that of an Easterner who arrived in the fall as the Golden Glow was in its glory. She secured a cottage alongside of which was a great bed of them and asked permission to cut them for bouquets. While the flowers were directly alongside the cottage she was told: "Surely, gather all you wish." And she wished many, for she cut them by the armful. She cut without any idea of preserving the beauty which should have remained with the garden for many weeks. She threw her arms around all she could possibly reach and then with the shears left only mutilated stubs. Where one or two or at most a dozen of the blossom stalks would have made a glory in the room she massed them by hundreds in tubs and pails and revelled in them because for the first time in her life she had cut all she wanted to. Her idea of possession was in having in her "own hands."

In these days when our hills afford so much of beauty we may well conduct a campaign of education for our Easterners and—we must regrettfully add—some of our Californians, in this matter of preserving our own natural beauties.

California Cultivator

Vol. LVII, No. 2 | Los Angeles, July 9, 1921 | One Dollar Yearly

A New Cover Crop

MUCH interest is being displayed in the California trials of a new "annual white sweet clover" discovered in the greenhouses of the agricultural experiment station at Ames, Iowa, and later proven to be native to Alabama, perhaps to adjoining states. However, this new form seems to be a mutant or sport. It has been tried on the Pacific Coast at various points and the roots have lived through the past winter and made new tops. It is doubtless biennial, perhaps triennial. Farm Advisor Hodgson of Los Angeles County says he has placed it in about ten different localities and that it is growing vigorously at each station. The Iowa state college says of it:

A Giant Hubam Plant Five Months From Seeding

This plant has been a great success in Iowa and has adapted itself satisfactorily to California conditions.

"The new Hubam clover has surpassed all previous records in the many tests made with it during the past year. When the Iowa station first announced the discovery of this clover in 1916 it was with the statement that it had made the remarkable growth of 4½ feet in 3½ months from seeding, while medium red clover and common sweet clover grown in comparison and under exactly the same conditions measured 5 inches and 14 inches respectively. Many tests, from Maryland to Oregon, showed growths of from 6 to 8 feet in 1918, while the past season the clover grew 9 feet high in 3½ months, or just twice the growth first reported by the Iowa station. Growths of from 7 to 10 feet have been reported from nearly every state and from many foreign countries.

"A seeding of Hubam made in New York on June 1 of last year measured exactly 108 inches (9 feet) in 103 days (3 months and 16 days) from planting. This clover made a total growth of 10 feet and matured seed before the end of the season. Many carefully measured 10 foot growths were reported from widely different parts of the country.

"While we may not want a 10 foot clover for hay, and hogs might have some difficulty in getting the tender topmost leaves, the vigor of the growths reported gives some idea of the possibilities of the plant for green manure, pasture and honey production. Grown under crowded field conditions the clover makes a much finer growth and may furnish two cuttings of hay or an abundance of highly nutritious pasture for such animals as cattle, horses or sheep.

"But the remarkably rapid and vigorous growth made by this clover is only one of the many interesting demonstrations of the year. When seeded with small grain at Ames it produced six times the growth of medium red and mammoth clover and three times that of the biennial white sweet clover, following the removal of the small grain crop. When seeded broadcast on a weedy and poorly prepared seedbed the last of May it overcame the weeds, made a growth of 5½ to 7 feet and matured a seed crop.

"The drouth resistant qualities of the clover are reported from several states as remarkable. In one instance, without irrigation and with less than one inch of rainfall after the clover was seeded, it grew to a height of 7 feet and showed no ill effect of the drouth when all other vegetation perished in the worst drouth experienced since 1882.

"The growth when carefully measured has often averaged over 1½ inches per day, with a maximum under greenhouse conditions of 2½ inches in 15 hours.

"Its heavy seed setting character is indicated by seed spikes which have measured 20 inches in length. Planted in rows 3 feet apart the seed yields have averaged 5 to 8 bushels per acre, while with closely spaced growths the yield has run over 10 bushels per acre of clean, scarified seed.

"While Hubam clover has gained many friends the past year, the most uniformly enthusiastic group of men are the bee keepers. The most widely read and oldest bee journal in the United States carried extensive discussions of its merits, with many illustrations, in eight of the twelve issues of the year 1920."

Citrus Culture in Texas

By W. R. Wood

ALONG the Gulf coast of Texas from the Louisiana line south to the Rio Grande River is a strip of territory in which numerous attempts have been made to grow citrus fruits. Around Port Arthur, and south of Houston a few miles, there were at one time quite extensive plantings of Satsuma oranges, but one or two cold winters, together with a very bad infestation of citrus canker, practically wiped out the industry in these sections. Further south in Brooks County there was quite a planting of oranges, and I was told that at one time there was an annual production of 25 or 30 carloads of oranges from one locality, but the citrus canker also invaded this section, and when the writer was there two years ago there remained only a few acres of bearing orchards.

South of this section, in what is known as the Lower Rio Grande Valley, there has been considerable activity during the past ten years, particularly in the planting of pomelos. The Lower Rio Grande Valley is bounded on the east by the Gulf of Mexico, on the south and west by the Rio Grande River, and on the north by a strip of low sand dunes, and contains something over 600,000 acres of irrigable land. Several thousand acres of this valley is now being irrigated from the Rio Grande, and if the present movement is carried out, it is expected that by means of storage reserviors farther north sufficient water will be available to irrigate the entire valley. The soil ranges from a light sandy loam to a very heavy silt, some of it being in the nature of adobe, but it is all very rich and when properly irrigated produces wonderful crops of cotton, corn and vegetables. Citrus trees also make a remarkable growth and at three years of age they are fully as large as our average five year old trees here in California. This is due not only to the richness of the soil but to the long growing season. The winters are usually mild and the trees do not stop growing during the winter months. As an illustration, the writer saw nursery stock that had been budded in October, which with us would remain dormant until spring, in which the buds were two to two and one-half feet high and calipered three-eighths to one-half inch the first of February. This winter growth is what makes citrus culture hazardous, as the amount of cold necessary to damage a growing tree is much less than when the trees stop growing and harden up in the fall, and people not acquainted with this fact wonder why trees in Texas do not stand as much cold as they do in California. The cold snaps in this section come quite suddenly and are usually of short duration. Oftentimes there are just one or two nights during a winter that the temperature goes down to the danger point and the balance of the winter, both day and night, is as pleasant as our spring and summer weather here.

Of all the citrus stock planted in this valley, fully 90 per cent are pomelos, as they seem to do better than oranges or lemons and the fruit is decidedly superior to anything grown in California. The sizes are larger, with a very thin skin, and the flesh tender and very juicy, with an excellent flavor. They ripen early, about the same as in Florida, and will therefore never come in competition with California pomelos, especially if we hold our fruit until it is ripe and fit to eat. Oranges of the Florida type do very well and are very prolific, but I have been told that they do not carry well. This is possibly due to their being too ripe at the time they are shipped. The Washington Navel does not do well, the tree being somewhat shy in bearing and the fruit large and very coarse. The Valencia is somewhat better but does not reach the perfection that it attains here in California. There are very few lemons growing in the valley, but the few there are seem to produce a good quality of fruit and blossom and set fruit throughout the year.

It is rather difficult to estimate the acreage of citrus fruits in this valley as it is scattered over an area some 30 or 40 miles long, by 10 to 20 miles in width, the bulk of the planting being in small tracts of from one to ten acres, with an occasional planting of 40 to 100 acres. Very few of the older plantings remain, as little or no protection was given them, and they have gradually been killed out by frost. During the last four or five years, however, more attention has been given to the trees planted, and at the present time there are some very nice young groves that will produce considerable fruit this season.

The principal farm crops of this valley are cotton, corn, potatoes and winter vegetables, and up until the last two or three years citrus culture has been a side issue with most of the farmers, as a consequence of which very few of the plantings have received proper care and attention. In spite of this it is remarkable to note how well the trees have done, and had proper winter protection been given them there would be a large acreage of full bearing trees at the present time.

The past two winters have been very mild, with little or no frost, and the orchards look better now than at any time the writer has visited the valley.

On my last trip I had occasion to visit the Raymondville section, which is in the northern end of the valley and about 20 miles from the Gulf coast. Up to the present time this territory has never been under irrigation, although artesian wells are available at a depth of 1,200 feet, and, I understand, furnish a very good supply of water. There are a number of citrus orchards here that have not been irrigated excepting when first planted, and they look remarkably well. The moisture from the rains is conserved by constant cultivation, a practice that is not followed in the sections where irrigating water is available.

The average rainfall in the valley is 26 inches, most of which comes in the spring and summer, there being very little rain during the fall and early winter. The summer temperature ranges from 85 to 110 degrees, and the nights are usually warm although there is nearly always a rather stiff breeze which makes the heat less noticeable.

The country is being rapidly settled up by farmers from the Middle West and North who are anxious to get

(Continued on Page 47.)

Agricultural News Notes of the Pacific Coast

Northern California

Milk at 12 cents a quart is promised Alameda County.

State fair, Sacramento, September 3-11. The premium list has been issued.

Eldorado County farm bureau will hold its annual picnic July 23 at Eldorado.

The State Automobile Association has been sign posting roads in Butte County.

Arbuckle, Colusa County, will hold its almond festival September 28 to October 2.

The forest service has granted permits for eight municipal camps in this state.

Pleasanton, Alameda County, has begun working to secure the county fair for the fall of 1922.

It is expected that the state highway from Chico to Los Molinos will soon be thrown open to travel.

Dairyville, Tehama County, has organized a pig club. The first regular monthly meeting was held July 5.

The Pacific Rice Growers Association is before the railroad commission asking the same rate on rice that is given to grain.

Fifty per cent of the pear growers in the Auburn district of Placer County have signed up with the Pear Growers Association.

Donnieville, Sierra County, reports peculiar streakiness of frost damage in cherry orchards, some spots showing all fruit killed while nearby trees are loaded.

Committees of farmers and the Colusa County chamber of commerce have been formulating plans for handling the rise of the water table from rice irrigation.

A travel conference to study spray residue on pears in Sacramento County was recently conducted by Horticultural Commissioner Brosius. Fifteen state, county and federal officials attended.

Horticultural Commissioner Shoup of Shasta County estimates the peach crop at an average for the uplands, but in the lowlands, where there was some frost, at 50 or 60 per cent of normal.

It has been proposed to form drainage districts in rice growing sections of Butte County to meet complaints brought by non-rice growing property owners against drainage of waste water into canals of Sutter Basin.

President Sheehan of the Grape Growers Exchange reports an increase in price of grapes of from five to 20 dollars per ton. This increase is due primarily to the shortage caused by late frosts. Some of the prices are: Zinfandels and similar grapes, $70; Alicante Bouschet and high colored juice grapes, $90 per ton.

Farmers of Placer County met in Auburn last week and adopted the following wage schedule: Unskilled labor, 35 cents per hour; packing cherries, 20 cents straight box and single faced lug; packing cherries, 25 cents double faced lug; packing plums, 6 cents per crate; packing wrapped plums, 6 cents per box; packing lugs, 6 cents per box, graded; packing peaches, 2½ cents per box; packing pears, 6 cents per box; packing grapes, 5 cents per box, cleared.

Central California

A new $15,000 fig preserving plant is being built at Sultana.

Ripon district of San Joaquin County is raising big crop of melons.

Modesto milk distributors began delivering 12 cents a quart milk July 1.

Japanese of Fresno County will test the constitutionality of the alien tax law.

A Fresno grape grower reports sale of 20 carloads of Zinfandels at $82.50 per ton.

The Madera Fruit Growers Association expects soon to start shipping green grapes East.

The Monterey County farm bureau held a big picnic and barbecue at Alisal Park. June 23.

The new Los Banos creamery of the Associated Dairymen of San Francisco is practically completed.

Visalia canneries plan not to run on apricots. The fruit in that section will be shipped to Hanford.

Cantaloupe shippers and growers of the Turlock section will generally conform to standardization rules.

Wheat harvesting in the Oakdale section of Stanislaus County shows good yield; barley very spotted.

The first whale of the season, a humpback, was brought into Moss Landing, Monterey County, last week.

Five carloads of dried peaches left Porterville last week for Philadelphia by way of San Francisco and Panama Canal.

The new five cent raisin package put out by the California Associated Raisin Company has met very favorable reception.

The first shipment of cantaloupes in the Turlock section went out July 1. Carload shipments will not begin until after The Fourth.

The last shipments of Valencia oranges have left the Lindsay district. Apricots and plums are now being shipped to Chicago.

A carload of fresh figs was shipped East from Fresno, June 23. Half the carload was auctioned in Chicago, the other half in New York.

The San Joaquin Milk Producers Association is securing signatures to its credit-member agreement and will soon hold election of new board of directors.

The Tulare supervisors have decided to continue the work of squirrel control and to furnish Horticultural Commissioner Collins with additional inspectors.

According to D. F. Collins, horticultural commissioner of Tulare County, that county will have a light olive crop this year because of heavy rainfall during May which destroyed the blossoms.

Horticultural Commissioner Rutherford of Stanislaus County says that prospects for the cantaloupe crop this year are above the average, although the acreage planted is something less than last year.

Something over 30 sections in the Tulare Lake grain fields are reported as having a good stand of grain, about evenly divided between barley and wheat. One field alone consists of 12 square miles without a fence or break in the grain.

Southern California

Apricot growers report contracts made at from $30 to $70 per ton.

Ventura farmers are discussing breaking into the cabbage growing game.

Chaffee junior college is conducting a summer school of agriculture for teachers.

Julian, San Diego County, reports about a half crop of apples as a result of the freeze.

Great plans are being made for the San Fernando Valley fair to be held September 13-18.

A conference of citrus fruit shippers is to be held this week to discuss continental freight rates.

Yorba Linda, Orange County, is becoming one of the greatest avocado producing sections of the Southwest.

Harvesters are busy in the grain fields of the Calipatria section. Ranchers are securing average price of 90 cents.

Several Los Angeles milk distributors have been indicted by the grand jury because of alleged violation of the Cartwright act.

The last meeting of the Garden Grove, Orange County, farm bureau was addressed by Poultry Expert Easson of the university farm.

Blackeye bean growers of Orange County are forming a marketing pool which is expected to include most of the growers in the county.

Imperial Valley papers are urging Imperial and San Diego Counties to cooperate in maintaining the Mountain Springs grade in better condition for travel.

Lemon men are pleased at present price situation but realize the improvement is only temporary and are still discussing restoration of the industry to stable basis.

The Brawley farm bureau has appointed committee to draw up constitution and by-laws of a farmers exchange which will handle veal calves, hogs, hay and grain.

Southern California lovers of the beautiful are appealing for preservation of the yuccas now in full bloom on all the mountain sides. Automobile parties have made a habit of destroying them by the thousands.

The high record herd for May in the Imperial Valley cow testing association is the property of R. G. Cleghorn of Holtville, whose 20 cows averaged 945.7 pounds milk and 38.6 pounds butterfat per cow for 30 days.

The first annual grape growers conference in the Imperial Valley was held June 29. Many of the vineyards in the valley were visited and experts were present from the state university and department of agriculture.

The California Lima Bean Growers Association, in a recent advice, says that "the 1920 crop is not yet all sold but near enough to know that the distribution to local associations on regular Limas will be over $5 and under $5.50 per cwt."

L. J. Weishaar of the state standardization service recently left Brawley with an east bound shipment of seven cars of cantaloupes. He will conduct a minute investigation of temperatures at stated intervals, re-icing records and the quality of the stock on arrival at New York.

The Coast and General

The apple growing district of Southern Idaho this year shipped out 2,244 carloads of fruit.

The Wenatchee Valley of Washington shipped in 1919-20, 10,396 carloads of apples; in 1920-21, 8,162.

A new cow testing organization has been organized at Tempe, Arizona, with more than 600 cows signed up.

The Oregon Growers Cooperative Association will dispose of its apples and pears in the Rogue River section through the Stewart Fruit Company.

Gooseberry producers of Oregon are spraying with Bordeaux to prevent anthracnose. The gooseberry crop will run this year about 6,000 pounds per acre.

The proposition is being considered by the civic organizations and business interests of the Salt River Valley to carry out a $200,000 advertising campaign.

A preliminary reconnoissance survey of the Colorado River and vicinity is being made by Harry Blake under the direction of W. S. Norveil, state water commissioner of Arizona.

The condensed milk plant which recently reopened at Tempe, Arizona, is putting out 15,000 cans of milk daily. There is said to be a market for at least twice this amount at the present time.

Lieut. Alexander Pearson recently made an aeroplane flight over the Grand Canyon and succeeded in making a landing in the canyon. He is making a study of the air currents of the canyon.

The apple season in the Pacific Northwest shows shipment of 28,000 carloads up to March 1, 1921. This is 9,000 cars less than last year at same date. Winesaps made up 36 per cent of the shipment.

There is much talk in the Northwest of reviving the apple show at Spokane which was for years an annual feature. It is suggested that it be held in turn at Portland, Tacoma, Seattle and Spokane.

Grain growers of the Salt River Valley have organized as a subsidiary of the farm bureau. It is expected that through the organization growers will receive at least 35 cents a hundred more for their wheat than was offered before the organization.

Previous to the war prunes were grown in Bosnia and Serbia to about the same extent as in California. Most of the packing houses and many of the orchards were demolished, but last year the crop was a good one and 50,000 tons of dried prunes were produced.

The new state law of Arizona requiring all real estate dealers to take out a state license is now in effect. Clarence Woodbury, former secretary of the Maricopa County Realty Board, has been appointed state real estate commissioner. This is handled through the office of the state land commission.

The board of supervisors of Maricopa County, Arizona, are recommending to the state board of equalization the reduction of 25 per cent on the valuation of irrigated lands and 20 per cent on the valuation of city lots. Also a reduction of valuation of range cattle, poultry, dairy cows, sheep and swine.

A Fragment

THE Cultivator recently referred to the death of James De Camp and to the fact that he had been connected with the Cultivator for the past two or three years. At the time of his death he was just beginning an article on California highways and the proper protection of them, especially in the particular of their misuse by overloaded trucks. One of the large trucks, with weight of load and truck of ten tons or more and making on a level or a slight down grade an easy 20 miles an hour, gives terrific hammer blows from its solid rubber tires, and this has been definitely shown to have a most serious effect upon highways made on even heavier base than is now possible. It is with extreme regret that we give only this fragment of Mr. De Camp's work and wish that he could have finished the article with other facts that he was gathering to show that we should give more consideration to our highways.

* * *

By James De Camp

There was once a man of my acquaintance who climbed far out upon a husky tree limb and carefully sawed it off between himself and the trunk. The spectacle of this witless woodsman hurtling himself earthward toward the hospital is scarcely less comical than that of the California truck owner wailing to high heaven about the expense of highway building and maintenance while his grossly overloaded caravans thunder from Mexico to Oregon.

It is a fact that one-eighth of the trucks on California highways today are overloaded to some extent, most of them seriously enough to damage the road surface in the localities they traverse. It is also a fact that in the greater part of the state little or no effort is being made by the authorities to enforce those provisions of the California motor vehicle act which specify a penalty for the overloading of trucks.

Before any of the measures now being considered for adjusting license fees, taxing gasoline, etc., are settled upon to help finance extension and maintenance, would it not be well for the law abiding seven-eighths of California's truck owners to insist that the weight hog be summoned to an accounting and required to show a proper respect for public property? If a person should throw a brick through one of the windows of the state capitol he would be rushed to the calaboose with more speed than style. Yet another may load down a truck with double the weight the law allows and proceed to hammer the daylights out of an expensive highway surface to his heart's content.

Section 15, paragraph C of the motor vehicle act fixes the maximum load permissible at 800 pounds upon any inch width of tire. In speaking of enforcement the act says "The supervisors of any county, etc. . . ." In several districts local and county authorities are enforcing this provision carefully, but throughout the major portion of the state a truck operator is permitted to haul whatever his motor can pull.

The California State Automobile Association (representing the northern part of the state) and the Automobile Club of Southern California recently conducted a joint investigation into the overloading of motor trucks. During a period of four months 2,000 trucks were weighed in various districts. Of this number 256 were found to be overloaded to various degrees, some carrying as much as 100 per cent overload.

The truck owner who believes he is beating the game by overloading will ultimately be in the same predicament as the man who went to sleep with his wooden leg in the fire. In addition to running up city, county and state road taxes for himself and his neighbors he is shortening the life of his truck equipment and boosting repair bills.

San Joaquin Grape Growers for New Markets

By Arthur L. Dahl

THE dried grape has made Fresno the raisin capital of the world, and one who remembers the old town of ten years ago will never cease to marvel if he again visits the new city built almost entirely with raisin money. There was money in grapes in the old days when wineries bid against other markets for the luscious clusters from the vines, and there still is money in grapes in these dry days, for new markets are opening to the growers, and even some of the closed wineries are again opening their doors and the wine presses are busy with more legitimate objects in view.

The making of fresh grapes into raisins is one of the most effective ways devised by man for preserving the fruit of the vine, and the cooperative efforts of the raisin people have taught the whole world to appreciate California raisins, but all grapes cannot be converted into table raisins, and it is for this class of products that the most concern has been felt, for ordinarily the wineries would have absorbed these grapes at a price that would return a fair margin of profit to the grower. Certain varieties of black grapes were grown almost entirely for wine making purposes, while a considerable part of each season's crop of raisin grapes was found suitable only for crushing, so that the advent of prohibition affected nearly all grape growers to a more or less extent.

In a talk recently with a man prominently identified with the grape industry, some very interesting information was secured as to the plans of the grape growers for marketing their crops not found suitable for raisins. According to Ed Harper, president of the Golden State Products Company, which company operates a big plant at Kingsburg and is a large buyer of fresh grapes, a number of avenues are open to grape growers for disposing of their crops. To begin with there will probably be this year, as in the last two seasons, a big Eastern demand for fresh grapes, and this demand includes all varieties. Last season thousands of crates, barrels and boxes of fresh grapes were shipped to various parts of the country to be used for pressing into home made beverages by the Latin people accustomed to their daily portion of wine, and unless it is held that shipment of fresh grapes for pressing purposes is unlawful, the market this year will be even bigger than usual. This pertains exclusively to those varieties of grapes not ordinarily classed as table grapes, and shipped east in cork or redwood sawdust for sale to the family trade. There is always a steady and fairly large market for such eating grapes, and prohibition has not affected it one way or another.

Mr. Harper further reports that thousands of tons of fresh grapes will be crushed and the juice made into grape syrup, which will insure another market for the growers. Last season several concerns, including the Golden State people, put out considerable quantities of bottled grape syrup which was extensively advertised as a new table product, for use on hot cakes, in making soft drinks, etc. So well did this product go that the big plant at Kingsburg is being enlarged to handle double the quantity of grapes this season, and it is possible that one or more additional plants will be opened up in the San Joaquin Valley to manufacture grape syrup. For this purpose the old winery buildings and equipment serve admirably, with some necessary changes and additions, for the crushing of the grapes and the handling of the juice in the preliminary stages are identical for grape syrup and wine. For making syrup, however, large vacuum boiling pans are required, where the fresh juice is divested of its surplus water, and the necessary bottling equipment is needed, where the product is prepared for the market. To keep the fresh juice from fermenting or spoiling until it can be run through the vacuum pans, the Golden State plant has installed a series of huge reservoir tanks, in which refrigerating coils are installed, so that the contents of each tank can be kept at a given temperature indefinitely. This solves the most important problem connected with the conversion of fresh grape juice into syrup. Since the grape harvest extends over a period of but a few weeks, and the commercial plants must necessarily crush the grapes faster than the juice can be boiled, it was necessary to devise some means of preserving the fresh juice, and the cold storage was the result. Now, by maintaining sufficient storage, a grape syrup plant can operate over a period of many months, drawing on the cold storage tanks for the fresh grape juice required to keep the vacuum pans going, and as a result such plants as the one at Kingsburg can run long after the grape season is ended, giving employment to hundreds of men and women.

One of the plans that is being worked out by Harper and his associates is to pool the interests of the grower, manufacturer and distrbutor so that all will work for the advantage of all. This is done by having the growers adjacent to a syrup factory become stockholders in said plant and deliver to it a certain percentage of the grape crop from their vineyards. Likewise, fruit brokers and distributors in various parts of the country are taken in as stockholders, in consideration of which they are given the exclusive agency in their territory for all the products of the factory. Many of these brokers already have the facilities for handling fresh fruit, and they will solcit orders for fresh grapes, for eating or crushing purposes, and these orders will be wired to the California plant and filled from the fresh stock of grapes offered daily. By this means it is expected that the same plant can make shipment of fresh grapes in boxes or crates, or if this market is not available, the grapes can be crushed and made into syrup or bottled as grape juice. The grower will benefit in two ways, first by having an assured market for his grapes, and next by partiicpating in the profits of all sales made by the plant in which he is a stockholder. The eastern brokers likewise profit from the commissions earned on shipments of fresh fruit and bottled syrup or juice handled by them, and by owning stock in the manufacturing unit, they will participate in the profits of the concern. Mr. Harper stated that so keen was the competition amongst eastern distributing firms that one concern alone, in Chicago, offered to take all the allotment made to dealers, but it was thought best to distribute the stock among a number in different parts of the country to assure a more permanent success.

That California grape growers feel assured of a successful future for their industry is shown by the high prices asked for bearing vineyards, and the additional acreage that is being planted to vines. The grape area in the San Joaquin Valley is gradually creeping farther south, and many vineyards in Kern and Kings Counties are vying with those of Fresno County for first honors, and in the northern part of the state, in Sonoma County and other vineyard districts, sales of grape holdings are at fancy prices, and contracts for the 1921 crop of grapes are being made at profitable figures for the growers, and many of them refuse to sign up at all, planning to dry or otherwise handle their own production when harvest time comes.

FRESH FRUIT, ESPECIALLY IN HOT WEATHER

Fresh fruit furnishes a valuable part of the meal, stimulates the jaded appetite, cools, refreshes and is easily assimilated. Especially in hot weather fresh fruit is doubly welcome at meal time.

Grapes, for instance, contain blood building constituents such as sugar, potash, salts, phosphoric acid, lime and iron. Apples and pears contain phosphates, lime, albumen, and malic acid, and act as gentle laxatives. Cherries and plums furnish phosphates, sugar and nitrogen. Berries are good tonics for their acids and salts of lime and iron. Oranges are blood makers and laxatives. Melons are largely water in combination with sugar and starch. Lemon juice taken regularly is a valuable laxative with a pronounced beneficial effect on torpid livers. In children's diets oranges, berries or acid fruits should not be given along with milk. Continued use of fresh fruits will promote intestinal activity and reduce acidity of the blood. Fruit has ceased to be a luxury. Even at higher prices for standard grades it is a wise and excellent investment.

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The name of the writer and further particulars may be obtained from

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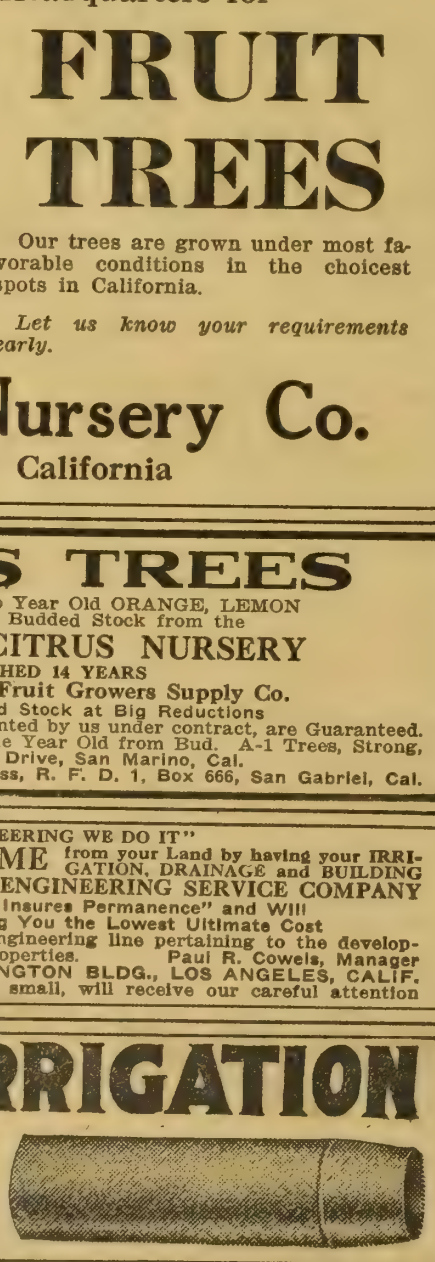


Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

Seedling Avocado Orchard

By Ernest Braunton

IN company with County Farm Adviser Hodgson and K. A. Ryerson, assistant state leader of agricultural clubs for the coast counties, the writer visited several avocado orchards ranging from Azusa in Los Angeles County to Yorba Linda in Orange County. All but one were planted to budded varieties; one five acre orchard was planted to seedlings of varied type and uncertain parentage.

The owner of this land had been a cook in a prominent Los Angeles hotel. In that capacity he had been able to secure all the seeds that came to the hostelry. The fruits were doubtless unnamed sorts from Florida, the West Indies, Central America, Mexico, Hawaii, South Sea Islands, and a few were, perhaps, Californians, for this happened 11 years ago. Today the orchard is a study, an avocado museum. Every type of tree is present. Some are tall, columnar, others spreading and drooping, with every transitional form. Foliage runs from the pale green of the West Indian to the deepest green possible. Some leaves are small, some large, some thick, some thin. Smooth leaves scarcely veined are on one tree, on the next may be a rough, deeply channeled leaf. In no orchard in California is the range of gross aspect or detail of parts greater.

At least 25 per cent of the trees have fruited and the fruits are as variable in appearance as the trees and their leaves. As to palatability, the writer is at present eating the different types of fruits as they become ripe and therefore has nothing to say just yet. Suffice it to say that in the entire orchard the fruit of no tree appear good enough to name and perpetuate. Had these trees come from seeds of good named varieties the per cent of desirable fruits would probably have been greater. Yet even this we do not know. But based on the experience of many years of study and plant breeding, we opine such selection should have been productive of better results. No doubt it would pay the owner of this orchard to top-work every tree. This treatment would not deprive him of an income from the second grade fruits now being sold. The transition from old top to new may be so graduated as not to imperil the corpulency of the pocketbook. We shall watch closely this orchard and report further.

The Silent Homestead

EXCEPT for song of bird and ripple of waterfall the homestead is silent, the voice of the maker will never return; for this fine country home near Glendora, Los Angeles County, was the property of the late Charles Silent, a pioneer settler of Los Angeles. Since the death of the owner no one but caretakers are there, the gates are locked and large signs proclaim "Closed to the Public."

Two members of the Cultivator staff, with G. P. Rixford, physiologist, United States bureau of plant industry, recently visited this noted foothill country place and found easy entrance. The public are excluded only because some of them do not seem to be aware that the property was not designed for them to prey upon at will. Not alone flowers, but oranges, avocados and other tropical fruits have been ruthlessly stripped from the trees, the latter sometimes being broken down by vandals climbing far for the last unlawful prize in the form of a ripe avocado, cherimoya or sapote.

The place is one of surpassing loveliness. One hilltop has been flattened to a level greensward, supported by terrace walls of Glendora purplish brownstone, the crest enclosed by noble specimens of the beautiful Cocos plumosa palms. At one end is an "outdoor" rustic dining pavilion, and at the rear a number of tiny palm thatched cottages, each containing living room, sleeping room and bath. About these buildings grow begonias, fuchsias and other decorative flowering plants in almost tropical luxuriance, thriving as they seldom do at lower altitudes. Over the buildings and arbors clamber such rare plants as the Copa de Oro, or Cup of Gold (Solandra guttata of the botanist), the huge golden chalices as large as teacups and quite similar in form. With this species is also growing one having large bell shaped flowers of white, Solandra grandiflora. All about are palms, bamboos, glens filled with ferns of many species, hillsides covered with flowering yuccas, the whole scene one of unusual garden splendor, cared for as in the days when the plant loving owner lavished his affections upon each favored subject. For out of the wilderness Judge Silent wrought much of this loveliness with his own hands.

Stone enclosed roadways wind about the 400 acres, skirted on either side by subtropical fruit trees. There is nearly a mile of avocados marking the roadway's course through the more somber orange groves, and a majority of these seem to be of the Dickinson variety, now loaded with ripening purple fruits. On one main road the avocados are alternated first by a white sapote (Casimiroa edulis), and next by the Queensland nut (Macadamia ternifolia), both now in fruits about half grown. Feijoas and other guavas, carissas, cherimoyas, and a considerable variety of tropical fruiting shrubs complete the border plantation about this beautiful building site from which may be seen the mountains in the background, the broad, orchard covered valley in front, and beyond the round topped San Jose hills that divide it from the Pomona Valley on the other side. To the east the view is extensive toward San Bernardino and westward toward Los Angeles and the sea.

FRESH FIGS SHIPPED EAST THE FIRST WEEK IN JUNE

For the first time in the history of the fruit shipping industry fresh figs in carload lots are being supplied to American markets from California.

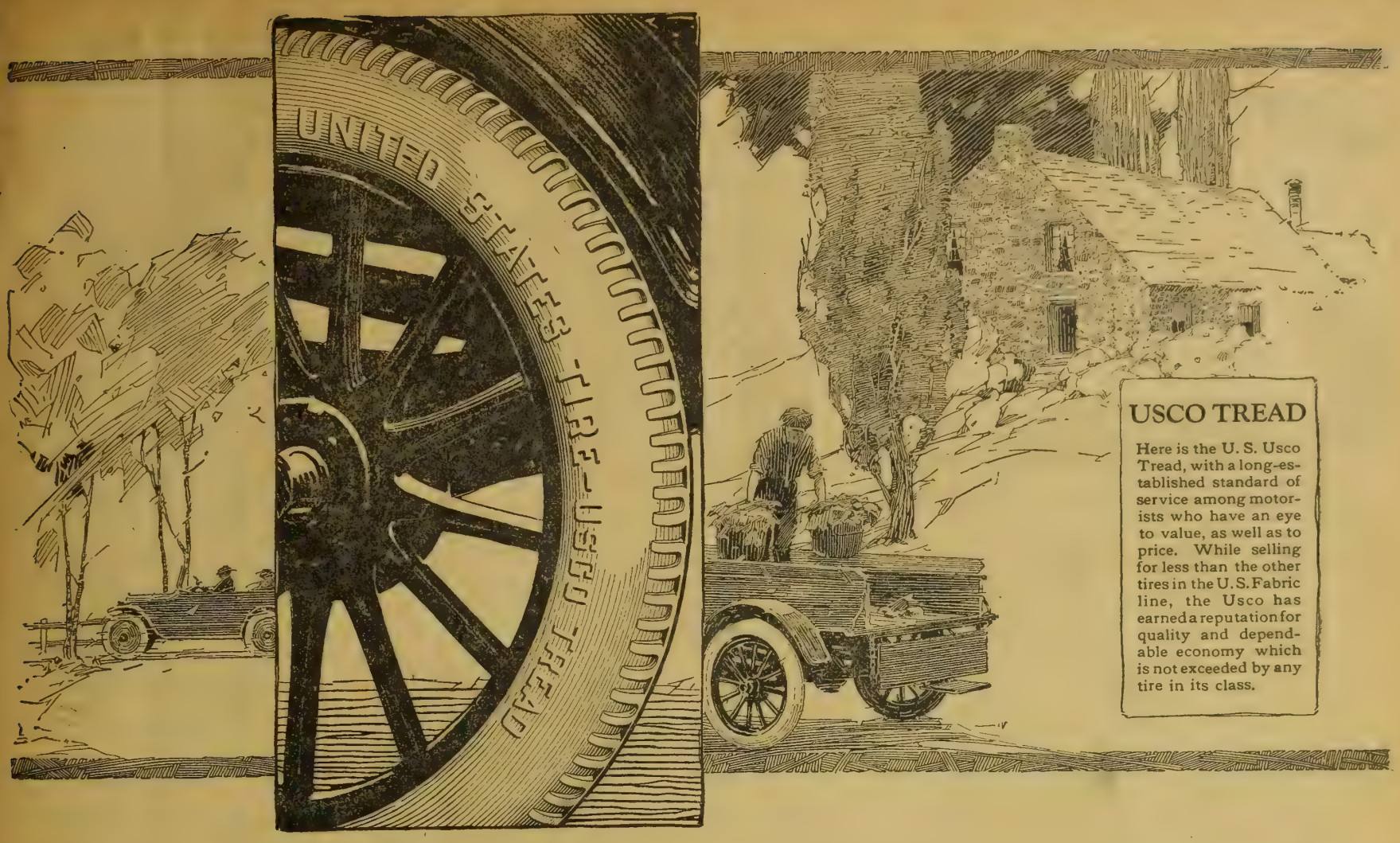
The failure in the past to successfully ship fresh figs has prevented the markets of the East from securing any great quantity of a fruit that is considered in a class by itself by epicures. In California where the problem of getting the fresh fig to the market in good condition is simplified, it is one of the most popular fresh fruits sold and demand has invariably been greater than supply. The revival of fig planting of recent years has increased the supply to a point where the fresh fig is available for Eastern shipment.

Officials of the United States department of agriculture state that not one-tenth of one per cent of the American people ever saw a fresh fig, say nothing of ever having eaten one. As the supply increases yearly the shipments will be extended to the principal markets of the East. The first will be distributed from New York and Chicago.

The decision to ship fresh figs is the result of a growing demand in Eastern cities. In order to carry out the project successfully four concerns active in the fig industry have combined for the purpose of getting the shipment through in the best condition possible.

The orchards selected to contribute the first carload of fresh figs were the Everett Goodale Black Mission orchard at Farmersville and the Scott and Forkner Fig Gardens at Fresno. The figs were picked at dawn by a trained crew from the J. C. Forkner Fig Gardens and pre-cooled in the early morning hours. The California Peach and Fig Growers supervised the packing and furnished boxes. The car was supplied and prepared by the Earl Fruit

(Continued on Page 43.)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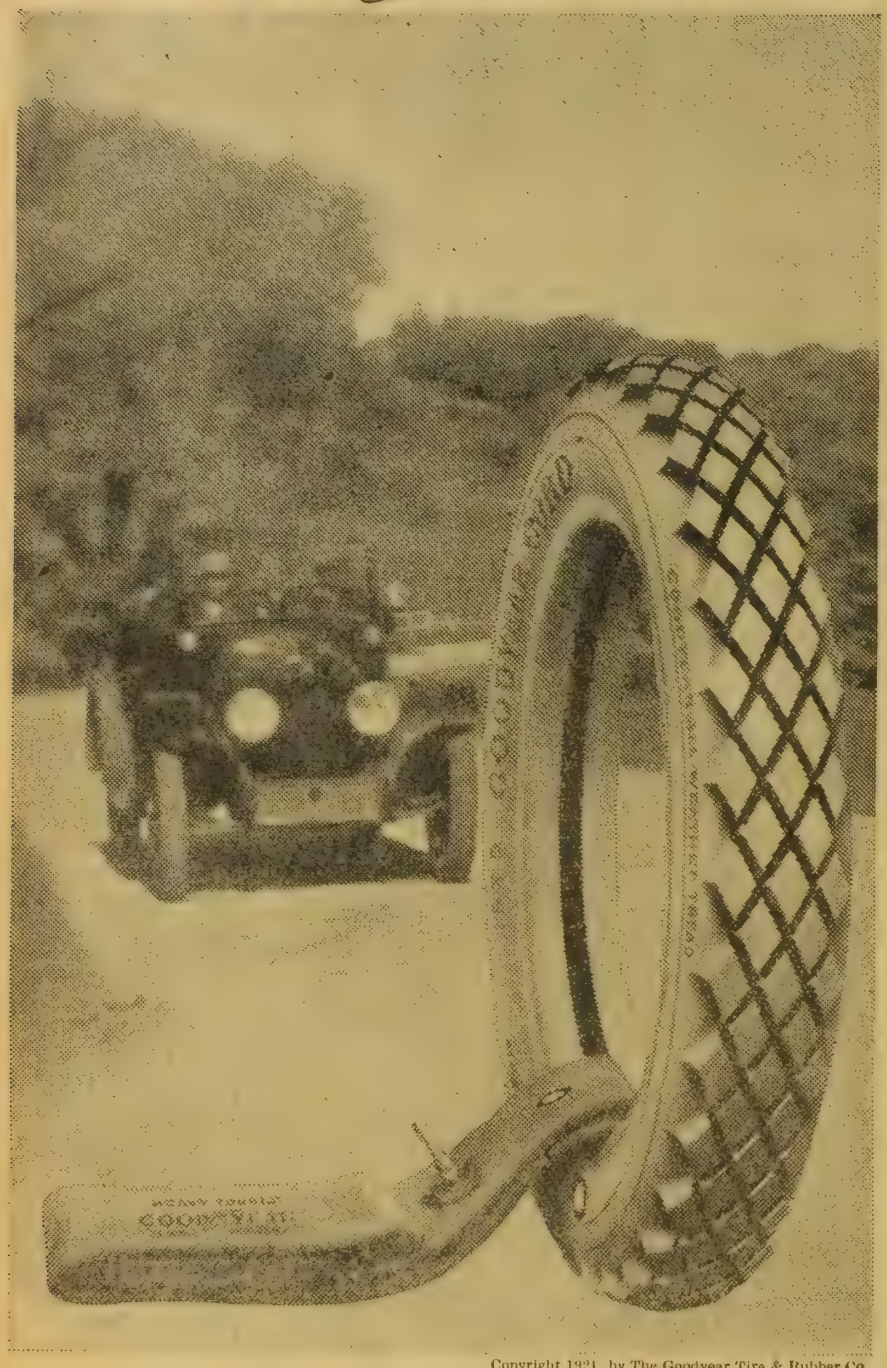

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Reclaiming Gophered Trees

By Ernest Braunton

FARM Adviser Hodgson of Los Angeles County has been holding a series of 12 demonstrations of inarching gophered orange trees. The work is done by planting close to the afflicted tree from three to five sour seedling oranges two years of age, usually about a half inch caliper. These are cut off and the top of the stubby trunk shoved up under the bark of the old tree, as near the ground as possible.

If gophered trees are small it is better to dig them out and replace with young trees. If of such size as to make them of decided value over a young newly planted tree, and the condition is not bad, it will pay to inarch with three trees. Older trees require four, and in very large ones it is better to use five, seedlings. Holes are dug around the gophered tree and

Two Inarched Seedlings

These may be told by the black "patches" of waxed-over cloth at the unions. Also note the gopher eaten zone below.

the young seedlings cut off to about a foot of stem or trunk. The cut is a slanting one of about one and one-half inches from heel to toe. This slanting cut is placed against the wood of the tree under the bark. An inverted T cut is used and the stem is shoved well up under the bark. When in place a small nail less than an inch long is used to nail the flat cut surface firmly against the sapwood of the tree. The earth is then placed about the roots of the seedling and all is ready for the finishing touches.

The cut is well waxed while the wax is warm. A shield or patch of waxed cloth large enough to cover the entire wound is placed and the whole again waxed. This gives a good protective covering that will last as long as protection is necessary. Soil is then piled up high enough to cover the union and is left there for about a month. This keeps the wound cool and moist, conditions ideal for uniting or knitting together the tissues. Action is set up in a few days and trees soon begin to show deeper color and increased vigor. This work should be done as quickly as possible after injury is done and for that reason orchardists should thoroughly inspect their trees each spring for trees attacked. Some orchards are free, but of those afflicted the per cent of gophered trees has been determined to run from five to 50.

The trees used by Mr. Hodgson were presented to him for this work by R. M. Teague of San Dimas, and when the latter was asked their value he said balled trees are worth 20 cents each and bare root trees 15 cents. Mr. Hodgson says bare roots are best because lightest and most convenient to carry about. A good man will treat from 15 to 20 trees a day and experts are now in the field who charge $1.50 per hour for their labor, so the cost per tree is easily determined. This method of rejuvenation will save badly injured trees whose value is too great to be sacrificed by neglect until they perish, or else linger for some years before again returning a profitable crop.

TEN POINTS ON PRUNING FIG TREES

By I. J. Condit

The pruning of fig trees depends upon the variety and the method of harvesting the crop.

Trees grown for fresh fig production such as the Kadota are headed low by heavy annual cutting back.

Trees grown for dried fruit are headed at about 16 inches and from three to five main branches selected for the framework of the tree.

Most fig trees bear two crops, the first crop on the old wood, the second or main crop on the new wood of the present season's growth.

Young Calimyrna and Kadota trees have a tendency to produce long, upright branches without laterals. Heading back early in the growing season or during the winter induces branching and prevents the branches from becoming top heavy.

Adriatic and Mission trees naturally produce laterals on the main branches. Cutting away low lying and interfering branches constitutes the principal pruning of these varieties.

Low headed trees are as a rule most vigorous. Long exposed trunks are very subject to sunburn and should be avoided.

Summer pruning seems to be advisable with Calimyrna trees early in the season to induce branching, and with other varieties simply to remove useless branches and suckers from the base.

The pruning of bearing trees consists in thinning out old wood to encourage new growth, in cutting back long branches to induce laterals, and in removing branches which interfere with cultivation.

Caprifig trees are pruned simply for shaping and for economical harvesting of the crop.

APPLES, PEACHES AND PEARS IN THE UNITED STATES

The condition of apples throughout the United States is 41.8 per cent of a normal, indicating a total crop of 107,698,000 bushels. A crop of 240,442,000 bushels was harvested last year when the condition was 79.3 per cent on June 1. The commercial crop (that part of the crop boxed and barreled) is estimated to be about 16,592,000 barrels or 49,776,000 bushels.

The production of peaches is estimated at 31,769,000 bushels on a condition of 45.5. Last year on June 1 the condition was 64.9 and a crop of 43,697,000 bushels was harvested.

Pears are only 43.8 per cent of a normal crop, indicating a production of 8,899,000 bushels. A crop of 17,279,000 bushels was harvested last year when the condition was 73.4 on June 1.

KEEPING CHERRIES FRESH

The preservation of cherries in fresh condition for one year by a new cold storage process has been practically demonstrated by experiments recently completed at the University of California by E. L. Overholser, W. V. Cruess and S. A. Bjarnson. Fresh cherries were retained frozen in dilute sugar solutions, with their original color, flavor and appearance unchanged.

The new method offers promise as a profitable means of keeping cherries for pies, pastries, soda fountain use, and for serving fresh in hotels and restaurants. With the low prices being received during the present season for fresh cherries, this method can be profitably utilized in the disposition of the cherry crop.

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Sand Cherry

Can you tell me where I can get seed of the Western sand cherry (Prunus pumila Besseyi), also Prunus pumila which grows about five feet tall in the wild state in the East? These are used for dwarfing stock for plum, peach, etc. Is the Rocky Mountain cherry one of these and what can you tell us of each?—Subscriber, San Jose.

We have been able to find no one who has the seeds or knows where they may be obtained. Prunus Besseyi is the western sand cherry and the original of the "Improved Rocky Mountain Cherry," now a fruit tree of commerce. It is a distinct species (from P. pumila), of prostrate habit, four to five feet high. Prunus pumila is known as sand cherry, grows five to eight feet high, with a small valueless fruit, whereas Prunus Besseyi has an edible fruit of some size. The geopraphical range of the two species is somewhat different.

Beans as Pigeon Feed

How do Garbanzo beans compare with peas as feed for pigeons? When is the proper time to start them? Do they yield as heavy a crop as peas? What are proper methods of growing? —Subscriber, Modesto.

This is a question which we will pass on to practical pigeon feeders. We can find no analysis of the Garbanzo but take it that it is very similar to the common field pea. Beans and peas run very close together as to analysis except that soy beans, peanuts and similar legumes run far richer in both protein and fat. Soy beans run over 14 per cent fat while some beans like teparies have only eight-tenths of one per cent and common field or garden peas run around 19 to 21 per cent crude protein.

Leaf Cutter Bee

Am sending leaves of a climbing rose. It is covered with leaves like the enclosed, showing little circular pieces cut out. Please tell me what is causing the condition and what is the cure?—Subscriber, McFarland.

This is the work of the leaf cutter bee, Megachile. Comstock says: "The bees of the genus Megachile have the curious habit of making cells for their young out of neatly cut pieces of leaves. These cells are packed away in such secure places that one does not often find them; but it is a very easy thing to find fragments of leaves from which the pieces have been cut by bees. The leaves of various plants are used for this purpose, but rose leaves are used more frequently than any other kind. The bee is a carpenter as well as a leaf cutter. It first makes a tunnel in wood, often selecting that which is partially decayed; then it proceeds to build a thimble shaped tube at the bottom of this tunnel. For this purpose it cuts from the leaves oblong pieces, each of which forms a part of a side and the bottom of the thimble shaped tube. When the tube is completed, the bee partially fills it with a paste of pollen and nectar, and then places an egg upon the supply of food. She then cuts several circular pieces of leaves, the diameter of which is a little greater than the diameter of the tube, and forces them into the open end of it, thus making a tightly fitting plug. Usually several cells of this kind are placed end to end in a burrow; and sometimes many bees will build their nests near together in the same piece of wood. The leaf cutter bees do not always bore tunnels in which to place their cells. We have found these cells in a crack between shingles on a roof, in the cavity of a large branch of sumach, beneath stones lying on the ground, and in Florida in the tubular leaves of a pitcher plant. Some species of bees make nests similar to those of the leaf cutter bees, except that the cells are formed of pieces of petals of flowers. The petals of Pelargonium are often used for this purpose."

While this pest is perplexing during time of its most severe attack it is hardly worth going to the expense of treatment.

Watermelon Blight

Is there any commercial fertilizer that will keep wireworms away from melons? I have noticed several of the long runners on my watermelon vines have wilted and dried up with apparently no cause. On some I noticed a small place where a little sap came out and dried. Can you solve the mystery and give a remedy? — Subscriber, Norwalk.

This is probably the common wilt or blight affecting melons, cucumbers and pumpkins. It is a bacterial disease carried from plant to plant by the twelve spotted beetle or other leaf eating insects. The first step is to destroy the insects by spraying with an arsenical spray. This should be followed by the removal and burning of the affected vines.

To Purify Water

What is the best way to purify water? We have a dug well 40 feet deep in which the water has stood for seven years without using. I have emptied the water out and let it fill up again and want to find out how to make it fit for drinking purposes.—Subscriber, Valley Center.

We think the pumping out and filling with pure fresh water should be sufficient. However, if there should be any decaying vegetable matter that should be carefully removed, and if one wishes to be doubly sure he may use sulphate of copper in the water, thoroughly agitating it and allowing it to remain a few hours, after which the water should be carefully pumped out and the new pure water which will fill should be perfectly safe to use. Where sulphate of copper is put into the water which is expected to be used for drinking or cooking purposes it may safely be used at the rate of one ounce of the chemical to 30,000 gallons of water. Presumably the application in the well which may be pumped out might be of much greater strength.

Moles

You are able to help others so I am sure you can tell us what to do to rid our fruit ranch of moles.—Subscriber, Loomis.

The only way to eradicate moles is by the use of a regular mole trap. We think all seed and plant stores carry these. The trap consists of two sets of jaws separated six or seven inches. To set the trap press down lightly the raised runway, then press the jaws down either side so that the trigger of the trap comes just above the pressed down runway. When the mole comes back through the same runway he naturally lifts the dirt, releasing the trap, and he is caught no matter which way he is coming from. The poisoning of moles is not practical for their diet consists of live grubs, worms and insects. They seldom molest the roots of plants or vegetable matter and by many are considered beneficial in orchard. Of course in lawn or in flower beds they are an insufferable nuisance and trapping becomes necessary.

Ant and Fly Poisons

I would like to know a good paste or poison for flies and ants as we are

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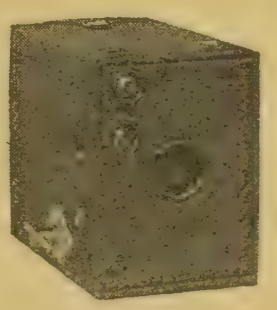

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being overrun with them this year. At the state fair last year there were signs "Use Germo for flies" in the sheds where the stock was kept, but I've been unable to find out where to get it. Any information concerning flies and ants would be welcome.—Subscriber, Stockton.

There are many very satisfactory ant poisons, fly poisons, sticky fly paper and fly repellents. Nearly all drug stores and seed and plant stores carry them. The ant poison comes in the form of pastes or liquids and often with the container comes small vessel for placing them in an attractive way before the pests. In addition with ants by tracing back the procession which they often form to their nests one may secure quicker action by destroying the whole bunch by pouring boiling water, gasoline, sulphate of copper solution or almost innumerable other destroyers into the hole. With flies common fly poisons or fly traps usually are satisfactory. Like the ants, however, begin at the source: Keep all manure in fly-tight bins or distribute and put under the soil so as to remove breeding places. Closet vaults and outhouses should be screened and kept fly tight. Besides the fly repellents put up commercially and sold as above suggested one may use the following spray to keep flies from cattle: 4½ quarts coal tar dip, 4½ quarts fish oil, 3 quarts coal oil, 3 quarts whale oil, 1½ quarts oil of tar. Dissolve three pounds laundry soap in water, add the ingredients of the spray and bring the whole up to 30 gallons with lukewarm soft water. This spray will keep off the flies and prevent the coats of the animals from becoming harsh. The cows should be sprayed twice a day, in the morning after milking, and in the afternoon when in the barn for silage or green feed.

Tanning a Rabbit Skin

Would you be kind enough to print an article in the Cultivator on tanning rabbit skins. I have several beautiful rabbits and would like to know if a person could tan them at home so that they would be suitable to be made into caps? Or would it be more satisfactory to send them to a real tannery? Also would like to know where I could buy a very good book on rabbit breeding.—Subscriber, Camarillo.

"The Rabbit Book" by Washburn suggests that one desiring to tan skins may "either use a commercial tanning compound of which there are one or two on the market which give good results, or he can, at less expense, make his own tanning fluid. In any case the treatment of the skin with the fluid is but a small part of the work involved in producing a soft, white hide, for while the skin is drying it has to be pulled and twisted, stretched and rubbed until quite dry and soft; this takes time and energy. The rubbing can be done over the edge of a board, the fur being protected by folding the skin. The fat or any flesh adhering has been removed before immersing in tanning fluid. If the fur is greasy the skin can, when partly dried, be immersed in a good grade of gasoline for about an hour, then wrung dry and dried with cornmeal or fine sawdust. The United States department of agriculture publishes the following recipe for a tanning liquid: To one gallon of water add one quart of salt and one-half ounce of sulphuric acid. Immerse thin skins for one day and heavy skins longer, but any skin may remain in the liquid indefinitely without harm. Remove, wash several times in soapy water (after this it should be rinsed thoroughly in warm, clean water), wring dry, then rub on flesh side with cake of hard soap, fold lengthwise, hair side out, and hang over line to dry. When barely dry, scrape (to remove any remaining fat and the tissue between muscle and hide, which, if left on, tends to harden and stiffen the skin), then stretch, rub, and twist until dry. Animal fat or butter may be worked in when warm, then worked out with hardwood sawdust. A dried pelt should be soaked in warm water for an hour before being placed in the tanning liquid."

"The Rabbit Book" by Washburn is published by the J. B. Lippincott Co., Philadelphia, at $2 net. Another book is "Practical Rabbit Keeping" by George Townsend, published by Cassell & Co., New York.

Trellising Raspberries

I set out a number of raspberry plants this spring which are growing vigorously. They now have shoots ranging from four to six feet long, which are one-half inch in diameter where they commence and taper down to about one-fourth inch. May I cut these shoots to a desirable length or must I train them up on a lattice fence? We have already had a few berries from them this year.—Subscriber, Orange.

If one wishes he may stake up raspberries, although with the red variety its canes are usually stout enough to take care of themselves. This is helped by pinching off tips and thus preventing excessive length and inducing fruit bearing branches. Blackberries and logans are usually trellised.

Government Whitewash

Will you please give me directions for making government whitewash for use on the outside of buildings.—Subscriber, Van Nuys.

An old time recipe for whitewash issued by the lighthouse board of the treasury department and often called "government whitewash," is as follows: Slake half a bushel of unslaked lime with boiling water, keeping it covered during the process. Strain it and add a peck of salt, dissolved in warm water; three pounds of ground rice put in boiling water and boiled to a thin paste; half a pound of powdered Spanish whiting and a pound of clear glue dissolved in warm water. Mix these well together and let the mixture stand for several days. Keep the wash thus prepared in a kettle or portable furnace, and when used, put it on as hot as possible with painter's or whitewash brushes. The washes which contain milk, flour or glue are not to be advised for use in damp, interior places, owing to danger of decomposition of the organic matter. For such locations it is better to use one of the formulae containing none of such ingredients. Whitewash is applied with a broad whitewash brush and is spread lightly over the surface, no attempt being made to brush it in as is the case with an oil paint.

Another formula recommended by a Sacramento painter, which will not rub off, especially when applied to smooth surfaces: Whitewash requires some kind of grease in it to make it most durable. Any kind of grease, even though it be old and partly soiled, will be all right, though tallow is best. The grease imparts to the whitewash an oil property the same as in good paint. To a 40 gallon barrel, say, of whitewash thinned ready to use, have incorporated in it ten pounds of tallow or any grease, mix in lime in the slacking stage, also ten pounds salt. In order to incorporate the grease properly it is necessary to put it in a vessel on the stove and boil it into a part of the whitewash so as to emulsify and get it into such condition that it can be properly incorporated with the whitewash mixture.

Another "lighthouse whitewash" is: (1) 62 pounds (one bushel) quicklime, slaked with 12 gallons of hot water; (2) 12 pounds rock salt, dissolved in six gallons of boiling water; (3) 6 pounds Portland cement. Pour (2) into (1) and then add (3). Alum added to a lime whitewash prevents it rubbing off. An ounce to the gallon is sufficient. Flour paste answers the same purpose, but needs zinc sulphate as a preservative. Molasses renders the lime more soluble and causes it to penetrate the wood or plaster surface; a pint of molasses to five gallons of whitewash is sufficient. Silicate of soda solution (about 35 degrees Baume) in the proportion of one to ten of whitewash produces a fireproof cement. A pound of cheap bar soap dissolved in a gallon of boiling water and added to about five gallons of thick whitewash will give it a gloss like oil paint.

Spray for Citricola

What is the proper amount of lime-sulphur to mix with 100 gallons of water in spraying for citricola scale? Also, when is the best time for spraying, and if I spray twice, when I should do it?—Subscriber, Highland.

As a rule fumigation has been preferred for the control of this pest. J. A. Prizer, in his address before the California Citrus Institute, stated that among the best spray remedies was the lime-sulphur solution in combina-

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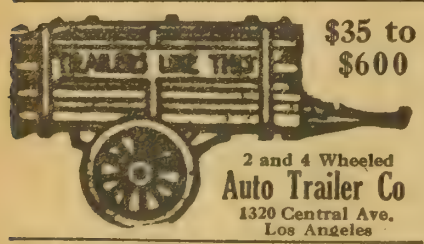

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tion with oil and glue, four gallons of commercial lime-sulphur to one and one-fourth gallons of miscible oil. Citricola should be sprayed or fumigated at once or by the middle of July, if possible. Of course, great care should be used in spraying.

Controlling Grasshoppers

Please send me formula for making poison bait for grasshoppers. Is there any other way of conbating them?—Subscriber, Delano.

The poison formula recommended by the state department of agriculture is: Paris green (or white arsenic), 1 pound; molasses (cheap black strap), 2 quarts; lemons (ground very fine), 6; water, 4 gallons; wheat bran (or alfalfa meal), 25 pounds. Add molasses, poison and ground lemons to water first. Stir thoroughly, then slowly pour this solution over bran and stir until an even mixture is secured. Spread the wet poison bran mixture very finely by hand from a bucket or with an end gate grain seeder attached on rear of wagon. This is sufficient to cover 4 or 5 acres. In orchards and cultivated fields spread poison in forenoon; on alfalfa and grassland in the heat of the day and before cutting the crop. Keep livestock away from bags containing poison mixture. Fall plowing and breaking up of soils where they lay their eggs is beneficial; also they are sometimes controlled, where they are a serious pest, by use of hopperdozer, a long scraper-like contrivance drawn by two horses, with trough containing coil into which the hoppers are supposed to hop. This has not proved a very practical means of control and its use has not extended.

Leaf Eaters

Enclosed please find leaves from plumcot and walnut trees. They are perforated and are rapidly falling. Would you advise cause and remedy?—Subscriber, Shafter.

This plumcot leaf has been injured by leaf cutter, or one of the leaf eaters. There are many of these, such as the rose chafer, May beetle, leaf cutter bee and others. Their work is not sufficiently damaging to justify campaign of control, and we presume before this time they have disappeared. The walnut leaf appears to be affected by some fungus, but specimen is too dry to determine. If the trouble still appears serious larger and fresher specimens may be sent and we will submit to an expert.

Experiment Station Addresses

Will you kindly tell me the location of the agricultural experiment stations in South Carolina, Florida, Alabama, Mississippi, Missouri and Tennessee? I believe the most helpful department of the Cultivator is your "Answers to Questions."—Subscriber, Arcadia.

The agricultural experiment station of South Carolina is located at Clemson College P. O.; the Florida station, Gainsville; Alabama, Auburn; Mississippi, Agricultural College P. O.; Missouri, Columbia; Tennessee, Knoxville.

Resetting Strawberries

I planted about an acre to strawberries last fall and the ground not being level I am having a hard time to get water to the plants. Would it have any effect on the berry crop if I should dig the plants in August and set them back in ground within a few days? What is the best way to plant them?—Subscriber, Sacramento.

If the soil is of sufficiently firm texture it is very possible that these plants could be dug, those that are in hollows raised with leveling done by shovels and those that are on the higher points lowered and thus continue growing and even bear a crop. That would call for great care, however. If the field is so uneven that the entire surface has to be cleared in order to do a complete job of leveling, then we would prefer to wait until the dormant period, preferably in December.

Salting Hay

I am going to stack and salt my oat hay this season and would like to know what quantity of salt to use per ton.—Subscriber, Chino.

Regarding salting hay Henry's "Feeds and Feeding" says: "Salt and lime scattered over hay when put into the mow tend to prevent fermentation and check the growth of molds. Salt also renders it more palatable. These materials are not essential, but are helpful, especially when storing partially cured hay during bad weather." We will ask any subscriber who has had experience in salting hay to give suggestions as to the amount per ton. It would surely be a very few pounds and we presume would be a matter of judgment.

Orange Trees Run Down

I have 14 acres oranges and two acres do not do well. Trees are three to four years old on sandy soil and small for their age. I give them plenty of water once a month. Fertilized a year ago with bean straw and barnyard manure; again this year with barnyard manure; also had a good cover crop of Melilotus Indica. Trees seem to leaf out well, then leaves gradually drop off and trees are always full of dead twigs. Most of the time they are about half defoliated. What's the matter with them and what can I do to get them normal? These trees are in front part of place and look bad. The soil gets heavier towards back of place.—Subscriber, Buena Park.

This is a matter for study of the particular problem. The falling leaves indicate that at least periodically the tree or the soil is in bad condition. It would be well to give a general overhauling such as pruning out the dead material, irrigating so that water reaches to the lower depths and in sufficient quantity that the tree does not dry before the next irrigation. Again, there may be a serious infestation of scale. This is a serious drain on the vitality of the trees and might cause the appearance indicated. Late in the fall thorough and deep plowing might correct soil conditions and make next season's work more satisfactory. The tree, like the human, is liable to so many ills that a correct diagnosis, which can only be had by personal contact, is the first step.

Zante Currant

Is the Zante currant a hardy vine in a hot climate? Do the vines have to be staked like a seedless vine? How far apart should they be planted?—Subscriber, Guinda.

See page 393 of the California Cultivator of September 25, 1920, for extended article and cultural directions on the Zante currant which does well in the San Joaquin Valley. That article is illustrated with photographs of the vine showing method of pruning and calling attention to the success which the vine has had in that valley. The article is written by Fred K. Howard.

Bush Fruits

I wish to get some Cory thornless blackberries, thornless gooseberries, barberries and currants. Will you please inform we where I can get them and the best time to plant?—Subscriber, Reedley.

We think any of the nurserymen advertising in the Cultivator can supply vines of the Cory thornless at the next planting season which will be in December or January when vines are dormant. As to thornless gooseberries and currants we will pass the question on to our subscribers though we take it ordinary gooseberries may be had of nursery people in the neighborhood of Greenfield, Monterey County, and in the coast counties north of San Francisco where they are also grown. Of course the most common variety of gooseberries is the Downing, often termed the American gooseberry. As to barberries, many eastern states make it a misdemeanor to harbor this pest which encourages the rust. Usually the fruit is not considered of sufficient value to justify any general planting.

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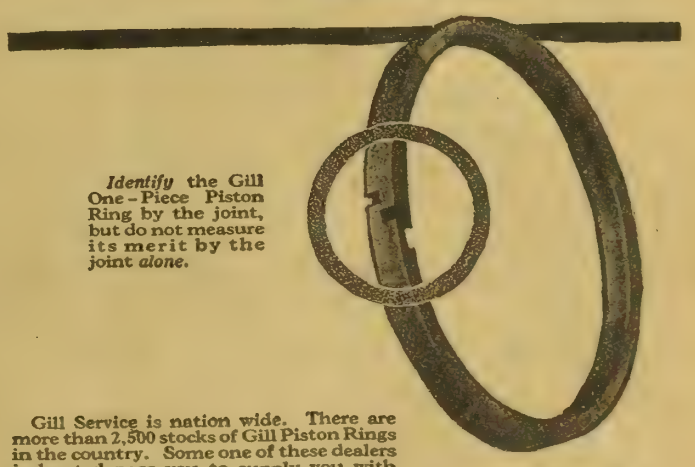

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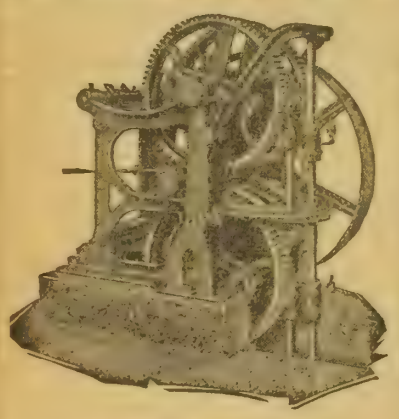
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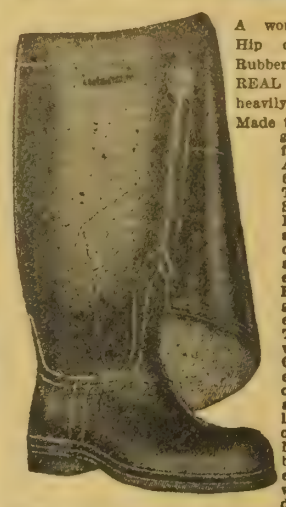
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Household Department

THE CARELESS SMOKER

(Apologies to Kipling.)

A fool there was and his pipe he lit
(Even as you and I)
On a forest trail where the leaves were fit
To become albaze from the smallest bit
Of spark—and the fool he furnished it—

The forest burned to its very roots,
Even beneath the ground,
With the flowers, the birds and the poor dumb brutes,
Old hoary oaks, and the tender shoots
Which might have made logs but for such galoots
Allowed to wander round.

The lumber jack has now passed on
His pay day comes no more
And the screech owls haunt the camp at dawn
Where the cook's tin pan woke the men of brawn,
But the mill is silent, the trees are gone,
The soil and the forest floor.

A deadly sight are those hills of rocks
Which once were beds of green.
No hope for the human, no food for the flocks,
The floods must be held by expensive locks
And the harbor is silted to the docks,
The ships no more are seen.

But the fool smokes on in the forest still,
Leaves camp fires burning, too.
While the patient public pays the bill
And the nation's wealth is destroyed for nil—
If the law doesn't get him, Old Satan will,
When his smoking days are through.
—Harris A. Reynolds, in "The Open Road."

ELSIE

By Margaret Condon

(Continued from last week.)

Thus it was decided. As soon as Donald could find a tenant for the ranch they would leave for the East.

"What do you think, Donald," she exclaimed excitedly, "My cousin, Janet Harris, is coming to spend a day and a night with us on her way East. I told you she was visiting friends in San Francisco. She is returning by the southern route so that she may see us. Isn't it great, Donald?" and Elsie's eyes were shining with joy.

"It's jolly good news, Elsie," Donald returned heartily. "When will she come?"

"Tomorrow on the early train. We must drive into town to met her."

Donald assented, and Elsie, all her troubles forgotten for the time, began preparations for her guest.

Mrs. Harris, Elsie's Cousin Janet, was on friendly terms with Donald long before their small roadster had covered the distance from the railroad station to their home.

"You see, Donald," she said in her frank, kindly manner, "I am years older than Elsie and privileged to scold her if she deserves it. Why are you so quiet, Elsie? I expected you would have wonderful stories to tell me of your life in California," and her clear eyes rested inquiringly on the girl's flushed face.

Elsie was spared the necessity of replying as at that moment Donald turned the car into the driveway that led to the house and the joyous welcoming bark of Teddy greeted them.

Janet Harris was out of the car almost before it had stopped and caressingly patting the collie's head as Donald said cordially:

"Welcome to Oakglen Ranch, Cousin Janet."

"Oakglen," she repeated. "An appropriate name for your beautiful place." Then glancing about keenly, "I see from what it is named; those wonderful live-oak trees, and it is a glen in the foothills, isn't it?"

Donald smilingly assented, while Elsie maintained her quiet demeanor, and Janet's lively flow of conversation went on.

"Roses, roses!" was her exclaimation, as she caught sight of the pergola. "Red and white, and pink and creamy! Oh, glorious, glorious! How do you manage it in the dry season?" as she turned to Donald.

But it was Elsie who answered brightly:

"Donald loves the roses—and so do I," she added slyly, stealing a glance at Donald. "He takes especial care of them, and they know it, so they respond. You should have seen our pergola after the rains, Janet. Just covered with masses of fragrant bloom. It was wonderful."

Donald smiled, his eyes on the girl, and her face colored hotly as she read his thoughts.

"No, I don't want to go into the house yet," came Janet's lively voice, as Donald started up the steps. "I have only this one day, remember, and I must see everything on the place."

And so, luncheon forgotten for the time, they wandered over Donald's broad acres, and although the crops were harvested and the land sere and brown, awaiting the autumn rains, Janet found new wonders at every turn. The great live oaks and sycamores, the fringe of tall, pungently odorous eucalyptus trees that sheltered the ranch from the sea breeze, the birds flitting among the trees, the wealth of bloom and shrub, all appealed to this appreciative Eastern visitor.

Finally they turned their footsteps toward the house and Janet said earnestly:

"I congratulate you, Donald. I love it all, and I'm sure Elsie must be very happy here. A lovely home and a devoted husband," she added archly, glancing at Donald. "What more could a girl ask?"

Donald flushing hotly under his bronzed skin, turned his gaze upon Elsie but said nothing. Loyally he was standing by his girl wife, leaving it to her to tell her cousin what she chose.

To Elsie the situation was embarrassing and her thoughts perplexing. In the face of Janet's appreciation of their home and surroundings how was she to confess that the ranch was to be given up at her insistence? How reveal her lack of interest in all that Donald cared for? She had looked forward to receiving Janet's sympathy in her homesickness, but that was impossible now. A twinge of remorse seized Elsie as she thought of Donald's goodness and of all that he was sacrificing for her. All through that bright September day a still small voice was whispering to the girl, "Janet is right. You have a lovely home. You are selfish." Then came thoughts of her old home and dear ones so far away, and the small prompter was silenced.

The hours of their brief day with Janet sped quickly and evening found them gathered on the veranda.

Janet glanced at the collie where he lay at Elsie's feet.

"Contentment personified," she said. "How Teddy would miss you if you left him. I think, Donald, if you and Elsie make a trip East any time in the near future you will have to bring the collie. You couldn't bring your roses and your mockingbirds, but you could bring Teddy."

Elsie stooped to caress the dog as Donald returned whimsically

"O no. We could never take Teddy on a long journey, and then he's a 'native son.' He would not like the ice and snow of New England. We'd leave him with Pedro."

Elsie's eyes met Donald's with a peculiar look and his heart beats quickened. "If only," he thought, "Elsie would see things as Janet sees them," when an exclamation from Janet drew their attention.

"Look!" she said. "How beautiful the night is!"

The stars had come out and in the clear atmosphere they sparkled like jewels set in a deep blue background that seemed tonight very close to them. A red gold crescent moon was mounting over the Verdugo hills, lying dark and deep in the distance. The night was warm and the light breeze wafted to them from the mountains the fragrance of wild growing things.

(Continued next week.)

HINTS FROM HOUSEKEEPERS

Quince Preserve

Peel ripe quinces and cut in squares the size of cube sugar. Pour boiling water on them and boil five minutes. Pour off water, put in a little boiling water and cook until done, add sugar to taste and cook five minutes. Then you will have the finest pale pink colored preserves you ever saw or ate. It has been thought that quinces were worthless except for jelly, but they make the finest tasting preserves of any fruit that grows. This recipe, with an explanation under it, printed in J. E. Bergthöldt's cook book of all kinds

The Cultivator Patterns

3302-3610. Ladies' Costume.—Waist 3302 cut in six sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Skirt 3610 cut in six sizes: 24, 26, 28, 30, 32 and 34 inches waist measure. To make the dress for a medium size will require 3¼ yards of 27 inch material for drapery, collar and cuffs and 5½ yards for short sleeves and waist. The width of the skirt is two yards at the foot. Two separate patterns, 10 cents for each pattern.

3602. Girl's Dress.—Cut in four sizes: 2, 4, 6 and 8 years. A 4 year size will require 2½ yards of 36 inch material. Price 10 cents.

3603. A Charming Negligee.—Cut in four sizes: small, 34-36; medium, 38-40; large, 42-44; extra large, 46-48 inches bust measure. A medium size will require 5⅝ yards of 44 inch material. Price 10 cents.

3593. Junior Dress.—Cut in three sizes: 12, 14 and 16 years. A 14 year size will require 3¾ yards of 38 inch material. Price 10 cents.

3389. A Simple Dress.—Cut in seven sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size will require 5⅝ yards of 40 inch material. The width of the skirt at the foot is about 1⅞ yards. Price 10 cents.

3291. Child's Dress.—Cut in four sizes: 2, 4, 6 and 8 years. A 4 year size will require 2⅜ yards of 36 inch material. Price 10 cents.

3596. Ladies' Apron.—Cut in four sizes: small, 34-36; medium, 38-40; large, 42-44; extra large, 46-48 inches bust measure. A medium size will require 4¼ yards of 36 inch material. Price 10 cents.

2418. Play or Work Uniform for Boys.—Cut in five sizes: 4, 6, 8, 10 and 12 years. Size 10 will require 4 yards of 36 inch material. Price 10 cents.

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Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cents) stamps for each number. In order to furnish our readers with the very best **NEW YORK** styles, all patterns ordered are filled in **NEW YORK.** Therefore, we promise to deliver all patterns ordered within **TWO WEEKS;** we guarantee safe delivery of all patterns.

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Send 15c in silver or stamps for our Up To Date Spring and Summer 1921 Catalogue, containing over 500 designs of Ladies', Misses and Children's Patterns, a concise and comprehensive article on dressmaking, also some points for the needle (illustrating 30 of the various, simple stitches) all valuable to the home dressmaker.

PATTERN DEPARTMENT
California Cultivator
Los Angeles

of fruit, circulated through the United States, would advertise the quinces in such a way that it would be almost impossible for many years to supply the demand.—O. H. Mack, Reno, Nevada.

Peanut Taffy—Nut Crisp

In your issue of June 25 you ask for a recipe for a peanut taffy. Here is one which has been in our family for years: 2 cups molasses, 1 cup brown sugar, 1 tablespoon butter, 1 tablespoon vinegar. When the candy threads pour it over peanuts in buttered tins.

Here is another recipe which makes delicious candy:

Nut Crisp.—Butter a pan about 8 by 12 inches and cover with coarsely cut nut meats, raisins, fig and citron. Boil two cups sugar and ½ cup water to soft ball, add 1 teaspoon vanilla and pour over the hot nuts. When perfectly cool mark off in sections.—Mrs. Clara Kommers Hall, Waterford.

Peanut Taffy—Cream Rice Pudding

Peanut Molasses Taffy, such as we made at home in New England when I was a little girl: 2 cups molasses (light), 1 cup sugar, 2 tablespoons butter, 1 tablespoon vinegar, pinch of salt (unless butter is quite salty), 2 cups shelled peanuts. We made it in an iron kettle with a round bottom. Put butter in first and when melted add molasses and sugar. Stir until sugar is dissolved. When nearly cooked should be stirred constantly as it burns very easily. Boil until brittle in cold water. Add vinegar just before taking out, also peanuts. Pour into well buttered pan about one-half inch deep.

Cream Rice Pudding with Honey.—One quart milk, 2 tablespoons rice, ¼ cup honey, ½ teaspoon salt. Pour into buttered pudding dish and bake very slowly for three hours. Stir several times the first hour. If you wish it very sweet use one-third cup honey. Add a little flavoring if you wish, but honey has a flavor of its own.—Mrs. R. P. Dickson, Porterville.

HOUSEHOLD QUERIES

Sweet Pickles—Mixed Pickles

I would like some one to publish through your columns a recipe for making cucumber pickles that will be of good color and crisp when taken from jar or bottle (I prefer the sweet pickle); also one for mixed pickle.—Subscriber, Modesto.

Sweet Pickles.—To 500 small cucumbers allow 3 quarts cider vinegar, 7 ounces mixed pickle spice (or 2 ounces each cinnamon, allspice, cloves and a few small peppers), 3 pounds sugar, light brown or white. Let cucumbers stand in salt water overnight. Put cucumbers together with spices and sugar into cold vinegar. Heat and boil two or three minutes. Pack tightly in jars, fill with boiling vinegar and seal. If vinegar is too strong a quart of water may be added.

Mixed Sweet Pickles.—Put equal quantities cauliflower, onions and little cucumbers in brine for a week, each vegetable separate. Drain off brine and put vegetables in layers in kettle. Make syrup of 1 quart vinegar, 2 pounds brown sugar, ¼ teaspoon black pepper, 1 large onion, cut fine, 1 small pepper. Pour this syrup over the vegetables, bring to a boil and fill jars with them, putting into each jar a small piece of red pepper, a piece of green pepper, 2 bits of lemon, 2 teaspoons celery seed, 1 teaspoon coriander seed and ½ teaspoon mustard seed. Seal cans at once.

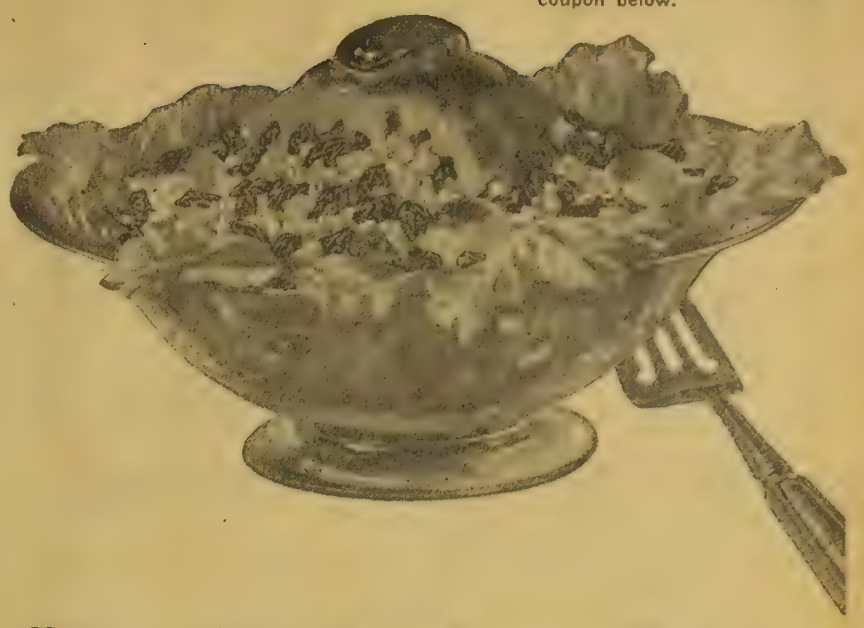
Mixed Mustard Pickles.—Place in brine made in proportion of ½ cup salt to 1 quart water and let stand over night: 2 pints small cucumbers, 1 pint small onions, 1 cup string beans (string and break as for cooking), 3 chopped green peppers, 3 chopped red peppers, 1 pint small green tomatoes cut in half, 1 pint cauliflower broken in small pieces. Freshen in clear water, scald in vinegar and water equal parts, sufficient to cover.

Make mustard dressing of 1 quart vinegar, 4 tablespoons flour, 1 cup sugar, 3 tablespoons powdered mustard, ½ tablespoon celery seed. Rub dry ingredients together, heat vinegar to boiling and add gradually, working into fine paste. Cook in double boiler till

(Continued on Page 42.)

FREE

A valuable book, "Sun-Maid Recipes," will be sent free to those who mail the coupon below.



Rosy Cheeks From Raisins

Certain foods, madam, bring the good looks of good health, due to the **food-iron** *they contain. This luscious raisin salad is one of them*

Raisin Salad

1 cup Sun-Maid Seeded Raisins
¼ cup lemon juice
2 cups chopped apples or pears
2 cups coarsely shredded lettuce
1 cup cream mayonnaise

Wash and dry the raisins, add to the apples and lemon juice. Line bowl or plates with shredded lettuce, pile raisins and apples in center, cover with mayonnaise; serve with Neufchatel cheese balls and garnish top with small pieces of red, tart jelly. Shredded lettuce is a matter of taste. It will go farther and decorates better if shredded.

Send for 97 other "Beauty" Recipes

Don't fail to send the coupon for 97 other "beauty" recipes. Raisins lend charm and healthfulness to many other foods, also increasing their nutrition. The book is worth while and is free, so send for your copy now.

There's more than merely flavor in the luscious raisin foods that we suggest.

There's food-iron—an essential to good health.

Without your necessary supply of iron in the blood you are paler than you should be to be pretty.

The bloom of youth which shows on young girls' and children's cheeks is evidence of that proper supply of iron. It is the **true beauty**—the good looks of **good health**—and there's no reason why all women shouldn't have it.

Serve raisins frequently in salads and desserts—in puddings, bread, pie, cakes, rolls, etc. Stewed raisins is a luscious breakfast dish and one of the most healthful known. Great sanitariums, like that at Battle Creek, Michigan, prescribe them for anemic patients.

The raisin is also slightly laxative, which helps to keep complexions clear.

* * * *

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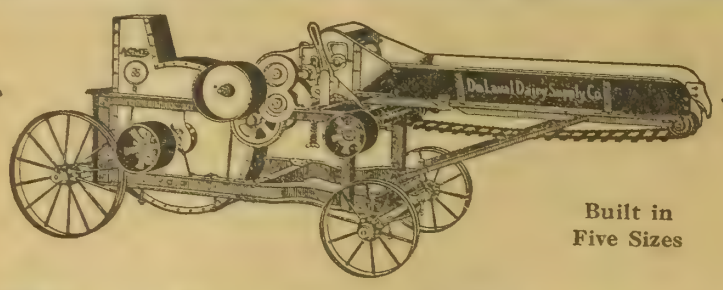

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Will Put Your Herd in Line With the Leaders

More good herds are headed by sons of KING KORNDYKE PONTIAC 20TH, the $12,000.00 son of Miss Valley Mead De Kol Walker, than by the sons of any other sire yet developed in California, and among them is the $41,000.00 bull King Korndyke Pontiac Acme, heading the high class herd owned by Anita M. Baldwin, Santa Anita, California.

Practically my entire herd of females is made up of daughters of KING KORNDYKE PONTIAC 20TH, heifers yet to drop their first calves, all of which I expect to develop fully.

I have for sale two high class sons of KING KORNDYKE PONTIAC 20TH that I consider good enough to head herds of high class registered females, and they are priced well within their value.

KING KORNDYKE PONTIAC FOBES MONA 316441
Born December 5, 1919

Sire: KING KORNDYKE PONTIAC 20TH.

Dam: MONA FOBES, 863.96 lbs. butter from 22,733.7 lbs. milk in 305 days, carrying a calf 231 days. She also made 30.12 lbs. butter from 514 lbs. milk in 7 days. She is a daughter of the well known 30 lb. bull Mutual Fobes Longfield De Kol, and is out of a daughter of Sir Ormsby Burke Segis, one of the best proven sons of King Segis. Second dam a 22 lb. cow, third dam with 795.46 lbs. butter in one year and 26.41 lbs. in 7 days at 10 years of age.

SIR PONTIAC SKYLARK ORMSBY 330700
Born January 8, 1920

Sire: KING KORNDYKE PONTIAC 20TH.

Dam: SIR SKYLARK ORMSBY HENGERVELD PET 2ND, 32.01 lbs. butter from 621.6 lbs. milk in 7 days, and she made 30.33 lbs. butter from 512.1 lbs. milk in 7 days at her previous freshening. She is by King Pontiac Netherland Segis, one of the good proven sons of King of the Pontiacs, and is out of a half sister to the noted twice 34 lb. cow Gerben Abbekerk Maid.

Both of these bulls are excellent individuals, well marked, and ready for service. If you want one of them act promptly as they are priced to sell.

W. J. Higdon **Tulare, Cal.**

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Holstein Sale Season Closes Strong

The spring and summer sale season came to a close June 29 when the Gotshall and Magruder herd of registered Holsteins was dispersed. Few sales of the season have furnished more convincing proof of the stability of the Holstein business in this state and none have been held which at the close appeared to leave so many buyers without cattle. A remarkable feature was the fact that though 13 buyers appear in the sale list, one man, F. L. Hogue of Santa Barbara, secured the bulk of the offering, taking 65 head. Mr. Hogue, who is a large land owner, is developing a new property in Stanislaus County where he plans to install his newly purchased cattle. The fact that he was able to select such a large number of the catalogued lots in no way indicates a lack of buyers in attendance. As a matter of fact, a large crowd was present and furnished plenty of competition on nearly every animal up to their limits, and it is known that at the close of the sale several would-be buyers for as many as 30 head went home without cows.

Eighty-three catalogued lots from the Gotshall and Magruder herd averaged $405; nine head from the W. A. Walker herd made $288, and 92 head of the catalogued lots, many of which were young, made a general average of $394.

The $1,000 mark was reached but three times and passed but once. Moxee Lucy, a three year old granddaughter of Sir Johanna Ruth Fayne, topped the sale, going to Chase Bros. of Escalon, who were persistent bidders on nearly all of the better things. One of the real bargains of the sale was the three year old daughter of Sir Aaggie De Kol Acme, Jane Creamelle De Kol Acme, that went to W. A. Walker for an even thousand. Mr. Hogue secured a real cow in the 25.69 pound Josie De Kol Fobes Tritomia 2d, that fell to his bid of $1,000.

One of the most critical buyers of the sale was Noel Negely, Escalon, formerly in the dairy division of the United States department of agriculture. Mr. Negely selected five head.

Horace Hill, Jr., owner of the Toyon Farm, selected a seven months old daughter of Sir Aaggie Mead at $400.

The sale marked the closing up of the affairs of the Gotshall and Magruder herd and it is understood that a new herd will be established under the name of Gotshall-Magruder and will be conducted under the personal direction of A. R. Magruder.

The sale was managed by C. L. Hughes of the California Breeders Sales and Pedigree Company and was a splendid closing of the most successful season the sales organization has had. Ben A. Rhoades of Los Angeles was on the block and John A. Davis of Manteca was in the ring.

The sale list follows:

1, Josie De Kol Fobes Tritomia 2d, Nov. 1915, 4½ yr., 25.69 lbs.; F. L. Hogue, Santa Barbara, $1,000.
2, Karlray Josie Mead, Aug. 1920; F. L. Hogue, $400.
3, Korndyke Daisy Segis, Dec. 1916, 21.04 lbs.; F. L. Hogue, $650.
4, Karlray Korndyke Colantha, Aug. 1920, F. L. Hogue, $375.
5, Jane Creamelle De Kol Acme, Feb. 1918, 17.76 lbs.; W. A. Walker, Ripon, $1,000.
6, Clothilde De Kol Mead, May, 1919; F. L. Hogue, $775.
7, Boweda Segis, Nov., 1916; F. L. Hogue, $900.
9, It Tola, May, 1918; F. L. Hogue, $825.
10, Mooresta Ormsby of Vina, Dec., 1913, 25.20 lbs.; F. L. Hogue, $800.
11, Moorland Miss Mooresta, Aug., 1917; F. L. Hogue, $700.
12, Moorland Mooresta Ormsby, Dec., 1920; F. L. Hogue, $325.
13, Moorland Mooresta Colantha, Aug., 1918; F. L. Hogue, $550.
14, Moorland Mooresta Fobes, April, 1921; F. L. Hogue, $125.
15, Moorland Mooresta Mead, Feb., 1920; F. L. Hogue, $350.
16, Moorland Lady Colantha, Sept., 1917, 3 yrs., 25.79 lbs.; F. L. Hogue, $400.
17, Moorland Lady Cristeria, Oct., 1920; F. L. Hogue, $200.
18, Moorland Lady Linden, Oct., 1920; F. L. Hogue, $200.
19, Moorland Mabel Haskins, Jan., 1915, 4 yrs., 21.32 lbs.; F. L. Hogue, $825.
20, Spring Farm Cornucopia Ormsby, May, 1915, 5½ yrs., 20.63 lbs.; F. L. Hogue, $775.
21, Karlray Ormsby Valdessa, Oct., 1918; F. L. Hogue, $550.
22, Karlray Ormsby Mead, Mar., 1921; F. L. Hogue, $225.
23, Karlray Hartog Mead, Mar., 1920; F. L. Hogue, $425.
24, Segis Fayne Clara, Mar., 1912, 6 yrs., 21.12 lbs.; Chase Bros., Escalon, $375.
25, Cascade Lucy, Feb., 1916, 643.33 lbs. 357 days; Chase Bros., $600.
26, Moxee Lucy, Mar., 1918, 21 mos., 406.87 lbs. 305 days; Chase Bros., $1,025.
27, Karlray Cascade Hengerveld, Mar., 1921; John Lorieu, Ripon, $350.
28, Cascade Queen Juanita, Feb., 1915; F. L. Hogue, $875.
29, Karlray Cascade Juanita, Dec., 1920; Chase Bros., $325.
30, Albino De Kol Hartog 3d., Jan., 1912, 21.06 lbs.; F. L. Hogue, $310.
32, Karlray Beryl Colantha, Oct., 1920; J. E. Headley, Ripon, $275.
35, Dominita Bonnie De Kol 4th, July, 1912, 21.36 lbs.; J. G. Jamison, San Jose, $385.
36, Dominita Colantha De Kol 2d, April, 1914, 28.74 lbs.; F. L. Nahar, Merced, $535.
37, Karlray Dominita Ormsby, Dec., 1920; F. L. Hogue, $150.
38, Emily Johanna of Masterpiece, Dec., 1916, 21.68 lbs.; F. L. Hogue, $400.
40, Karlray Hengerveld Ormsby, Jan., 1919; F. L. Hogue, $425.
41, Hollywood Lilth Sita De Kol, June, 1915; F. L. Hogue, $400.
43, Johanna Neeltje De Kol, April, 1912, 24.37 lbs.; F. L. Hogue, $275.
44, Klondyke Beauty 2d, Mar., 1913, 26.74 lbs.; F. L. Hogue, $310.
45, Karlray Klondyke Mead, Dec., 1920; F. L. Hogue, $200.
46, Merci Pauline Burke Walker, April, 1919; F. L. Hogue, $550.
47, Karlray Aaggie Colantha, Nov., 1918; F. L. Hogue, $335.
48, Karlray Aaggie Ormsby, Dec., 1920; R. Stevens, Stockton, $150.
49, Moorland Ansella Colantha, Mar., 1916; F. L. Hogue, $325.
50, Moorland Ansella Mead, April, 1919; F. L. Hogue, $300.
51, Moorland Ansella Ormsby, Jan., 1921; F. L. Hogue, $125.
52, Karlray Belle Colantha, July, 1919; F. L. Hogue, $450.
53, Karlray Bonnie Colantha, July, 1920; F. L. Hogue, $200.
54, Moorland Colantha Belle Fobes, Mar., 1921; J. F. Nahar, $85.
55, Creamcup Pontiac Consort Pet, Dec., 1913; F. L. Hogue, $385.
57, Empress Bergsma De Kol, Jan., 1915; Chase Bros., $485.
58, Karlray Foxy Mead., Aug., 1919; F. L. Hogue, $475.
59, Frenesta Pietertje Korndyke, June, 1915; Noel Negley, Escalon, $525.
60, Karlray Gerben Colantha, June, 1919; Chase Bros., $375.
61, Karlray Gerben Mead, April, 1919; Chase Bros., $400.
62, Karlray Hengerveld Fobes, Jan., 1921; Chase Bros., $150.
63, Karlray Hengerveld Mead, May, 1919; Chase Bros., $375.
64, Karlray Korndyke Mead, Dec., 1919; F. L. Hogue, $325.
65, Kounias Bonnie De Kol, Jan., 1918; F. L. Hogue, $175.
66, Kounias Colantha De Kol Ormsby, April, 1918; F. L. Hogue, $475.
67, Kounias Ulrika Fayne, Nov., 1918; F. L. Hogue, $400.
68, Lady Verna Walker De Kol, June, 1917; Noel Negeley, $250.
69, Mamie Idlewild De Kol, July, 1913; Chase Bros., $385.
70, Karlray May Mead, June, 1920; F. L. Hogue, $375.
71, Karlray May Ormsby, Mar., 1918; Chase Bros., $800.
72, Meadow Lea Gertje De Kol, April, 1918; J. E. Headley, Ripon, $400.
73, Meadow Lea Ona De Kol, Dec., 1916; F. L. Hogue, $375.
75, Penopa Lockhart 2d, July, 1915, 3 yrs., 23.46 lbs. F. L. Hogue, $275.
76, Karlray Penopa Mead, Dec., 1920; F. L. Hogue, $225.
77, Pride Pontiac Fobes, Jan., 1916; F. L. Hogue, $550.
78, Princess Pauline Sadie Vale, Feb., 1917; F. L. Hogue, $250.
79, Karlray Queen Colantha, Oct., F. L. Hogue, $175.
80, Karlray Ruth Haskins, Dec., 1919; F. L. Hogue, $300.
81, Serena Hengerveld Pontiac, Sept., 1916; F. L. Hogue, $375.
82, Toyon Rag Apple Colantha, Sept., 1919; Noel Nageley, $500.
83, True Hope Pontiac De Vries, Jan., 1918; F. L. Hogue, $425.
84, Karlray Veeman Mead, Dec., 1919; Noel Negeley, $300.
85, Virgina Alcartra Osmsby, Aug., 1917; F. L. Hogue, $335.
86, Karlray Virginia Belle, Feb., 1921; F. L. Hogue, $100.
87, Karlray Walker Chimacum, April, 1920; F. L. Hogue, $450.
88, Zoe Headlight De Kol, Jan., 1910; F. L. Hogue, $100.

BULLS

89, Moorland King Haskins, Dec., 1920; Chase Bros., $200.
90, Karlray Linden Hengerveld, Nov., 1920; F. L. Hogue, $90.
91, Karlray Fobes Hengerveld, Jan., 1921; J. P. Cundell, Stockton, $75.

Consigned by W. A. Walker, Ripon

92, 1920 Daughter of Moxie Aaggie Bracelet De Kol, H. L. Hill, Jr., San Francisco, $400.
93, Una Estrella De Kol 4th, Sept., 1915; F. L. Hogue, $300.
94, Holland Lady Hartog, April, 1913; Z. T. Jamison, San Jose, $300.
95, Mosswood Hartog Dutch, April, 1920; Noel Negeley, $285.
96, Maud Onyx Hengerveld; F. L. Hogue, $250.
97, Aafke Ignaro De Kol, Jan., 1916; J. F. Nahar, $385.
98, Eva Colantha of Yuba 2d, 1914; F. L. Hogue, $300.
99, Alice Segis Perfection, March, 1912; F. L. Hogue, $225.
100, Bessie Pearl Fobes, April, 1916; Leslie F. Miller, Ripon, $155.

Livestock News Notes

In the last monthly news letter of the western office of the dairy division of the United States department of agriculture a grade Jersey cow owned by H. L. Wakeham of Santa Ana is credited with having produced 511.75 pounds butter fat in 151 days.

At a special meeting of the California Holstein-Friesian Association, held at Stockton the evening of June 28, it was decided to subscribe $1,000 toward the $25,000 asked by the management of the California National Livestock Show, which is being planned for this fall. Under the plan adopted for financing the show the livestock interests propose to raise $100,000 and of that amount the Holstein breeders are called upon for $25,000.

The summer sale of Berkshires from the Grape Wild Farm herd scheduled for June 28 proved a considerable disappointment. Owing to harvest being in full swing few farmer buyers attended and the small crowd of breeders and others could not absorb the entire offering. An average of $68.75 was made on the gilts sold.

The Sutter County farm bureau has decided upon a series of fat hog auctions to be held this fall, the first taking place in October. Swine raisers in Butte and Yuba Counties will be asked to consign to the sales.

Hogs sold from $10 to $10.30 in auctions at Tulare, Visalia, Hanford and McFarland June 21-24. In each sale preference was given the light handy weights. The top lot averaged 163 pounds.

Miss Valley Mead De Kol Walker, the famous dam of King Korndyke Pontiac 20th, Sir Prince Aaggie Mead and Sir Aaggie De Kol Mead, after completing the splendid 305 day record of 1,006.24 pounds butter from 22,148.4 pounds milk, has freshened again after a short rest, dropping a fine heifer calf by Sir Pietertje Ormsby Mercedes 43d. She is again on test and in seven days made 33.14 pounds butter from 725.4 pounds milk, and in 30 days 133.45 pounds butter from 3,021.4 pounds milk, with 108.7 pounds for her best day. She is being continued on yearly test again by her owners, A. W. Morris & Sons.

A number of excellent official records have recently been made in the high class herd of registered Holsteins owned by Robt. N. Clapp of Nuevo at his farm, Sycamore Acres. The famous cow, Gerben Abbekerk Maid, now in her tenth year, with ten living sons and daughters, made 852.3 pounds milk in seven days and 3,460.7 pounds in 30 days, best day 124.6 pounds. She is being continued on yearly test. Her junior four year old daughter, Abbekerk Pontiac, made 25.59 pounds butter from 446.9 pounds milk in seven days. Four more daughters of the good bull King Pontiac Netherland Segis 3d, son of Gerben Abbekerk Maid, completed excellent records. Rosamaines Rowena, a junior three year old, made 28.79 pounds butter from 551.2 pounds milk in seven days, and 115.81 pounds butter from 2,398.8 pounds milk in 30 days. Aralia Pontiac as a four year old made 26.25 pounds butter from 536.5 pounds milk in seven days. Rosamaines May Korndyke at two years four months made 21.12 pounds butter in seven days, and her full sister, Rosamaines Korndyke Beauty, has lately made one of the greatest heifer records ever made in California. Freshening at one year and ten months she made 22.24 pounds butter from 575.1 pounds milk in seven days, 88.27 pounds butter from 2,368.7 pounds milk in 30 days, and continued on test made 160.46 pounds butter from 4,525.1 pounds milk in 30 days. Mr. Clapp recently added another high class lot of females to his herd and now owns one of America's strongest herds in the blood of King Segis.

One of the highest producing small herds of registered Holsteins in California at present is owned by W. A. Walker, Ripon, where some especially noteworthy yearly records are in process of making, with two already completed. A daughter of Lad Legend of Kakenstein lately finished with right around 940 lbs. butter in 365 days, and a daughter of Arcady Pontiac Wayne Hengerveld finished with over 800 pounds in 305 days. One of the promising records in the herd at present is being made by Belle Faskie Hengerveld De Kol 2nd, who was grand champion at the 1918 California State Fair. She is milking right up at the 100 pounds per day mark and her chances look very promising. She is the dam of the great Freeman & Edwards heifer at Modesto, Belle Faskie De Kol Witkop, that made over 800 pounds butter and over 20,000 pounds milk as a first calf junior two year old. Mr. Walker has at the head of his herd the richly bred young bull Dutch Vina, sired by the Freeman & Edwards bull Segis Pontiac De Kol Dutch, and out of a dam that recently completed a year with over 1,150 pounds butter from 29,009 pounds milk.

One of the sensational Holstein records of the year is under way in the herd of John Saxer, Modesto, where the senior three year old Moorland Colantha Rose has milked over 18,000 pounds in 182 days and has over 700 pounds butter to her credit in the same time. She made over 126 pounds butter in her sixth month. This heifer has been fed, cared for and milked throughout the entire time by Olga Saxer, 17 year old daughter of Mr. Saxer, who is handling her in this test in a manner that might well be the envy of some of the best men handling test cows. Moorland Colantha Rose is an exceptionally good individual with plenty of size and has a correspondingly good pedigree, being a granddaughter of Colantha Johanna Lad.

Manteca Lyons Jewel Glista, a first calf daughter of Supreme Glista Pietje, recently made an official record of 13.79 pounds butter from 338.3 pounds milk in seven days in the registered Holstein herd owned by J. W. Scudder, Escalon, her test coming during one of the hottest spells of the season.

Wm. F. Wattson, El Cerrito, who has been an occasional purchaser in a number of the registered Holstein sales during the past two years, is securing a nice heifer increase in his herd. Manteca Segis Alban De Kol, purchased from Henderson Company, has contributed two good heifers to the herd, while Laconner Netherland Pontiac Girl, secured from Carnation Stock Farms in the last Guaranty Sale at Sacramento, recently dropped a beautiful heifer calf by the famous bull Matador Segis Walker.

STATE FAIR PREMIUM LIST

The premium list for the 1921 California state fair, which is to be held at Sacramento, September 3 to 11, inclusive, is now being mailed to exhibitors and others throughout the state and elsewhere.

In the book attention is called by President H. A. Jastro and Secretary Chas. W. Paine of the board of directors of the state agricultural society to the magnitude and variety of exhibits of the 1921 fair which will far surpass any previous exhibition. The principal object of the fair, as explained by them, is to exhibit the resources and products of the state and stimulate Californians to greater efforts for the improvement and development of the state's agricultural, horticultural, viticultural, livestock, mining and mechanical resources.

The list totals approximately $100,000, which will be given as a reward for those who have produced something better for the benefit of the people. Several new classes have been entered in the livestock sections and bigger premiums are offered as an incentive to exhibitors to enter their best stock in this year's show. Student judging of cattle, sheep dog trials, sheep shearing contests, reclassification of milk goat entries, additional prizes in the draft horse classes and improvements in other departments bid fair to make this year's exposition one of the largest and most diversified ever held.

Copies of the premium list will be mailed to anyone upon request to Secretary Paine.

FIVE DUROC BEAUTIES

This group of junior yearling Duroc gilts is a part of the litter farrowed last year by High Lady Sensation, the gilt for which W. H. Dupee paid Winsor Ranch $2,000. They are by Great Sensation 3rd. At 13 months of age they averaged a little over 500 pounds and were not fat.

This litter and the dam were a part of the herd sold by W. H. Dupee to the Sierra Vista Ranch at Perris, and these juniors will be a part of the fine show herd being fitted by Sierra Vista.

TEHAMA COUNTY FARM BUREAU MEETING

Bowman home department, July 12, afternoon; Dairyville, 13; Antelope, 14; Bend, 15; Corning, 21; directors meeting, Red Bluff, 23; Los Molinos, 25; Bowman, 30.

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They Are Moderately Priced

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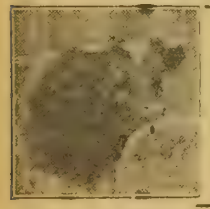

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Fancie's Orion King assisted by Uneeda Orion B, 2nd prize aged boar at State Fair, 1920, and grand champion at Glenn County Fair, 1919, and Valley View's Sensation, 3rd prize junior boar pig and litter mate to 1st prize and reserve champion at State Fair, 1920, and a wonderful string of prize winning sows and gilts, including Miss Sensation, 1st sow pig and reserve champion at State Fair

C. C. ELLIS Exeter, Cal.

COW TESTING ASSOCIATIONS IN ARIZONA

By M. E. Bemis

EVIDENCE that Arizona dairymen are "coming alive" is apparent every day. Pima County dairymen have a cow testing association that has been in operation for some months. Following the opening of the Tempe condensed milk plant there has been organized in the Tempe district an association with 29 dairymen and more than 600 cows. Under the plans of this association the tester spends one day of each month with each member of the association, the milk from each cow is weighed and recorded and a sample of each milking taken and tested. From these weights and tests the records of the cows are computed. Other records, such as the age of the cow, time of freshening, breed, etc., are kept, so that at the end of the year each member of the association has a fairly complete record of each cow in his herd.

Cow testing associations are not new in the Salt River Valley although none have been active during the past four years. The advantage of associations of this kind has been proved times without number. It is the poor cows that hold back the herd from making a profit. The record of the year's test, or frequently less, enables the owner to cull out the unprofitable cows. It is so plainly obvious that the cost of feeding and caring for the poor cow is so near the cost of the good cow that it would seem no argument ought to be necessary to convince any dairyman that it is decidedly to his interest to affiliate with an association.

Some dairymen appear to be of the opinion that they lose when a cow is proved to be poor. In a way this is true for the selling value of a cow is decreased if her production is low, but on the other hand the value is increased if the production is high. In the average of a herd there would be almost sure to be a greater gain from increased valuation than loss from decreased valuation. In any herd where this would not hold true the loss from milking so unprofitable a herd would be so great as to make it a losing game anyway.

We hope to see a cow testing association in every dairy community in Arizona before the end of 1921.

CALIFORNIA NATIONAL

C. R. Thomas has been chosen manager of the California National Livestock Show to be held in San Francisco, October 22-30. C. N. Hawkins of Hollister is president. We hope this is the beginning of a permanent livestock show for California.

The livestock end of the state fair has been growing in importance and has been a credit to the state. The shows formerly held at San Francisco and at Los Angeles have likewise been successful in bringing together a fine representation of California's good breeding, but neither of the two big towns of the state have yet succeeded in putting their shows on a permanent basis.

NEW RULES FOR INTERSTATE SHIPMENT

Regulations governing interstate movement of livestock, which became effective on and after July 1, 1921, and which supersede previous regulations on this subject, have been published by the United States department of agriculture. For purposes of identification these regulations are designated as B. A. I. (bureau of animal industry) Order 273. The regulations published in the circular prescribe for the inspection, disinfection, certification, treatment, handling, and method and manner of delivery and shipment of livestock which is subject to interstate commerce. The enforcement of the regulations is assigned to the secretary of agriculture by acts of congress. Their purpose is to control the

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We have issued a convenient little book for the keeping of breeding dates of cattle, hoping to aid the breeder and cattle owner in maintaining accurate records. We will gladly mail you a copy free if you request it. A postal will do.

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Breed your mares to Shire Stallions, good Shire Geldings are in demand. Get some registered Shire Mares.

Shire owners, record colts young, fees are double after one year old. Prepare Shires for fall shows, premiums are very liberal this year. For information on Shires write

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As we have sold out of bred sows and gilts, we are now offering big growthy fall pigs, either sex, at attractive prices.

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universally recognized as the SUPERIOR breed for economical pork production. Send for literature and information

Southwestern Berkshire Congress
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RAISE GUINEA PIGS FOR US.

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DR. J. A. ROBERTS LABORATORIES
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interstate shipment of livestock and prevent the spread of diseases.

Included in the publication are acts of congress relating to this subject, general provisions, and regulations to prevent the spread of the following diseases: Splenetic, southern, or Texas fever in cattle; scabies in cattle and sheep; dourine in horses and asses; hog cholera and swine plague, and tuberculosis in cattle.

Why Build a Silo?

NOT only will the silo save 40 per cent of the corn crop from waste and deterioration, but it puts it in better condition for feeding purposes. One acre of corn preserved in the form of silage has a feeding value equivalent to that of one and one-half to two acres preserved in the form of shock corn. In seasons where the grain fails to develop the ratio in favor of silage may run as high as one to five.

Silage has no equal in reducing feed costs. During the last few years all feeding tests with beef and dairy cattle have shown that where silage is used as a major portion of the ration, beef and milk are produced most cheaply. During the winter 1917-18, the Kansas experiment station fed one lot of baby beeves corn, linseed meal and alfalfa hay. Another lot was fed corn, linseed meal, alfalfa hay and silage. In the latter lot the cost of gains was $1.20 a hundred cheaper than in the former, and it sold on the market at 25 cents a hundred more.

During the last ten years, due largely to the expense of winter maintenance of the cow herd, the number of beef cattle on Kansas farms has decreased 50 per cent. In view of this fact it is significant that the Kansas experiment station kept mature cows in good breeding condition during the winter 1917-18 on a ration chiefly of silage and wheat straw at a cost of five cents a day.

The dairyman has used silage longer than the cattle feeder though it is equally valuable for both. In a report of the cow testing associations of Minnesota covering records of 5,500 cows it is shown that the cows receiving silage produced 1,275 pounds more milk per cow and 51 pounds more butterfat than did those not fed silage.

In a farm management contest conducted by the Wisconsin agricultural college, records of the business were secured on 531 average farms for two successive years. The 390 farms which had silos made an average net profit of $875 per farm, while the 141 without silos made an average net profit of $535 per farm per year. It is pointed out that the difference, or $340 per farm, is enough to pay for a good silo once a year.

Silage alone is not a balanced ration. For the best results it should be supplemented with a small amount of clover, alfalfa, cowpea hay, or linseed or cottonseed meal. This is particularly important in the case of calves and young stock. Silage and alfalfa hay make the cheapest ration obtainable for feeding a dairy cow. One giving less than a gallon and a half of milk daily needs nothing else.

The general advantages of the silo and silage may be summarized as follows:

The silo reduces the amount of labor required to feed livestock during the winter, also in preparing the ground for next year's crop.

More livestock may be carried on a given acreage when crops are fed in the form of silage.

Silage insures the utilization of practically the whole corn or sorghum plant. Feeding in any other forms results in the loss of from 20 to 40 per cent of the plant.

The silo is an economical means of storing feed. A cubic foot of hay contains approximately four pounds of dry matter while a cubic foot of silage contains ten pounds.

The silo preserves the succulence of the plant ensiled and this has a beneficial effect upon the digestive organs.

The silo preserves the palatability of the plant ensiled and the animal will consume more roughage than when fed in any other form, thus resulting in a saving of other feeds.

The use of silage lessens the costs and adds finish in fattening cattle.

Silage insures a succulent feed for any season of the year.

Silage eliminates the bother of cornstalks in handling manure.

Manure is more easily preserved and less plant food is lost when crops are fed in the form of silage. — Kansas College of Agriculture.

BLOAT

Other plants may cause bloating, but the leguminosae are the most dangerous in this respect. In mild cases it is not necessary to puncture the stomach as the administration of medicines which absorb the gases and allay fermentation suffice to bring about a normal condition. Kneading and massaging the left flank for 10 or 15 minutes frequently terminates mild cases. In cases where the bloated animal is in distress from the pressure produced on the internal organs, a puncture should be made immediately in order in many cases to save the animal's life.

The puncturing is done with more assurance of safety by means of a trochar, a short, sharply pointed rod enclosed in a sheath which permits only the point of the rod to project. The puncture is made at a point equidistant from the last rib, the hip bone, and laterally projecting portions of the backbone in the region of the loins.

To insert the instrument it is more convenient to make a slit through the skin at the point of puncture. Then take the instrument and with the point directed toward the right elbow give the top of it a sharp blow with the palm of the hand. The trochar is then withdrawn from the sheath or tube, through which the gases escape. The operation may be repeated if gases again accumulate.—State Department of Agriculture.

GLENN CALF CLUB

The Holstein breeders of Glenn County, not to be outdone by the Jersey breeders, have a calf club of their own breed, in which 12 boys and girls have each selected a pure bred Holstein calf of high quality which they will take care of and develop as best they can under the directions of the county club leader. Eleven of these 12 calves are heifers, the twelfth is a bull. Two were secured within the county and the remaining ten have been imported for the club work.

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There never was such a remarkable reduction in price as this. Here is a practical power and light plant which is admittedly superior in every sense.

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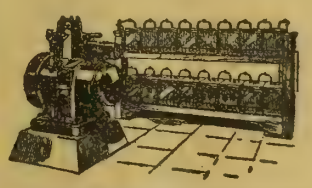
Precedent has been swept aside in meeting what we consider our obligation to the American farmer—giving him the benefits of our tremendous purchasing power, sound engineering and manufacturing economies in this electric plant highest in quality yet lowest in price.

Willys Light is an established success. One exclusive superiority alone, the Willys-Knight sleeve-valve engine, is of itself a sufficient reason for buying *only* Willys Light. In addition it has fifty distinct advantages.

Thousands of homes where electric current is not available will take advantage of this opportunity *now*. See your Willys Light dealer —there is one near you.



The famous air-cooled Willys-Knight Engine burns kerosene, cranks itself, stops automatically, and "improves with use".

*The Willys-Knight sleeve-valve engine

Every Home Can Now Have Electricity

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JUNIOR

$295

Here is the "eighth wonder" of the farm power and light world—Willys Light Junior.

It is large enough for lights and small power uses, and more important—it is low enough in cost for every purse and person.

Neat, compact, made with the high quality which characterizes *all* Willys Light products —its very name is a pledge of satisfaction with nation-wide service behind it. It has the wonderful Auto-Lite engine generator, and long-lived dependable battery.

Could there be any greater evidence of our intention to place our entire resources and production capacity at the disposal of every farm home?

Farms that were formerly denied electricity will glisten with safe, clean light at the snap of a switch.

Ask your Willys Light dealer about Willys Light Junior, or write for booklet.

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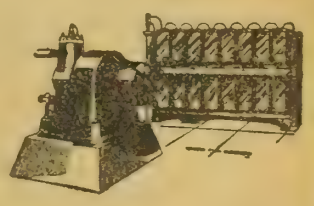

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POULTRY

S. C. White Leghorn Baby Chicks from the heaviest laying (Hoganized) stock. Safe delivery live vigorous chicks guaranteed. No money in advance; pay on delivery. Price from July 15 to August 31, $4.00 per 25, $8.00 per 50, $15.00 per 100. Special prices 500 and 1000 lots. Largest electric hatchery in the world. Established 1898. MUST HATCH INCUBATOR COMPANY, 438 Seventh Street, Petaluma, California.

Fine Young King Pigeons $3 a pair. Guineas $5 a pair. Wyandotte, Partridge Rock and Leghorn eggs $3 a setting. Are disposing of some of our breeding geese; offering them at a bargain price. Yearlings $15 a pair, 2 year old birds $20 a pair. All bred from imported stock. Send for catalog. Paradise Valley Poultry Ranch, National City, California.

It's no wonder so many poultry raisers make a failure of the business. Without any knowledge of raising poultry people will branch out expecting to make a success. By putting in practice the valuable contents of POULTRY FOR PROFIT, $1.00 postpaid, success is assured in the poultry business. Cultivator Publishing Company, Los Angeles, California.

Eggs from purebred Mammoth Bronze Turkeys, $1.00 each, or $10.00 per 11. Eggs from purebred Buff Orpingtons $3.00 per setting of 15. Incubator lots furnished reasonable. Mrs. M. L. Trewhitt, Route B, Box 47, Hanford, California.

Order Chicks Now for delivery any time after Aug. 1st. Broilers pay, pullets make good layers. R. I. Reds, White Leghorns, Barred Rocks. Safe arrival guaranteed. Write for circular. Stubbe Poultry Ranch & Hatchery, P. O. Box 67, Palo Alto, California.

Baby Chicks from my carefully selected, heavy laying strain of pure bred S. C. White Leghorns. Am booking orders now for August and September delivery. Write for prices. J. R. Heinrich Poultry Yards, Arroyo Grande, Cal.

Barred Plymouth Rocks — "Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Vodden, Los Gatos, California.

White Leghorn Baby Chix from Petaluma's heaviest producing stock. We guarantee safe arrival. Literature on request. Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

White Wyandotte Cockerels for Sale—Extra fine for the price. Write at once. J. W. Nicholson, Wasco, California.

Success in business is attained by experience and knowledge. The poultry business can be made to pay by following the teachings and information contained in POULTRY FOR PROFIT, $1.00 postpaid. Cultivator Publishing Company, Los Angeles, California.

CATTLE

Guernseys — Grape Wild Farms—Berkshires—Young bulls, from calf age up to 16 months old, of May Rose breeding and out of A. R. cows. Bred sows and gilts, service boars and pigs of both sexes for sale. Grape Wild Farms, Escalon, California. A. B. Humphrey, Proprietor.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Berylwood Stock Farm—Breeders of registered Holstein cattle and Duroc-Jersey swine. Every cow an A. R. O. and T. B. tested. Bulls and females for sale. J. W. Snodgrass, Hueneme, California.

Yearly Record Holsteins—Bulls from 500 to 1,000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Some Choice registered Holstein heifers and bulls of serviceable age for sale. J. W Scudder. Escalon, California.

Winsor Ranch Jerseys—Bull calves with production behind them, at reasonable prices. BONITA, CALIFORNIA.

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1-Ply $1.25; 2-Ply $1.60; 3-Ply $2.20.
Best Bungalow Paint.....$2.25 a gal.
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Prompt Deliveries on Mail Orders.
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Large Number of Choice Bronze Toms and hens, also geese and herding Collie Dogs. Shipped from St. Helena and San Miguel. John G. Mee, San Miguel.

Bourbon Red Turkeys, Buff Orpingtons. The Ferris Ranch, Reservoir Street, Pomona, California.

LIVESTOCK

For Sale—Registered mare, weight about 1200; sound and gentle; sire Chas. Derby, dam Idol Bell. Apply owner, F. A. DeCray, 125 Ocean View Ave., Santa Cruz, California.

Shorthorns, Shropshires, Berkshires, Shetland Ponies, Bronze Turkeys. W. P. Rocks. Butte City Ranch, Box C, Butte City, Glenn County, California.

TRACTORS

For Sale—Holt 75 with implements. Or exchange part for good dairy cows. C. E. Newman, Chowchilla.

FARM LAND FOR SALE

For Sale—Special bargain, 30 acres in San Fernando Valley, 22 miles from Los Angeles. Nine acres Valencia oranges, 8 acres Eureka lemons, 2 acres grapefruit, all 5 years old; family orchard of apricots, peaches, plums, pears and berries, 9 acres of alfalfa, farm house 4 rooms and bath, chicken house and pens. Ten inch concrete underground pipe; can be irrigated in one day; cheap water; 6 irrigations last year cost $70. Price $1100 per acre. Easy terms. Get this investment NOW for almost the price of unimproved land. Get busy. H. S. Parker, 128 West Broadway, Glendale, California.

CALIFORNIA IRRIGATED LANDS
Irrigation plus California climate eliminates chance in farming. Let us tell you about Safe Farming on Sutter Basin Irrigated Bottom Lands. Write for literature to Land Department, SUTTER BASIN COMPANY, California Fruit Building, SACRAMENTO, or to W. L. White, 509 Balboa Building, SAN FRANCISCO, or to C. D. Saunders, 509 Security Building, LOS ANGELES.

For Sale—960 acre cattle ranch, all under fence with cross fences, plenty of good water, good buildings. Thousands of acres of good free range adjoining, best open range in Southern California. For further particulars address Box 78, SAWTELLE, CALIFORNIA.

For Sale or Exchange—21 acres near Lancaster; fine soil for alfalfa, fruit or hogs; flowing well, oil prospects. $1650. O. P. Smith, 810 Wright & Callender Bldg., Los Angeles.

For Sale—160 acres 8 miles N. E. of North Bend, Oregon, on county road; $2,500.00 cash, or will give terms. For further information address: William M. Brown, 544 Union Street, Salem, Oregon.

Buy Your Farm from owner direct and save money. Any state. "Homeseekers Guide" tells how. Free copy on request. E. F. McCormick, Oakland, California.

For Sale — Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

MISCELLANEOUS

Ship Yoru Hay to Us and receive cash when car is unloaded. PACIFIC GROWERS EXCHANGE, 207 Wholesale Terminal Building, Central Avenue at Seventh, Los Angeles, California; Alex. Thornton, Gordon Davidson.

For Sale—Feed and Grain Sacks. About 4000 sacks in first class condition, cheap. Burr Farm, 26th Street and Downey Road, Los Angeles.

MACHINERY

For Sale 40 rebuilt windmills, tanks, pumps, steel towers, cylinders, rods. Special new 1,000-gallon galv. tanks, $39.25; 2,000, $53.25; 3-in. irrigating pipe, $14.75; 4-in., $18.75; also used pipe. Why pay more? Demmitt, 120 N. Main, L. A.

For Sale—Pomona pump, 28 head, nearly new. Clarence Wagner, Terra Bella, California.

WANTED

Wanted — Men, with rigs preferred, to work spare or all time among ranchers selling for established concern. Good pay and territory to right parties. A. F. Levitt, 5463 Huntington Drive, Los Angeles.

Wanted—To buy in any quantity—baby turkeys, baby ducks. In writing give number, age and price. CALIFORNIA HOTEL FARM COMPANY, 15 North Euclid Ave., Pasadena, California.

Wanted—Second hand No. 44 Killefer Power Lift Subsoiler or other make equally as good. C. E. Davis, Redlands, California.

Beekeepers—Positions wanted with a big apiary by Swiss young men. Write full particulars. Frank Tarno, Elm Loquot, Patterson, California.

Wanted to Rent or lease on shares—Fully equipped dairy ranch. Box 179, Route 1, Burbank.

Wanted—To hear from owner of land for sale. O. K. Hawley, Baldwin, Wisc.

SEEDS AND PLANTS

Reliable Seeds—Ask your dealer or write for our Reliable Seeds and instructive catalog. AGGELER & MUSSER SEED COMPANY, 620 S. Spring Street. Branch —767 S. Central Avenue, Los Angeles, Cal.

R*O*S*E*S—$1.50 per dozen. Ornamental and shade trees, shrubs, palms, vines, plants, etc. Write for catalogue KAVAN NURSERIES, San Bernardino, California.

Sudan Seed—Sow Now. A few grape rootings, 4 kinds. Box 501, Fowler, California.

Pumpkin Seed — Mixed Pumpkin Seed. Good germination. 25c per lb. Aurora Seed Mill, Stockton, California.

CORN HARVESTER

Corn Harvester cuts and piles on harvester or winrows. Man and horse cuts and shocks equal corn binder. Sold in every state. Only $28 with fodder tying attachment. Testimonials and catalog FREE showing picture of Harvester. Process Harvester Co., Salina, Kansas.

FOR LEASE

The State Land Settlement Board offers for rent for a period of three years, 20 to 60 acres of alfalfa land; barns and permanent equipment furnished. Anyone interested correspond with the Superintendent at Delhi.

GOATS

For Sale—Pure Swiss Toggenburgs, does and bucks, from finest milk strains. La Corona Goatery, R. 1-416, El Monte, California.

TREES

Avocados—I have a limited number of fine trees nicely balled and well established from two to six feet in height which I am offering for from two to three and a half dollars each. Fuerte, Linda, Puebla, Sharpless, Ganter and No. 2. Yearling Valencia trees 75c balled and guaranteed. A. R. Rideout, Rideout Heights, Whittier, California.

Have You Gophered Orange Trees? You can save them by inarching. We have the orange seedlings for this purpose. Also 100,000 orange seed-bed trees, both sweet and sour stock. Valencia, Navel and Eureka lemon budded trees. SOUTHLAND NURSERIES, 1941 E. Colorado Street, Phone Colorado 6352, Pasadena.

For Sale—100,000 Sour Orange Seedbed Stock. 10,000 Avocado Seedlings eight inches and up in pots. Also Washington Navel, Valencia Late Orange, and Eureka Lemon Trees. T. J. Walker, First National Bank Building, San Fernando, California.

For Sale — Valencia, Navel, Eureka Lemon, Dancy Tangarine, Rangpur Lime; Supply Company and Tree Performance record buds. One and two years. Cyrus Wilhite Citrus Nurseries, Glendora, California. Phone 303.

For Sale—Grafted walnut trees, also citrus and deciduous trees. Order now for 1922 delivery. Get my prices. Ketscher's Nursery, 1101 E. 4th Street, Santa Ana, California. Phone 572-W.

Avocado Trees—Get your orders in now. Mathers Avocado Nursery, Ventura and Rose Streets, Pasadena, P. O. Box 585. Phone Colorado 6044.

For Sale—5000 Avocado Seedlings. Dr. Stonebrook's Avocado Nursery, 15 N. Raymond Ave., Pasadena, California.

Citrus Nurseries, Murphy Oil Company, East Whittier California. Selected stock for sale; inspection invited.

DUROC-JERSEYS

Weanling Boars and Gilts by Pathfinder Wonder (Great Wonder I Am ex an 800 lb. Pathfinder sow) for $10 each. Bred sows and gilts. Derryfield Farm, Capital National Bank Bldg., Sacramento, California.

Two Mammoth Sensation Jr. Open Gilts, three Ace of Pathfinder twelve weeks old boars, one Orion King Gano sow, all nice animals, for sale cheap. J. M. Alcorn, Fullerton, California.

Greenwood Farm Durocs — Moderate prices on bred gilts and weanling boars. Select individuals. Most popular breeding. H. C. Witherow, Mgr., Live Oak, Sutter County, California.

Boyanna Big Type Durocs — Breeding stock, priced right for sale. Inquiries invited. Satisfaction guaranteed. J. Boyd Harrold, Dixon, California.

High Class Durocs—Two fine early litters, 10 each. Dam 2nd in strong class, Owensmouth. See A. V. Austin, Van Nuys, California.

Winsor Ranch Durocs—The best of stock at reasonable prices. BONITA, CALIFORNIA.

BERKSHIRES

Lark Meadow Berkshires—Bred or open gilts. Bred sows. Prominent blood lines. Geo. A. Stingle, El Monte. BUY A BERKSHIRE BOAR.

Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Calae Orchards, Martinez, California.

POLAND-CHINAS

Lendorris Ranch Polands — Big type Poland Chinas of all ages for sale. The kind that makes weight quickly. Weanling boars and gilts sired by Lendorris Liberator out of Lendorris Liberty Bond sows. Now ready for delivery. W. L. Haag & Son, Hanford, California.

Registered Poland Chinas. 40 tried brood sows; 40 gilts. Some choice young boars all at reduced prices to move at once. These Polands are as good as can be had anywhere at any price. W. D. Trewhitt, Route B Box 47, Hanford, Calif.

Big Boned Poland Chinas—Bred gilts and young boars priced to sell at once. Young stock, either sex, for sale at all times. Bassett Bros., Hanford, California.

Bred Poland-China Gilts sired by California Gerstdale and bred to Some Price. $75.00 and up. J. A. Crawshaw, Hanford, California.

Big Type Poland Chinas—Breeding stock of both sexes for sale at all times. Prices reasonable. J. N. Cook, Orland.

HAMPSHIRES

Buy Registered Hampshire Hogs for your breeding stock. Write the H. G. Ranch, Solvang, California, what you need and they will send prices.

HOGS

"Blue Hogs"—Large, growthy and prolific. Actually "BLUE" in color. Greatest show HOG in America. Write for booklet. Mention this paper. The Blue Hog Breeding Co., Wilmington, Mass.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

RABBITS

Pedigreed Flemish Giants — No fancy prices. Maud Beeching, 1578 W. 46th St., Los Angeles.

Guinea Pigs Wanted—Highest price paid. Smith, Route 1, Box 139, Pasadena.

HORTICULTURAL PRINTING

Catalogues and Booklets, office forms and correspondence stationery for the nursery, seed and florist trade; half tone cuts of many standard plants. Correspondence invited. The Kruckeberg Press, 236 Court St., Los Angeles.

Ventura County members of the Prune and Apricot Growers have decided to pay 33⅓ cents an hour for manual labor, 17½ cents per 50 pound box for pitting apricots and $3.50 per ton for contract picking.

HOUSEHOLD QUERIES

(Continued from Page 37.)

it thickens. Pour this over pickles and heat to simmering. Pack hot in jars, boil 15 minutes and seal.

Dill Pickles in Imperial Valley

Is it possible to make dill pickles successfully in Imperial Valley with the temperature from 80 to 115? If it is possible will you please send me a reliable recipe for the making of them?—Subscriber, Brawley.

We do not believe there will be any difficulty in making good dill pickles in your climate. The pickles need to stand in brine in warm place for three or four weeks to ferment. Then they may be heated to boiling in the brine in which they are made and sealed boiling hot in fruit jars just as you would can fruit.

But surely some of our Imperial Valley readers have had experience, and experience is the teacher the Cultivator swears by. Can't they help us out? The Cultivator will be glad to advance subscription credit one year for good answer to this question.

Meantime here are directions for making dill pickles as given by W. V. Cruess in "Home and Farm Food Preservation":

Cucumber Dill Pickles.—Wash cucumbers. Prepare a crock, keg, barrel or wooden bucket. Do not use metal.

Place layer of dill plant in the bottom of the container and a small quantity of mixed dill pickle spices. These can be obtained from a grocery. On these place two or three layers of small cucumbers. Add another layer of dill plant and spices and two or three layers of cucumbers, repeating the alternation of layers until the container is almost full. Cover with layer of beet leaves or grape leaves at least an inch thick. Fill and cover with a brine made of one pound salt, ten quarts water and two-thirds quart vinegar. Allow to stand until fermentation ceases (three to four weeks). Seal with paraffin. Dill pickles may be kept indefinitely by heating to boiling in the brine in which they are made and sealing boiling hot in glass jars.

My Rosary

I've read in the California Cultivator where other people have asked for poetry to be published in the Cultivator and there is one, "The Rosary," that I've wanted badly for so long and I can't find it anywhere, so could you publish it in the home department if it wouldn't be asking too much?—Subscriber, Holtville.

My Rosary

The hours I've spent with Thee, Dear Heart,
Are as a string of pearls to me.
I count them over, every one apart,
My Rosary, My Rosary.

Each bead a pearl; each pearl a prayer
To soothe a heart in absence wrung.
I count each bead unto the end — and there
A cross is hung.

O memories that bless and burn,
O barren gain and bitter loss,
I count each bead and strive at last to learn
To kiss the cross, Sweetheart, to kiss the Cross.

Pickled Walnuts

Can you make pickles out of green walnuts? If so, please tell me how.—Subscriber, Ventura.

Nuts should be gathered when they are tender enough to be pierced with needle. Make strong brine, 4 pounds salt to gallon water. Prick skins of walnuts and put in brine for nine days, but change brine every third day. After nine days drain off brine and place in sunshine, moving occasionally, until they are evenly black. This will take two or three days. Pack jars three-fourths full of nuts and pour over them boiling syrup made in proportion of ½ cup brown sugar, 2 ounces cloves, 1 ounce black pepper, 1 ounce allspice, 1 ounce bruised ginger, 1 stick cinnamon. Boil spices (in cloth) in vinegar ten minutes and pour over nuts. In a day or so take off syrup, reboil and pour over nuts. Repeat a second time. Then seal or cover closely and put away in cool, dry place. They should stand about a month before using.

HOW THE LIVE OAK PIG CLUB WAS ORGANIZED

On Wednesday, June 15, a meeting of boys and girls and their parents was held at the Greenwood Farm of Witherow and Stafford, and under the direction of Frank S. Spurrier, assistant state leader of clubs, the Live Oak Registered Durco-Jersey Pig Club was organized.

John Leighton Ames Jr. was elected president and Vorus Roulsten secretary. The membership of the club includes the following boys and girls: Grace Aloise Ames, Mary Rosini Charles Vantress, Horace Vantress, Lewis Farrar, Russell Bowman and Frank Hansen.

Messrs. Witherow and Stafford furnished the pigs and each of the club members made a selection from the lot offered them and signed the following agreement:

This agreement was made and entered into on June 15, 1921, between Witherow & Stafford, hereafter referred to as owner, and .....; hereafter referred to as boy.

1. The owner is to let the boy have a pure bred Durco-Jersey gilt to raise.

2. The boy must enter the Live Oak Pig Feeding Contest, and is to feed and care for the gilt under the direction of H. C. Witherow and Frank Spurrier, assistant state leader of clubs.

3. When the pig is about eight months old the owner agrees to breed the pig free of charge. The boy agrees to bring the pig to the owner's ranch for breeding.

4. When the sow's pigs are eight or nine weeks old a division is to be made on either of the following plans, the boy to have his choice of propositions:

(a) The boy may own the sow, and the owner the pigs.

(b) The boy may own the pigs, and the owner the sow.

(c) The boy may own one-half interest in the sow and one-half of the pigs, and the owner one-half interest in the sow and one-half of the pigs.

5. The owner agrees to replace the sow if she should unavoidably be injured or die, the director of the Live Oak Farm Bureau Center to be the judge.

6. If the boy desires, the owner further agrees to purchase at the time when the above division is made the boy's one-half interest in the sow at 12 cents a pound, and the boy's one-half of the pigs at 12 cents a pound for boar pigs and 18 cents a pound for sow pigs, and, if so desired, the boy may buy the sow from the owner at the same rate as above mentioned, and also the pigs at the same ratios as above mentioned.

7. The boy must make all deliveries of hogs.

8. The owner agrees to furnish $25 to be divided as prizes among the club members who do the best.

9. The owner agrees to pay the boy 12 cents a pound for all gain on sow in case she fails to breed, or to replace the sow.

(Continued from Page 30.)

FRESH FIGS SHIPPED EAST

Company of Fresno, which had active charge of the shipment from California through to the actual marketing in the East.

This is the first time a carload shipment of fresh figs has ever left the state and marks the launching of a new departure in the fig industry. Guided in their judgment by the overwhelming demand on the Pacific slope for the fresh fig, officials of the California Peach and Fig Growers believe that a fertile field will be opened by the shipment.

The great drawback heretofore to fresh fig shipments East has been the indifference in packing and care. The four concerns identified with the shipment have been studying the problems for several months and believe that a solution of shipping difficulties has been reached.

The National Livestock Exposition recently in annual session at Cleveland voted to hold its annual for 1922 at Kansas City. Its president is Everett C. Brown of Chicago.

New Life for Old Shingles

That old shingle roof—neglected—is a danger signal! It means the cost of repairs or even a new roof soon, unless you put it in good condition.

ORONITE SHINGLE OIL *Preserves Shingles*

Natural oils in the fibre of unprotected shingles soon evaporate from exposure to the hot sun. Cracking and warping of the shingles follow—and the roof begins to leak. Rain and wind penetrating the shingle fibre hasten disintegration and decay.

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Oronite Shingle Oil will cover from 80 to 100 square feet of shingles per gallon, according to the age and condition of the shingles. It can be mixed with colors—ask our nearest agent for formulas. Use Oronite Shingle Oil on your roofs—*now*. It may save the cost of repairs or even an entire new roof next season.

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101	10,000	Solid	$3,600	$900
61	6,000	Truck Cord	2,750	700
41	4,000	" "	2,395	565
31	3,000	" "	2,032	393
21	2,000	" "	1,874	286
61	6,000	Solid	2,400	400
41	4,000	"	2,100	300
31	3,000	"	1,850	200
21	2,000	"	1,750	100

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Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Soldiers Aid Bill

Has the soldier aid bill become a law?—Subscriber, Valley Center.

From newspaper reports it seems that congress is still debating the federal act. An act has been passed and approved by the governor in the state of California but it will not be until some time in August at the earliest when it will be operative.

House Not Moved

I sold a piece of my farm, together with a house upon another part. Under the provision of the bill of sale it was required that the house be removed within one year. The purchaser of the house later sold it and the house has been on the land 16 months but has not been removed. I have rented this land to another party and desire to take it off. What can be done?—Subscriber, San Diego.

The house has become personal property and the parties have unlawfully been permitted to remain on your land. It would be well to notify them that you are holding this property for them for a certain definite stated time and that at the expiration of that time you will cause the house to be sold as pledges or other property are caused to be sold. Upon such sale you would undoubtedly have the right to purchase it for the rental value of the land which it occupies and tear it down.

Bees a Nuisance

A party keeps bees near a fruit orchard. They cause loss of much of the fruit besides annoyance. What is the remedy?—Subscriber, Garden Grove.

Unless there is some county ordinance there seems to be no definite state law applicable to the case and there would hardly be any relief. There have been instances wherein injunction suits were brought to restrain the depredations of bees, but the difficulty there is the proof that bees of the party against whom the suit is brought are the ones that are doing the damage. If this can be proven, undoubtedly under the general rule of nuisance he would be required to restrain his bees from entering upon your property.

Takes Swarm of Bees

A man came into our back yard and took a swarm of bees from our hives, saying that they has just swarmed. Has he any right to do this?—Subscriber, Arroyo Grande.

He had no right whatever to trespass upon your property. Indeed, there are many decisions to the effect that bees are in the nature of wild animals and that when they swarm they belong to the person who seizes them rather than to the original owner of the hive from whence they came.

Cows on Contract

I bought a small herd of cows on monthly payments. Three died. The veterinarian stated that all were diseased. Two of the payments were missed and the vendor retook the cows. Have we any redress? — Subscriber, Hynes.

Undoubtedly when the cows were sold they were sold as healthy cows. If that was not the case, then you would certainly have a right of action to recover the difference between the value of the animals in the diseased condition in which they were and their value if they had been as represented.

Disposition of Estate

Husband originally had separate property, to which when married to second wife was added her separate property. This was then traded for a ranch in California. Subsequently the husband placed a homestead upon this ranch. Thereafter he made out a deed to this ranch to a son by the first

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Los Angeles, Cal.

wife for love and affection. The husband thereupon placed the deed in his trunk and died. The son came on, took the deed from the trunk and recorded it. There was no will. What are the rights of the parties?—Subscriber, Chula Vista.

Apparently this marriage took place in an Eastern state. The California community property law does not apply in many of these Eastern states. Therefore the question of the original respective rights of the parties would be necessarily determined by the state wherein the marriage took place. Apparently this real property stood in the husband's name in the state of California. As he placed a homestead upon this land it was either his own separate property or community property. Under the rule of law the real estate would go to the wife as surviving joint tenant. The deed of the husband to the son would be ineffectual upon that ground. This deed would also be invalid for the reason that there was no delivery made by the husband to the son prior to death. The placing of it in his trunk and merely informing the son to obtain it could be no delivery. The title to the property is, of course, clouded by this deed and it would be necessary to take action against the son in order to clear the title of the wife to the property and have declared of record the fact of the death of the husband.

Federal Farm Loan

Can I borrow money from a federal farm loan bank to stock our dairy? I noticed the law provides for a loan to pay for a prior loan to make improvements but contains nothing about stocking ranch.—Subscriber, Hynes.

Federal farm loans may be made for the following purposes: To provide for the purchase of land for agriculture; to use for the purchase of equipment, fertilizers, and livestock necessary for the proper and reasonable operation of a mortgaged farm; to provide buildings and the improvements of farm lands; to liquidate mortgages existing upon the land. The terms "equipment" and "improvements" are such as may be defined by the federal farm loan board. The provision for the purchase of livestock is expressly included, and the term "equipment" would undoubtedly include necessary farming improvements, which would propably depend upon the size of the farm and character of the use. Improvement would doubtless also bear relation to the character of the farm.

Poultry Queries

(Conducted by Jean A. Koethen)

Poults Pick Toes

My young turks have a habit of picking between their own toes until they crack. They pull at them nearly all the time. When they get ready to hover under the hens they stamp their feet and seem to be in misery. This happens after they are about two weeks old. I feed them well, hard boiled eggs and baby chick feed, and always fresh water and grass. I thought perhaps it was cholera. They get weak and if the hen steps on them they die of weakness, and they generally run around on the ball of the foot and turn up their toes. Some of my neighbors say that ants bite them, so they have to pick their toes. I have taken them from the mother hen and put carbolated vaseline on their feet. They eat well but do not like to be shut up. I thought if I kept them from running out it might help. —Subscriber, Corning.

This question was sent by inquirer to Dr. Beach of the state college of agriculture, and he writes: "It is very probable that the cause of your young turkeys picking their feet is that they are irritated by some sharp object or irritating chemical substance. In sections of the United States where young turkeys are run on land on which cactus is growing it has been found that the thorns on the cactus will stick on their feet. It is very possible that there are other forms of vegetation which will cause a similar injury. It has also been observed in some localities that alkali soil is very irritating to the feet of young birds. It is my opinion that some such cause is responsible for your trouble."

May Be Mites

Can you tell me what causes my chicks, seven weeks old, to huddle together and droop and die? There is no sign of blood in the droppings, the house is new and they are carefully fed and kept.—Subscriber, Inglewood.

I should look for mites, even if the house is new. This is the season when they breed most rapidly, and if they once begin to suck the blood of your young chickens the results would be just what you have described. Look under ends of roosts and in cracks. If you see a grayish dust, that is mites. If you cannot see anything, put your hand and arm in the coop for a few minutes after dark. You will feel them crawling if they are there. Even if you should be satisfied that there is not a mite on the place, it is safest to paint once a week with kerosene and crude carbolic acid, 1 part acid to 5 or more of kerosene. Paint every corner, roosts and walls near the roosts, and do it early in the morning so the fumes will have time to evaporate before night. It is possible the chicks are drooping because they are overcrowded or because they have not a suitable growing ration. As you do not tell me how they are kept and fed I can only suggest that in addition to disinfecting the coop you keep a good commercial growing mash before them and give plenty of cracked corn in the scratch.

Mites Again

Can you tell me why my chickens, ten weeks old, are dying? They stand around with their wings drooping, eyes shut and heads under wings, no appetite. They have mash with buttermilk and grain at night; everything clean.—Subscriber, Compton.

See answer to Inglewood subscriber above. June is the month when we see this mysterious drooping and death, and the answer, 99 times out of 100, is mites. Roosting quarters should be disinfected frequently at this season whether there are indications of mite infestation or not. If they are not there, they will be, no matter how new and clean the house. Painting or spraying with an insecticide such as crude carbolic acid and kerosene, carbolineum, or a cresol preparation, is the only way to keep them out.

Feeding Pullets

How shall I feed my White Leghorn pullets, hatched early in February, so that they will lay during the winter, and when ought I to encourage them to start laying?—Subscriber, Lindsay.

As soon as the first egg is dropped take away the laying ration, or the growing mash if they have not had a laying ration, and place before them a maintenance mash of bran and ground bone (bone meal), 95 per cent bran and 5 per cent bone meal, and add to their scratch feed all the cracked corn they will eat. The corn fattens them and the bran and bone meal develop frame without encouraging production. Keep them on this ration till you see they are bound to lay in spite of it, then put them back on the laying mash with a mixture of wheat, oats and barley, or three other grains if you prefer, for scratch feed at night. If you can add sprouted oats or barley or sour milk or a mash moistened with milk once a day to the foundation of dry mash and scratch feed, and feed at all times a liberal supply of greens, they will lay fast enough without other encouragement.

SUMMER SESSION AT CHAFFEY

The classes in poultry husbandry have now been in session at Chaffey

(Continued on Page 47.)

15 Gear Operations

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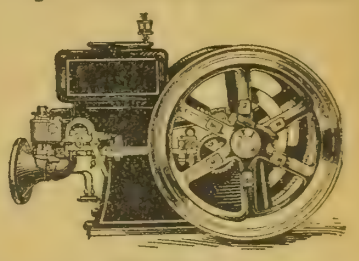

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Los Angeles Markets

Los Angeles, July 5, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price 42 cents.

June	29	30	July 1	2	4	5
1921.	40	40	42	..	..	42

CHEESE

Brokers' prices:
California flats, 19@21.

EGGS

Fresh extras (case included): Produce Exchange closing price 31 per dozen. Case count Produce Exchange closing price 29. Pullets, closing price 26 per doz.

June	29	30	July 1	2	4	5
1921.	30	30	30	..	..	31

POULTRY

Price to producers: Hens, 16@25; colored, 33; broilers, 28@31; roasters, 40; old roosters, 12; fryers, 35; ducks, old, 23; ducklings, Pekin, 3½ up, 30; others, 30; geese, 25; turkeys, live, young tom, 50; dr., 55; old, live, 40; dr., 41; hens, live 40; dr., 44; squabs, 45@47.

Belgian hares, live, 12@16; old 8.

LIVESTOCK

Los Angeles, July 5. — Weighed and delivered off cars without food or water: Hogs (hard grain fed), 125 to 175 lbs., 9.00; 175 to 225 lbs., 9.50.

Cattle (on foot, gross weight): Steers, good, 8.00@8.50; medium, 7.50@8.00. Cows, good, 6.00@6.50; medium, 5.50@6.00. Calves, 125 to 150 lbs., 9.50; 175 to 225 lbs., 9.00.

Sheep: Ewes, 5.00@5.50; lambs, 8.50@9.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock July 5, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies heavy, movement slow, market dull. New Stock: Wide range in prices, mostly 50@60, few best 65, poorer 40 per lug. No. 1, sacked per cwt. wide range in prices, mostly 1.40@1.50; few poorer 40 per lug. Jobbing: No. 1 sacked per cwt. mostly 1.10@1.25.

Onions: Supplies moderate, market steady. Local: White stock, per lug 75@85. Stocktons: Australian Browns, sacked, per cwt 90@1.00.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock July 5, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Asparagus: Market firm; supplies moderate. Local: 16@18 per lb.; Northern mostly 10@12; poorer 6@8; fy. 15.

Beans: Supplies heavy, market steady. Kentucky Wonder mostly 3@3½; jobbing 2@3.

Beets: Doz., 40.

Cabbage: Field crate 2.75@3.00.

Carrots: Doz., mostly 40@45.

Celery: Supplies liberal, market weaker, cr. 5.50@6.00.

Corn: Supplies heavy, market weaker, local mostly 1.00@1.10; poorer, 75@85.

Cucumbers: Supplies heavy, movement slow, market weaker. Local: Lugs mostly, lug, 50@65.

Lettuce: Local field crate mostly 1.00; few best, 1.10@1.25; poorer, 75@90.

Peas: Supplies light, market steady, lb. 8@10.

Peppers: Supplies moderate; market weak. Imperial Valley: Bells best, 16@18; poorer 15. Chilis, best, 18 per lb.; poorer, 15@16.

Tomatoes: Supplies liberal, market weak. Local, 1.00@1.75 cr.; 2.50@2.75 lug.

FRESH FRUITS

Apples: New, lb., 3@4.

Apricots: Supplies heavy, market steady, 2½@3 per lb.; few fancy, 4; poorer, 2; lug, 1.00@1.10.

Blackberries: Supplies moderate, market firm, 30 pint crate 2.75@3.00.

Cantaloupes: Supplies heavy. Demand and movement moderate, market weak, market oversupplied with poor stock. Ponys mostly 1.60@1.85, poorer 1.25@1.50, standards mostly 2.00@2.50, poorer low as 1.50@1.75. Jobbing: Standard 1.85@2.00, few fancy 2.25, poorer 1.50@1.75, ponys mostly 1.50@1.65, poorer 1.25@1.40.

Cherries: Supplies moderate, market steady. Whites, various varieties mostly 10@12, few 13@15, ordinary 8@9 per lb. 10@12; Blacks, various varieties 10@14; Bings fancy 18@22 per lb., according to quality; poorer 13@15.

Figs: Supplies light, market firm. Northerns, flats, Black Spanish 1.00@1.25. Imperial Valley, San Pedros, flats 85@1.00.

Grapes: Supplies light, market steady. Per lb. 12@14.

ket firm; 30 pint crates 3.00@3.25.

Loganberries: Supplies moderate, market steady; 30 pint crates 2.50@3.00; few 3.25.

Peaches: Supplies light, movement moderate, market steady; wide range in quality and condition. Lugs, various varieties, best 1.25, poorer 75@1.00, fancy Redbirds 2.50@3.00, various varieties 5@6 per lb.

Plums: Suplies liberal, movement moderate, market weak. Santa Rosas mostly 5, few varoius varieties mostly 3@5 per lb.

Prunes: 5@6 per lb.

Raspberries: Supplies heavy, market weaker. Cuthberts 2.50@3.00.

Strawberries: Supplies moderate, movement slow, market weaker. Per crate, No. 1's 3.00@3.50, No. 2 stock 2.25@2.75.

Watermelons: Supplies liberal, market steady, mostly 2@2½ per lb., poorer 1½@1¾. Jobbing: Klondykes, 38.00@40.00 per ton, other varieties 30.00@35.00; poorer 25.00.

CITRUS FRUITS

Grapefruit: Suplies liberal, market steady, movement slow. Local: Per box, market pack 2.00@2.50, special packed brands 3.00@3.25; ordinary 1.75.

Lemons: Supplies moderate, market steady, wide range in prices. Locals: packed box 4.50@5.00; few fancy 6.00@7.00; loose 1.50@1.75 per box; few fancy, 2.00@2.50; per lug mostly 50@75.

Oranges: Supplies liberal, market steady. Valencias, best brands, all sizes, 3.50@4.00, few 4.50; ordinary 3.00@3.25; packing house culls 50@75, few best 1.00@1.75 per box.

HONEY

As reported by the Bureau of Markets: Supplies of White Sage, Light Amber and White Orange light, other varieties heavy. Light wire inquiry. Movement very slow, market dull, little change in prices. Carloads f. o. b. usual terms at loading points: White Orange, new crop 12@12½; old crop, no sales reported. Light Amber Alfalfa, old crop 5½@6, new 6@6½; White Sage best 12@12½; Light Amber Sage, no sales reported. Hawaiian White 6, Light Amber 5½.

Beeswax in less than carlots light 30@33, dark 26@28 per lb. Alfalfa crop is now estimated normal, orange 25 per cent and Sage at 30 per cent of normal.

GRAIN AND FEEDS

Grain Exch. price bid July 5:
Corn: Bulk No. 2, Yellow 1.55; No. 2 White 1.60.
Bran: Kansas, 25.00.

HAY

Alfalfa Growers of California report prevailing prices f. o. b., Los Angeles:

No. 1 Dairy	19.00
Standard	16.00

The market situation showed no improvement during the week in the Los Angeles and San Francisco trading centers. Receipts and offerings continued in excess of the current demand, as dealers and users still refuse to buy freely beyond their immediate wants. The main reason is plainly the fact that they want to do such speculative buying at the bottom prices of the year; it is therefore not to their interest to relieve the present depression by taking hold freely, as long as the selling pressure of forced marketing makes it possible to bring prices still lower. In our opinion it is a mistake to lay much of the blame for this situation on the dealers. They simply take the marketing system and the conditions created by it as they find them, and turn them to their best advantage. The system in its present development if unfavorable, in fact ruinous, to the producers, there can be no question about that, but the growers can hardly expect the dealers to change it; in fact we doubt that they could change it even if they were inclined to do so, as such an attempt on their part, if such a thing were conceivable, would spell quick ruin to them; it would mean their "holding the bag" for several thousand individual growers whose actions they could not control. The system can only be changed for the better by the producers for which purpose they must necessarily act jointly, as it cannot possibly be done in any other way; this of course means cooperative marketing on a comprehensive scale. The extent to which they are then benefited depends on the strength of their marketing organization. Clearly such an association will be the more successful the nearer it comes to comprising in it all the growers. Also, the association has a harder task and therefore requires greater strength under adverse financial and economic conditions, such as we are at present going through. In the fruit and grape growing sections of the San Joaquin Valley, which has become one of the important hay marketing centers of the state, the demand showed considerable improvement and resulted in a lively business during the week at prices ranging from $3 to $5 according to locations of growers, above the shipping parity of the Los Angeles and San Francisco markets, which however still leaves prices very low. Normally the heaviest demand there is during the next three months. The alfalfa production in these sections has of late years declined materially from year to year; a large part of that former alfalfa acreage is now in vines and fruit trees, thus largely increasing the local consumption of alfalfa hay while at the same time decreasing the production of it.

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats	18.00@26.00
Barley	16.00@24.00
Alfalfa, No. 1 Dairy	18.00
Standard	16.00
Straw	10.00@13.00

San Francisco Markets

San Francisco, July 5, 1921.

Quotations made daily by San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

BUTTER

Dairy Exchange quotations July 5:
Extras Choice 41½

Dairy Exchange prices extras this week and year ago:

June	29	30	July 1	2	5
'21	40	40	41	..	41½
'20	61½	61½	62	..	..

CHEESE

Dairy Exchange quotations:

Jack, full cream, street prices	14½@16
Oregon Trips	20
Cal. Y. A.	22½
Cal. Flats	19@21

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases, July 5:

Extras	34½
Extra Firsts	33½
Dirties No. 1	31
Extra Pullets	27
Undersized	22

'20	52	52	..	..

June	29	30	July 1	2	5
'21	35½	34½	31	..	34½

POULTRY

Wholesale prices are:
Hens, 18@25; broilers, 30@31; fryers, 33@34; young roosters, 20@25; old roosters, 15@18; ducks, 25@30; geese, 25@30; turkeys live, 35; dressed, 45@50; Belgian hares live, 13@14; dressed, 18@20; squabs fancy, 35@40; pigeons, 3.00 dozen.

LIVESTOCK

Western Meat Company prices are:
Cattle: Steers, No. 1, 6@6½; do, second quality, 5½@6.
Cows and Heifers: No. 1, 4½@5; do, second quality, 4@4½.
Calves: Light weight, 6½@7; medium, 5½@6; heavy, 4½@5½.
Sheep: Wethers, 3½@4; ewes, 2½@3.
Lambs: Milk, 6@6½.
Hogs: Hard, fat, grain-fed, weighing 125 to 200 lbs., 10½; do, 200 to 250 lbs., 9½; do, 250-350 lbs., 8½; light sows, 8½ heavy sows, 7½.

POTATOES AND ONIONS

Wholesale prices:
Potatoes: Street prices: Old crop 1.25@2.00.
New: Garnets, 1.75@2.00 per 100 lbs.
do, White, 1.50@1.75.
Onions: Australian brown, 35@50 per bag; new red, 75@1.00 bag; green, 1.75@2.00 box.
Garlic: New, 4@6.

VEGETABLES

Wholesale selling price:
Artichokes: Crate, 3.00@12.00.
Asparagus: Culls, 2½@3 per lb.; field run, 4@5; fancy graded, 7@10; green, 3@5.
Beets: 1.75@2.00 per sack.
Beans: String, 7@12; poor quality 1.00 sack.
Carrots: Sk., 1.25@1.50.
Celery: New, 8.00@9.00 cr.
Corn: Alameda, 6.25@7.50 per crate of about 9 dozen ears; 5.25@6.00 per sack.
Cucumbers: 50@1.00 lug; English 2.00.
Eggplant: Lb., 10@12½.
Okra: 8@12½ lb.
Peas: 3@6 lb.
Peppers: Bells, 10@30; Chili, 15@20.
Rhubarb: Bx., 1.25@1.75.
Squash: Lug, 1.50@2.50.
Spinach: Lb., 2@4.
Tomatoes: Imperial, 1.75@2.50; Merced, 1.75@2.50 bx.

FRESH FRUITS

Apples: Red Astrakhans, 1.00@1.50 bx.; White Astrakhans, 1.75@2.25; Gravenstein 2.75@3.00.
Apricots: Lb., 2@5.
Avocados: California, doz., 3.00@6.00.
Bananas: Lb., 8¼@10.
Blackberries: 35@40.
Cantaloupes: Standard, 2.50@3.00; ponies, 1.75@2.25; flats, 1.00@1.25; Honey Dew, cr., 1.00@2.00.
Cherries: Bings, 17@18 per lb.; Royal Anne, 10@12 per lb.
Currants: 1.00@1.25 per drawer.
Figs: 65@75 single layer.
Grapes: 2.50@3.50.
Gooseberries: 7@8 lb.; English, 15 lb.
Loganberries: 20@35 per drawer.
Loquats: 6@7.
Peaches: 1.50@2.00.
Plums: Cr., 1.50@2.25.
Raspberries: 60@75 per drawer.
Strawberries: 65@75 per drawer.
Watermelons: 2@3 per lb.

CITRUS

Valencias 3.00@4.50 bx. Lemons, 7.50@8.50 per bx.; grapefruit, 2.50@4.00.

BEANS

Below California Bean Growers Association shippers prices choice recleaned:

Large Whites	3.85
Small Whites	3.80
Pinks	6.60
Mexican Reds	8.00
Red Kidney	9.75
Henderson Bush	4.50
Cranberries	6.60
Bayos	11.25
Bayos	10.50
Blackeyes	8.00

HAY AND FEED

Alfalfa Growers of California state that prevailing prices f. o. b. S. F. are:

No. 1 Dairy	16.50
Standard	14.50

Under date of July 1, A. W. Scott Co. says:

Receipts, 1,318 tons as compared with 1,496 last week. Trade requirements continue limited and arrivals in excess of demand. Country conditions have been excellent for hay curing. Local hay business is a trifle better. Many ships have been moving; building is starting again, and general business is livelier than for some weeks. Alfalfa is dragging badly. Clover hay is so plentiful this year that locally the dairy trade is taking it in preference at the difference in price. Mill feeds are generally lower as the market on coarse feed grains is easier and prices off.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumere charges of switching, cartage, commission and handling expenses must be added according to conditions).

Wheat Hay, fancy	15.00@18.00
Wheat Hay, fair grade	13.00@15.00
Tame Oat Hay	12.00@15.00
Wild Oat Hay, new crop	10.00@12.00
Barley Hay	10.00@12.00
Alfalfa Hay, new 2nd cutting	12.00@14.00
Alfalfa Hay, new first cutting	9.00@11.00
Stock Hay	8.00@10.00
Barley, Ground	29.00@31.00
Barley, Rolled	25.00@27.00
Oats, Rolled Feed	32.00@34.00
Bran, Red	30.00@34.00
Bran, White	35.00@37.00
Millrun	32.00@38.00
Middlings	46.00@48.00
Linseed Meal	35.00@37.00
Coco Meal	22.00@25.00
Alfalfa Meal, old crop	23.00@25.00
Alfalfa Meal, new first cutting	21.00@23.00
Cottonseed Meal	35.00@40.00
Sugar Beet Pulp	32.00
Molasses, Tanks	15.00@17.00
Molasses, Bbl.	21.00@25.00
Milo	42.00@44.00
Corn Meal	41.00@44.00
Scratch Feed	46.00@48.00

GRAIN

Wheat: Milling, 2.10@2.20; feed, 2.10@2.20.

Barley: Feed, 1.10@1.25; shipping, 1.20@1.30.

Oats: Red Feed, 1.20@1.30.

Corn: California yellow, 1.55@1.60; white Egyptian, 2.40@2.60 per cental; California red milo, 2.00@2.10; Eastern red milo, 1.95@2.00; Eastern kafir, 1.75@1.80.

Citrus Markets

Los Angeles, July, 6, 1921.

There are still a few St. Michaels and Jaffas and occasionally Sweets but most such stock has been cleaned up and Valencias are largely filling the market. Prices are not as satisfactory as earlier in the season but retarded shipment is having beneficial effect.

Lemons are still selling at spectacular prices. The weather has been favorable to lemon sales and growers have done heavy picking and shipments have been large. Delivered prices have been running from $7.50 to $11.

Shipments

Shipments of citrus fruits to date since November 1, 1920, Southern California: Oranges, 29,823 cars; lemons, 7,973; total, 37,796. To same date last season: Oranges, 23,801; lemons, 6,167; total, 29,968. From Central California to date this season: Oranges, 6,626; lemons, 206; total, 6,932. To same date last season: Oranges 5,374; lemons, 289; total, 5,663. From Northern California to date this season: Oranges, 305; lemons, 5; total, 310. To same date last season: Oranges, 261; lemons, 22; total, 283.

AT THE AUCTIONS

June 29

New York: 47 or., 4 mixed, 3 lem. Val. 3.60-6.85, Seeds. 4.65, Grapefruit 2.70-3.80, Mikes. 4.40-5.85, Bloods 4.10-4.50, Sweets 4.10-4.65, lem. 10.95-12.95.

Pittsburg: 7 or., 5 lem. Val. 3.20-5.40, grapefruit 3.10, lem. 4.80-9.45.

Philadelphia: 13 or., 4 lem. Val. 3.85-6.25, Seeds. 4.05-4.40, lem. 9.00-12.00.

Boston: 22 or., 2 lem. Val. 4.40-5.80, Mikes. 2.30-2.55, lem. 6.05-11.10.

Cleveland: 8 or., 5 lem. Val. 2.65-5.25, lem. 11.05-12.50.

St. Louis: 6 or., 2 lem. Val. 2.00-4.30, Jaffas 2.10, lem. 5.95-7.15.

Cincinnati: 5 or., 3 lem. Val. 3.50-4.55, lem. 8.30-8.95.

June 30

New York: 46 or., 5 mixed, 5 lem. Val. 3.25-6.60, Mikes. 2.25-5.15, Sweets 3.45, Seeds. 2.40-3.85, grapefruit 3.20-4.05, lem. 4.70-11.45.

Philadelphia: 16 or., 5 lem. Val. 4.10-6.15, Mikes. 4.40, lem. 4.25-10.30.

Pittsburg: 7 or., 1 lem. Val. 3.70-5.50, lem. 6.80-9.70.

St. Louis: 1 or., 1 lem. Val. 3.80-5.05, lem. 7.45-7.90.

Boston: 18 or., 2 lem. Val. 3.35-5.50, lem. 10.15-10.75.

July 1

New York: 34 or., 1 mixed, 2 lem. Val. 3.40-6.45, Seeds. 1.85-3.70, Sweets 3.30-4.05, Mikes. 3.35-4.40, lem. 4.40-4.90.

Cincinnati: 7 or., 4 lem. Val. 3.30-9.05, Mikes. 2.95, lem. 7.30-9.10.

Cleveland: 6 or., 5 lem. Val. 3.35-4.75, lem. 5.50-11.40.

Pittsburg: 5 or., 2 lem. Val. 3.60-4.85, lem. 6.60-9.75.

St. Louis: 4 Val. 3.00-4.50.

Boston: 13 or., 4 lem. Val. 3.45-5.40, lem. 5.95-10.65.

Philadelphia: 8 or., 3 lem. Val. 3.95-6.05, lem. 7.10-9.40.

July 5

New York: 65 or., 4 mixed, 8 lem. Val. 2.45-6.50, Mikes. 1.50-4.30, Sweets 2.20-4.30, bloods 3.45, grapefruit 2.75-4.35, lem. 4.50-9.50.

St. Louis: 4 or., 4 lem. Val. 3.75-5.30, lem. 5.05-10.60.

Baltimore: Val. 3.20-4.70, lem. 10.10-10.85.

Philadelphia: Val. 2.75-5.95, grapefruit 2.90-3.55, Sweets 2.55-3.25, Homasassas 2.65-3.15, lem. 3.00-9.35.

Boston: 30 or., 6 lem. Val. 3.00-5.45, grapefruit 5.60, lem. 3.10-10.20.

Pittsburg: 8 or., 4 lem. Val. 2.50-5.20, lem. 7.15-11.80.

REPORT OF MARKETING COMMITTEE, CALIFORNIA CATTLEMEN, JUNE 25

Beef cattle prices in Chicago and other central markets were the lowest last week that they have been for the last seven years. The Portland market is in a similar condition, and native Oregon cattle are now being sold at Portland. No shipments can be made from California to Portland for the next 30 to 60 days. There is a considerable shortage of beef from Fresno south, and Southern California buyers have bought as far north as Oakdale. Recent prices for steers located in the upper San Joaquin Valley have been reported at 6¾ cents and 7 cents. Heavy cows at Hollister recently sold at 6¼ cents and some as low as 5¾ cents. A sale in San Luis Obispo County has been reported at 5¾ cents for cows and 7 cents for steers. Reports of sales in Tulare County are to the effect that most sales have been at 5½ cents for cows and 6½ cents for steers, although in some cases cows have sold at 5¾ cents and steers at 7 cents.

Your chairman has just returned from a trip East and begs to report: An oversupply of inferior cattle on the Chicago market has had a great deal to do with the slump in prices. The Portland situation is very similar and the cattle are event more inferior in quality. Owing to the closing down of many of the industrial propositions and the resulting idleness, the consumption of beef has decreased very materially all over the United States. Cattle owners in California are far better off than cattle owners in any and all other cattle states in the Union. Don't be too anxious to sell your cattle right now. When you do sell be sure that

they are prime, not half fat. Do not ship on consignment under any circumstances.

The next meeting of the marketing committee will be held July 15, and at that time we will submit report of sales of cattle from the 20 largest cattle counties of the state.—F. H. Bixby, chairman, A. S. Goode, Owen Duffy, C. N. Hawkins, James Barry.

CITRUS CULTURE IN TEXAS

(Continued from Page 27.)

away from the severe winters, a very large proportion of them being induced to buy on the strength of the showing made there with citrus fruits. They are shown the possibilities of the citrus industry but are not made acquainted with the necessity of proper care and frost protection, as a result of which they do not provide for protection and usually lose their first planting of trees. There have been hundreds of thousands of citrus trees planted in the valley, a very large proportion of which never survived the protection, and until the planters are first winter because of a lack of frost made to see that this is the all important requisite there is bound to be a heavy loss of trees.

There is no question in my mind but that citrus fruits can and will be produced in commercial quantities when once the growers make up their minds to give them proper care and equip their orchards with heaters to protect them against the few cold nights that come most every winter.

COMING EVENTS

Frontier Days Celebration, Prescott, Arizona, July 2-5.
North of Bay Counties Fair, Santa Rosa, August 24-28.
Downey Community Fair, Downey, August 25-27.
Yuba County Agricultural Fair, Browns Valley, Aug. 29-31.
California State Fair, Sacramento, Sept. 3-11.
Tulare County Livestock and Agricultural Show, Tulare, Sept. 13-17.
Humboldt County Fair, Ferndale, Sept. 13-17.
San Fernando Valley Fair and Market, Owensmouth, Sept. 13-18.
Glenn County Fair, Orland, Sept. 19-24.
Kings County Fair, Hanford, Sept. 19-24.
San Diego County Fair, San Diego, Sept. 21-24.
Fresno District Fair, Fresno, Sept. 26-Oct. 1.
Arbuckle Almond Show, Arbuckle, Sept. 28-Oct. 2.
Ventura County Fair, Ventura, Oct. 5-8.
Southern California Fair, Riverside, Oct. 11-16.
California Association of Nurserymen Annual Convention, Exposition Park, Los Angeles, Oct. 20-22.
Date Festival, Coachella Valley, Oct. 21-23.
California National Livestock Show, San Francisco, Oct. 22-30.
California Horse Breeders Association, Los Angeles, Oct. 30-Nov. 5.
Pacific International Livestock Exposition, Portland, Oregon, Nov. 5-12.
Stanislaus County Poultrymen's Association Show, Winter Garden, Dec. 4-7.

SUMMER SESSION AT CHAFFEY

(Continued from Page 45.)

Junior College, Ontario, for three weeks. They are under direction of the poultry division of the University of California. The program for the remaining half of the course is:

Monday, July 11, poultry housing; 12, poultry housing, disinfectants and parasitic sprays; 13, poultry housing, study of appliances; 14, poultry housing, poultry farm accounts; 15, poultry feeding; 16, field trip.

Monday, July 18, poultry feeding, identification of feeds; 19, poultry feeding, study of physical qualities of feed; 20, poultry feeding, condimental feeds, nutritive ration; 21, principles of breeding; 22, principles of breeding, type study; 23, field trip.

Monday, July 25, breeding for egg and meat production; 26, marketing poultry products, selecting the laying hen; 27, diseases of poultry; 28, diseases of poultry; 29 diseases of poultry.

CALIFORNIA FARM BUREAU EGG LAYING CONTEST

June 10-20: Contesting hens average for the ten days, 64.2 per cent. Twenty-two of the 54 pens laid 70 per cent and over. Geo. Gray of Santa Cruz leads for the ten days with Alex Stewart of Santa Cruz a very close second.

High pen productions for the ten days were: Geo. Gray, Santa Cruz, 78 eggs; Alex Stewart, Santa Cruz, 77; Warren Wood, Santa Cruz, 76; W. A. Ford, Umatilla, Oregon, 75; S. L. Gibson, Santa Cruz, 75; Hanson's Poultry Farm, Corvallis, Oregon, luma, 74; Walls, 74; Geo. Brenneke, 74; D. B. Walls, Petaluma, 74; Walls, 74; Geo. Brenneke, Santa Cruz, 74; J. S. Conrado, Santa Cruz, 73; Gibson, 72.

AVOCADO ASSOCIATION FIELD DAY

The first general field day of the California Avocado Association will be held at Puente on Saturday, July 30. Arrangements have been made to use the new walnut packing house, the largest in the world, for lunch. Basket lunches will be brought by the members and visitors, and the chamber of commerce of Puente will serve avocado ice cream and coffee. As the avocados for the ice cream have to be picked ten days before they are used, it will be necessary to know in advance approximately how many will be in attendance, and preference will be given to those who notify the secretary ten days or more in advance of their intention to be at the lunch.

After lunch visits will be made to some of the avocado plantings around Puente and demonstrations given of grafting, budding and pruning. Arrangements will be made for the accommodation of those who do not have their own automobiles.

All who are interested in avocados are invited to come and to bring their friends and neighbors, and particularly urged to send a postal card to the secretary of the California Avocado Association, Altadena, notifying her how many will attend.

ANIMAL MANURES WASTED

Are farmers wasteful? It seems so, for according to authoritative figures one-half of their most valuable crop, manure, is wasted each year. The loss amounts to $500,000,000 a year. With proper storage in covered concrete pits or in sheds the loss need not exceed one-third that amount.

RECORDS A GUIDE TO PROPER FEEDING

Beside their value in locating low producers, production records are well worth their cost for other purposes. Too many dairymen feed all cows alike regardless of production, or at most give only a small extra allowance to the heavy producer without any especial thought in the matter, not realizing that a good cow in the early part of her milking period may need two or three times as much digestible food material as the small producer standing beside her or as she herself would need for her diminished milk production near the end of the milking period. The extra feed needed to bring the ration of the heavy producer up to the amount called for in one of the recognized feeding standards will usually pay far better dividends than any other feed used on the farm, and failure to supply it is a real extravagance. On the other hand the heavy feeding of cows which lack milking capacity can result only in waste of feed. A definite determination of the production at approximately regular intervals, and adjustments of the amount of grain fed according to the amount of production would doubtless result in a vast saving of feed and a considerable increase of milk production on most farms where some such program is not already in effect.—Ohio Experiment Station.

WEATHER REPORT

San Francisco, Cal., July 2, 1921.

Stations	Rainfall Wk.	Season	Norm.	Temp. Max	Min.
Eureka	.50	.00	.01	68	50
Red Bluff	.00	.00	.00	96	60
Sacramento	.00	.00	.00	98	54
San Francisco	.00	.00	.00	85	53
San Jose	T	.00	.00	92	50
Fresno	.00	.00	.00	98	56
San Luis Obispo	.00	.00	.00	82	52
Los Angeles	.00	.00	.00	82	58
San Diego	.00	.00	.00	70	60

Thought for Food

In food production just as much as in any other industry, the man who succeeds is the one who gives intelligent thought and consideration to each of his individual problems.

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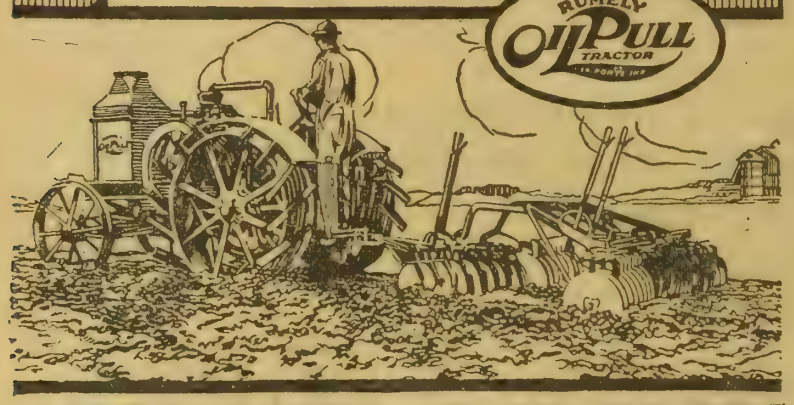

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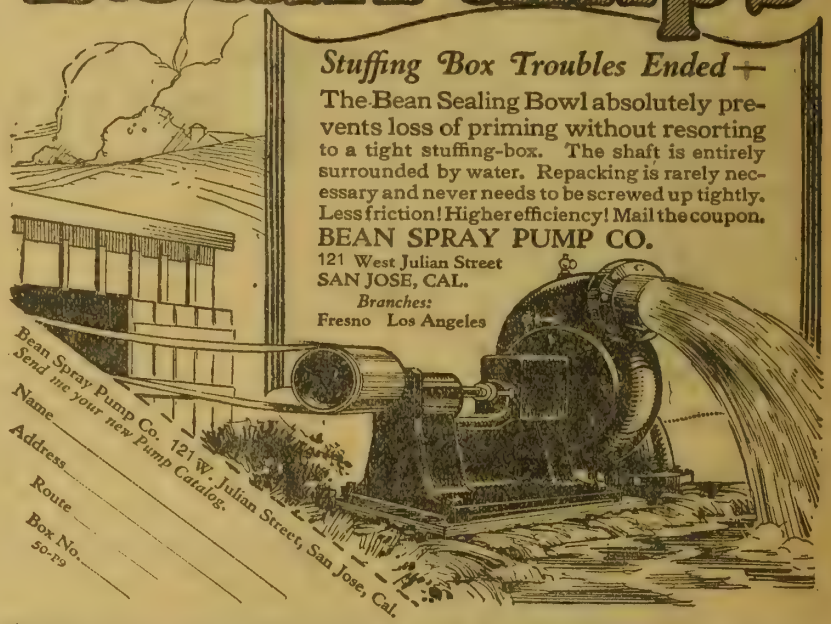

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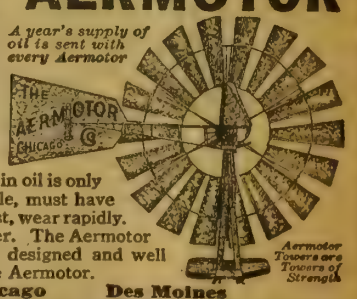

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LVII — July 16, 1921 — No. 3

A Shady Spot in Tulare County

Established 1877 Forty-fourth Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877

Combined with California Cultivator 1914 Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

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Saturday, July 16, 1921

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

If any of the 40,000 Cultivator subscribers fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

PROTECT PRODUCERS

Now comes the long fight to secure a permanent protective tariff. The farmers of the country have watched the coming of the fight and have prepared to enter into it as never in the history of the country, and they have entered into it, not with an "if you please," but with a demand for simple justice. This demand, with more or less of an exhibition of the big stick, has resulted in the headlines over the first draft of the bill, stating, "Farmers Given Greater Degree of Protection Than Ever Before."

This is entirely true and yet that is not necessarily saying much as to the degree of the protection. Importing interests assert: "Its enactment would be the ruination of the import business." But delegates from 28 associations of California food producers, in convention assembled at the office of the state market director, recently declared: "It will so boost the import business that American producers will have to stop producing if they do not have to actually beg from door to door."

It is possible both these elements are in the class which may be considered "enthusiastic pessimists," but everyone who is in close touch with the producing interests of California realizes that in some particulars, at least, the enthusiasm of the producing pessimist is not entirely unexplainable.

For instance, beans: California produces 60 per cent of the beans grown in the United States. Expressed in bushels, this state's production has been:

1918 .....8,594,710 bushels
1919 .....5,000,000 bushels
1920 .....2,850,000 bushels

and this year's estimates have it that 1921 will show a production of far less than 2,000,000 bushels. This means that of California's rich acres there are a half million barren of crop, or possibly producing a crop of barley hay infinitely lower in food and financial value than beans.

A part of the eight and a half million bushel production in 1918 was due to the war torn world's cry for food, but that cry will be no less insistent within the next few years unless there is greater encouragement, through profit, or at least production cost, for the food producer.

Now note average seasonal f. o. b. price on Lima beans: 1918, $9.69 per cental; 1919, $10.49; 1920 (so far as the crop has been sold), slightly under $5.00. This, of course, is vastly under cost of production and accounts for the million and a half of barren acres.

What has this to do with the tariff? This, that the island of Madagascar and, on the other side of the world, Manchuria—in both countries labor is practically gratuitous—are large producers of Lima beans which may be transported to American markets at a cost far under transportation charges to California producers. And the protective tariff has been "not a bean." In view of the aggravated situation of the American bean grower having to compete with the Chinese, Manchurian and Korean coolies or with Madagascar negroes, the bean grower deems 2½ cents per pound the lowest possible safety point if the industry is to be saved. The tariff bill grants only 1¼ cents.

The almond grower is offered four cents per pound (unshelled). In view of labor conditions of the Mediterranean countries, the California almond grower insists that 5 cents per pound and 15 cents on shelled nuts is none too high.

The California lemon grower is treated fairly well and has no complaint, but the orange grower, who asks nothing on fresh fruits, still finds it necessary to dispose of wastes of his industry in marmalades and other products. On these there has been a cut of 20 per cent from the former 35 per cent ad valorem duty.

Cotton manufacturers are amply cared for, but the cotton grower now has no protection except that the Fordney emergency act provides for a 7 cent tariff on 1⅜ staple. That will be repealed by the permanent measure which places all cotton and cotton waste on the free list.

These are but hints of some of the discriminations against the producers of food and raiment.

Are not the producers who met in Sacramento and condemned the present bill at least in a measure justified?

The government has so thoroughly protected the transportation companies by permitting rates almost prohibitive that the producer is justified in demanding—and, in fact, his very existence depends on—protection from cheap ocean transportation as well as cheap savage and coolie labor conditions.

And the livestock man is invited to get off the earth — or the American part of it. Duties are levied on articles required by stock men while hides and other stock products are to be free. Shoes in California are still some 230 per cent of pre-war price; the livestock man is getting less than pre-war price so the shoe man must be protected by free hides.

GUARANTEE BEEF

Is it not a good idea to guarantee beef producers, bean producers and some others? The railroads were given a definite guarantee of income on investment. Food is about as important as transportation, but the farmer can go to the devil so far as congress cares.

Listen to this account of an occurrence in the Middle West as reported to us by the farm bureau: "Last October Charles Hunter, an Inavale cattleman, shipped to his feed lots 102 head of beef steers, which cost him $10,810 delivered in his lots, or 10½ cents a pound. He sold them seven months latter on the Chicago market for $10,684, or 7½ cents a pound—a loss of 3 cents a pound—besides having to pay an $892 freight bill for shipping the cattle to Chicago. In other words, Mr. Hunter bought 102,000 pounds of live steers for $10,810 and sold 142,800 pounds of beef on the hoof—just 40,800 more pounds of beef than he bought—for $10,684, taking a loss of $126, a loss of seven months' work, a loss of all the alfalfa and corn he fed these steers, and a loss of seven months' interest on $10,810—a rather heavy penalty for having contributed more than 40,000 pounds of additional beef to feed his fellow countrymen."

If the entire freight bill had been remitted, Mr. Hunter would still be in the hole. We are not endeavoring to lay the entire blame for our present deplorable condition at the door of the transportation companies but we still may call attention to injustice of favoring great corporations and letting the rest of us go hang.

California potato growers are also making a desperate effort to exist till transportation relief is secured. One of them, J. E. Gardner of El Monte, has written Governor Stephens an appeal for assistance:

"We are suffering great losses in marketing our crops because of the excess freight rates. My present crop of potatoes will not pay more than 50 per cent of production costs, and unless we have relief soon will be forced to stop farming."

The governor replies:

"This matter has been recently called to my attention by a great many growers of this state, and in an effort to assist, I appealed to the Honorable Warren G. Harding, president of the United States, on behalf of the American citizens of the state of California engaged in the production of food products, especially those at the present time producing such perishable products as potatoes, in order that these growers might enjoy, uninterruptedly, the splendid success which should be theirs by reason of the great efforts put forward to produce this necessary food.

"I have been assured by President Harding that the matter will be taken cognizance of by the interstate commerce commission, but I have further instructed the officials of the state department of agriculture and state market commission of this state to render every assistance to the growers to the end that an adjustment may be brought about."

ASA W. MORRIS

Asa Warren Morris, one of California's pioneer and greatest livestock breeders, died as the result of an automobile accident on the road to Shasta Retreat last Saturday. Mr. Morris with his wife and a friend were driving up the grade when the car ran off the travelled roadway into soft earth. Mr. Morris helped the ladies from the machine and reentered the car to bring it back onto the roadway. The soft earth suddenly gave way and the machine went over the bank, pinning him underneath.

Mr. Morris was born in Waynesburg, Pennsylvania, May 8, 1857. He came to California in 1879 and with his sons has been engaged in the dairy business and in the breeding of Holstein cattle in Yolo County. His greatest accomplishment in the rearing of great producers began in 1908 when he purchased the pure bred Holsteins of the Pierce Land and Stock Company. The Morris herd attracted attention the United States over at the time Riverside Sadie De Kol Burke began for the ranch the breaking of world's records. Following her came Aralia De Kol, Julianna De Kol, and finally Tilly Alcartra. Mr. Morris' sons have been associated with him in his great work, the business management of the ranch for many years being directed by Frank W. Morris and the feeding of

Asa Warren Morris

the wonderful producers by A. J. Morris.

Mr. Morris was a quiet, unassuming doer rather than talker. He has been a great factor in the upbuilding of California in the production and in the advancement of the interests of pure bred livestock. His work will never be forgotten. His interest in, and even his affection for, the products of his farm was shown long after the stock had been transferred to other farms in California and even other states. This has been shown markedly in the advertising he has written during the past year, which has contained illustrations and given facts regarding animals, the result of Morris' breeding, but now owned by others.

In his life and accomplishments he was a splendid example of the highest type of agriculturist, and his activities can well be called to the attention of the youth of California who may feel that agriculture as a lifework offers small financial possibilities and little of the fame that comes to leaders in other professions.

Asa W. Morris by his life and work was California's most distinguished livestock breeder and a citizen of whom the whole state is justly proud.

COOPERATIVE FIRE FIGHTERS

We all observed fire prevention week with greater fire prevention effort. We suggested in a former Cultivator that we make it a whole fire prevention year.

There are none who go into the mountains and build campfires but should realize the awful losses occasioned by carelessness, but the freedom with which we sometimes leave glowing embers indicates that we are a desperately careless people. Arrests by forest patrolmen and stiff fines by the courts for this carelessness are beneficial reminders, but what California needs is more of real wholesome, hearty interest by its inhabitants in the general welfare rather than a fear of federal or state officials. The unnecessary loss of property, sometimes even loss of life, by fire is appalling. Hardly a country in the world has as many fires as does America, and the one main cause is carelessness. Carelessness in building fires or leaving fields of ripened grain or other combustible crops exposed, carelessness in not equipping for fire fighting, carelessness in not informing ourselves and others as to best methods of using that equipment, carelessness in not urging greatest and most intense cooperative spirit in fire prevention and forest protection, these are causing an economic loss that can never be returned. Let's get busy and cooperate.

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Western Plant Quarantine Board

THE third annual convention of the Western Plant Quarantine Board held at Victoria, British Columbia, in June, resulted in a general advance in the fight to protect the western coast from the introduction of plant disease or insect enemies.

The resolutions adopted give an outline of some of the expressions of the board. First, owing to the retirement of Director Hecke of the state department of agriculture from active quarantine work, he withdrew from active participation in the work of the plant quarantine board. This called forth regrets on the part of the remaining members and a resolution "that we, the members of the Western Plant Quarantine Board assembled in its third annual convention, elect the Honorable G. H. Hecke to honorary membership in the Western Plant Quarantine Board."

There were heartiest expressions of appreciation to the premier of British Columbia, the provincial department of agriculture, the press, the astro-physical observatory, the Dominion experimental farm and the department of agriculture of the state of California for courtesies extended, to the federal agricultural board for information and assistance generously furnished and to Messrs. Hecke and Lyne for program prepared.

It was urged that colonization agents for various railways be invited to attend all meetings of the board, this with the idea of securing heartiest cooperation from these large interests in protecting agriculture and horticulture.

Federal Quarantine

"Whereas the federal horticultural board and the U. S. bureau of plant industry have shown the Western Plant Quarantine Board the inestimable value of close cooperation in our work, and whereas tangible benefits and increased efficiency have been mutually derived from such association in our cooperative work, and whereas the same serious pests continue prevalent in other states: Be it therefore resolved that the Western Plant Quarantine Board express its approval of the generous cooperation given in the past two years, and be it further resolved that the federal horticultural board and the U. S. bureau of plant industry be urged to maintain their present policy of close cooperation and to extend their assistance as financial considerations permit."

A committee was appointed to codify the present quarantine law of various western states, Hawaii, British Columbia and Lower California because "there is a decided lack of uniformity in the now existing plant quarantine laws and rules of the western states, which presents material difficulties to the various state quarantine officers in giving the best and most efficient service and also places a most difficult task upon the transportation organizations of the Pacific Coast to properly comply with the provisions of the various state plant quarantine laws and rules."

Laxity in the enforcement of Federal Quarantine No. 26 against blister rust of the white pine, and in the interstate shipment of white pine trees, currants, gooseberries and other host plants was condemned in extended resolutions. It was resolved that the states west of the Mississippi unite in maintaining quarantine against any state not enforcing Federal Quarantine No. 26.

Furthermore, that efforts be made in cooperation with the federal horticultural board to secure the exact listing of contents on the outside of all packages containing plants or plant products in interstate commerce and that steps be taken to file such information relative to interstate movement of plants as a precautionary measure in pest control.

"Be it further resolved that this board commends the work of the federal offices of forest pathology and blister rust control and urges the continuation of their work with more adequate appropriation to permit of effective protection of the forest resources of the West, as well as continuation of research, experimental and demonstration work for control of the blister rust in the Eastern infected regions."

"Whereas the federal horticultural board and the U. S. bureau of plant industry are rendering highly valuable service to the Western state quarantine officers in the examination of nursery stock in transit at railway mail terminals and express and freight transfer points, be it resolved that this board urges the continuation of such federal inspection and requests that the proper Western state inspectors be notified of all plant shipments observed in transit to Western points and that any shipment passing through in violation of federal or state quarantine laws be suitably tagged."

Attention was called to the fact that Australia has placed an embargo on the shipment of fruit or nursery trees of pears to any of the Australian states. This because of fire blight. And it was resolved "that said departments of agriculture be respectfully requested to initiate and carry out, without delay investigations to determine whether or not any danger exists of the fire blight organism (Bacillus amylovorus) being carried to Australia in a viaible condition in shipments of fruit with a view to obtaining a modification of the embargo as relates to fruit, in case no such danger shall be found to exist."

Because of the danger of introduction of fungus blight of the filbert, which does not now exist on the coast, it was resolved that the federal horticultural board of the United States department of agriculture make an immediate investigation and take such steps as may appear necessary in order to prevent the introduction of this disease on the Pacific Slope.

The New California Standard Apple Act

By S. V. Christierson, State Department of Agriculture

IN August 3, 1921, the Standard Apple Act of 1917 will be superseded by the new "California Standard Apple Act" passed by the 1921 legislature. Although in most respects very similar to the former apple law certain changes have been made which should be noted by growers, packers and shippers interested in this particular industry.

The principal changes in the requirements of the "California Fancy" grade are that the tolerance of defect for apples within a given container has been increased from three to five per cent. The tolerance of total defects of all kinds remains at ten per cent. This increase was considered necessary as a three per cent tolerance was hardly sufficient for practical purposes and could not be rigidly enforced. It is the intention of the standardization service to strictly enforce this five per cent limit on tolerance. Another important change in the requirements of the California Fancy grade is the removal of the 2¼ inches minimum diameter. Under the new act any apple, no matter how small, if meeting all other grade requirements, may be packed as "California Fancy." The requirements as to uniformity in size within the same container as described below must, of course, be complied with, in addition. Instead of requiring that stems be retained in all apples packed in California Fancy grade, with the exception of Gravensteins, the much simpler requirement that no apples with skin broken at stem may be packed in this grade has been substituted.

In the "B" grade the most important change is the permit to pack apples showing scab spots not larger than one-fourth of one inch in diameter in the aggregate. This conforms quite closely to the apple standards of the Northwestern states. The tolerance of defects has been increased from three to five per cent as in the California Fancy grade.

The same changes regarding scab spots and tolerance of defects have been made in the "C" grade as in "B".

All apples should be packed in the standard box of the following dimensions, inside measurements: Depth 10½ inches, width 11½ inches, length 18 inches, and having a cubical content of as nearly as possible 2,173½ cubic inches. Other containers, "California Box," the pear box, lug boxes, etc., may be used if marked in letters not less than one-half inch in height, "Irregular Container." The practice of marking this legend on boxes in type ranging from one-eighth to three-eighths inch in size will be discouraged, and boxes not properly marked will be held until proper markings are affixed.

The following markings are required on each box of packed apples:

Name and address of grower.

Variety.

Grade.

Date of packing.

Number of apples in box, or net weight.

Tier markings may be employed at the option of the packer or shipper providing that the tier markings correspond to the following minimum diameters: 3½ tier not smaller than 3⅛ inches; 4 tier not smaller than 2⅝ inches; 4½ tier not smaller than 2¼ inches; 5 tier not smaller than 1⅞ inches.

Under the new act a close check will be made to note that tier markings correspond to these sizes as prescribed under Section 3, subsection B of the law. Apples not meeting size requirements as labeled will be considered packed in violation of the statute, and apples smaller than the size indicated by tier markings will be considered as defective apples and below the tolerances prescribed for defects.

It should be noted that apples infested with insect pests (wormy apples) can only be sold for the express and sole purpose of manufacturing the same into apple by-products, although the grower may sell such wormy or diseased apples as part of his crop in bulk to a packer or may himself manufacture such wormy or diseased apples into apple by-products, such as cider, vinegar, dried apples, etc. It should also be noted that it is unlawful to import any infected or infested apples from outside the state of California, for any purpose whatsoever.

A new provision of the law specifies that "on each container of apples which has been held in cold storage for more than 15 days after being packed a statement showing the fact that the contents have been held in storage" must appear.

The director of agriculture is charged with the enforcement of the California Standard Apple Act, and for that purpose has the power to

(a) Enter and inspect every place within the state of California where apples are produced, packed, shipped, delivered for shipment, offered for sale, or sold, and to inspect such places and all apples and apple containers and equipment found in such places.

(Continued on Page 54.)

Agricultural News Notes of the Pacific Coast

Northern California

Almond buyers are offering growers 18 cents for new crop Nonpareils.

Contra Costa farmers are in the midst of another squirrel poisoning campaign.

Graders are at work on the Coyote Valley section of the Ukiah-Tahoe highway.

Colusa County fruit and vegetable growers report some damage by heavy north winds.

The Butte County farm bureau is planning to build community cold storage houses.

Movement of cattle and sheep to mountain ranges still continues from Butte County.

During the month of May the port of San Francisco carried on foreign trade with 62 foreign lands.

Eighteen peach orchards have been entered in the Sutter County farm bureau peach growers contest.

Alameda County farm bureau has appointed A. J. Garin secretary-manager and marketing manager.

A poultryman's picnic will be held August 2 at the poultry demonstration plant of the Alameda County farm bureau.

Gas rates in Northern California have been cut by the state railroad commission six cents to ten cents per thousand cubic feet.

Over 100 farmers of Glenn and Colusa Counties met at Willows, July 2, and effected an organization to protect their lands from damage by seepage from rice fields.

Fruit growers of western Oregon are becoming much interested in apricots. A considerable acreage of apricots is signed up with the Oregon Growers Cooperative Association.

Thirty cents an hour, with a ten hour day, and a maximum rate of ten cents a box for piece work in the present fruit season, have been established as the wage scale for farm and field labor in Alameda County.

The last of the state university experiment station herd of 430 head of cattle was taken from Shingle Springs, Eldorado County, to summer range on Peavine Ridge, on June 15. All of the cattle were weighed and tagged prior to being taken away.

Horticultural Commissioner Mills of Butte County estimates fruit crops: Almonds, 35 per cent; figs, 100 per cent; grapes, 90 per cent; olives, 60 per cent; oranges, 100 per cent; peaches, 30 per cent; pears, 55 per cent; prunes, 50 per cent.

The joint irrigation committee of the Yuba County farm bureau and chamber of commerce has issued warning to farmers of southern Yuba County that prompt action must be taken to insure irrigation rights from the Yuba River because of the numerous filings made by Nevada County land owners.

A farmers' public market has been established at Tenth and Market Streets, San Francisco, by orchardists of Santa Clara County. The plan is to sell with the fruits sugar and preserving jars at cost as an added inducement to the housewives of San Francisco to purchase quantities of fruit for preserving.

Central California

Delano, Kern County, is shipping watermelons.

Rosedale, Kern County, is discussing formation of a mutual telephone line.

Turlock growers of cantaloupes are urging strict enforcement of standardization.

The County Supervisors Asociation of San Jauquin Valley met July 2 at Bakersfield.

Hog auction sales will be held in Kern County at Bakersfield, July 16; McFarland, 29.

Many apricot growers in the Kerman district of Fresno County are drying their own fruit.

Mrs. George Robinson of El Nido is the new home demonstration agent for Merced County.

The Kings County cannery is in full swing on apricots, 300 women and 170 men being employed.

Turlock watermelon fields are marketing rather later than usual because of the cold, late season.

Most of the apricot growers of the Hughson district of Stanislaus County are drying their own fruit.

The boys agricultural club at Shafter, Kern County, has nearly finished its potato growing contest.

At the recent annual meeting of the California Peach and Fig Growers at Fresno all officers were reelected.

Horticultural Commissioner Haupt of Kings County estimates shipment of 300 carloads of Elberta peaches.

Storm waters will be turned into Dry Creek next winter to avoid congestion at the Fresno city sewer farm

Kern County farm bureau held dairy improvement meetings at Wasco high school July 7, and at Panama school July 8.

The shipment of fresh figs to Chicago brought 30 cents a pound June 28. The fruit arrived in first class condition.

The Fruit Growers of California named prices on canning apricots June 25: No. 1 fruit (14 to pound), $80 per ton; No. 2, $65.

Farm home department meetings will be held in Kern County at Weed Patch, July 19; Inyo-Kern, 22; Kern-Delta, 26; Wasco, 28; Edison-Fairfax, 29.

Kern County farm center meetings: Mountain View, July 18; Pond, 20; Inyo-Kern, 21; Rosedale, 22; Shafter, 27; Arvin, 29; board of directors at Bakersfield, 30.

The Apricot Growers Association membership at Hughson, Stanislaus County, is marketing 400 tons of apricots. The prices set are $52.50 a ton for Tiltons and $50 for Blenheims.

The newly published census report for 1920 shows Kern County ranking sixth in the 58 counties of California in percentage of gain in value of farms and farm lands in the ten year period from 1910 to 1920.

Fresno has been selected again as international headquarters of the International Union of Fruit and Vegetable Workers, which claims a membership of over 2,000 in the principal fruit centers of the United States and Canada.

Southern California

The Salton Sea has fallen six inches since April 26.

Palo Verde Valley made shipment of Malagas, July 4.

Ventura lemon growers are happy over the hot weather prices.

Riverside County's playground at Idyllwild is proving very popular.

Hemet, Riverside County, is planning to build a community theater.

The Oxford sugar factory is expected to start slicing beets July 30.

Santa Ana reports sale last week of a ten acre orange grove for $60,000.

A bean pool for Red Kidneys and Blackeyes has been formed in the Ontario-Chino district.

The Orange County farm bureau is discussing advisability of having a home agent appointed.

The community picnic of Covina Valley at Ganesha Park, Pomona, was attended by 850 people.

Downey, Los Angeles County, will hold its community fair, August 25-27. H. Koopman is secretary.

Escondido, San Diego County, is considering an ordinance prohibiting keeping of goats in city limits.

The Ventura County supervisors have decided upon the Dennison route for the permanent Ojai grade.

Harvesting of milo in Imperial Valley will begin the latter part of the month with few buyers in sight.

Orange County reports walnuts sizing up in fine shape, with very little blight and few worms in evidence.

Supervisors of Orange County have awarded contract for building a new bridge across the Santa Ana between Olive and Richfield.

The home department of the Apple Valley farm center at its June 30 meeting took up dressmaking under direction of State Specialist Miss Decker.

Over 4,000 acres of Blackeye beans have been signed in the Irvine marketing pool. It is expected that at least 10,000 acres will eventually be signed up.

The Palo Verde Cotton Association has completed plans for the pooling of this season's crop. All its gins have been overhauled and are ready for work.

The rush of work in Orange County apricot orchards began after The Fourth. Canneries have taken so little of the fruit that many are drying their own.

Three hundred employees of the Santa Paula Citrus Association are busily rushing into the market all available lemons to meet the present Eastern demand.

"Yucca hounds" is a suitable designation for the Sunday autoists who are denuding the hillsides of the stately blossom stalks. Protests are coming from public spirited citizens all over the south.

The Antelope Valley Alfalfa Growers Association has petitioned the railroad commission for reduction of freight rate to Los Angeles. The present rate is 19½ cents per cwt., while the rate from Bakersfield to Los Angeles, over twice the distance, is 24 cents.

The Coast and General

Klamath County, Oregon, has a new cow testing association.

Oregon cherry growers are getting 3½ to 4 cents from canners.

Raymond, Washington, cranberry growers are asking appointment of an inspector.

Southern China exports considerable quantities of oranges to all points in the Far East.

The prune crop is light in the Walla Walla district of Washington owing to the wet cold spring.

The Oregon Growers Cooperative Association now has a membership of 1,806, controlling 30,781 acres.

The Siamese government has discontinued its board of rice control and rice may now be freely exported.

Arrangements have been made for holding a community fair for western Lane County, Oregon, at Florence next fall.

All animals offered for sale by members of the Oregon Jersey Cattle Club will carry the guarantee of the association.

The Oregon Growers Cooperative Association has signed up 1,000 acres of fruit and berry land in The Dalles district.

It is estimated that acreage planted to clover in Marion and Polk Counties, Oregon, is 250 per cent greater this season than last.

At the recent annual meeting of beekeepers of Marion County, Oregon, G. A. Bock of Silverton was elected president and W. H. Bowers of Willard, secretary.

Three million bushels of wheat have been signed in North Dakota to be marketed through the United States Grain Growers, Inc., practically all of it being pooled.

Berry growers in the Chehalis section of Washington will this year try the experiment of sending refrigerator cars loaded with berries into the larger Eastern markets.

Frost warnings will again be sent out by the U. S. weather bureau to orchard districts of the Pacific Coast. A $9,000 appropriation for this purpose has just become available.

The Cuban government has purchased 1,000,000 tons of sugar to withhold from the market as long as necessary. The amount of sugar on hand in Cuba is stated to be 2,000,000 tons.

Northeastern Washington's 1921 apple crop, based on present conditions and prospects, will exceed any previous crop by 15 to 20 per cent, with Spokane Valley showing the largest increase.

In his address at Oregon agricultural college during farmers week Organization Manager Ward of the Oregon Wool and Mohair Association stated that 18 state wide wool marketing associations are now in operation.

During the month of May 3,144 cows were tested in the six Oregon cow testing associations. The average yield of milk was 986.6 pounds and of butterfat 39.47 pounds. This is the highest average yet reached in the tests.

Shade for the Cows

By R. P. Royce

THERE is a close and direct relation between the physical comfort of dairy cattle and the milk or cream check, and if the cow owner is interested in the latter he must concern himself with the former, else his pocketbook will suffer along with his bovine charges.

It should not be necessary to call attention to the need in California for some sort of shade for livestock, but a trip through many of the principal producing sections gives one the impression that many owners place undue value on our California sunshine. To imagine that a cow can do her best when confined in a dry lot with no more shade than is afforded by an alfalfa rack is a reflection on the intelligence of the owner and a sad commentary on his humaneness. Yet in many sections of the state hundreds of dairy cows are forced to stand all day in the pitiless rays of the summer sun with the further aggravation of flies.

Such a condition might be excused in a measure if it were not possible to provide the needed shade at small expense. In nearly every section of California some variety of shade tree will make rapid growth and with reasonable care can be made to furnish ample shade in summer and protection from raw winds in winter.

The method of providing shade makes little difference. Trees planted around the barn lot and protected while small from the cattle furnish the cheapest method. A cheap shade can be secured by covering a shed frame with hay, straw, brush, palm leaves or bamboo.

If protection from rain and mud is wanted the type of shed illustrated has proven highly satisfactory at the university farm and on numerous other ranches. The cost of such a shed is not great as compared to the comfort of the cows in summer and winter, and it is capable of demonstration that such a shed will pay for itself through the increased production of the cows.

A shed of the type shown can be made to accommodate any size herd by adding additional units to the sides or increasing the length. By running fences through the shed two or more lots can be protected. If a concrete floor is put in it will add to the comfort of the cattle in the muddy weeks of winter and spring.

Aside from furnishing much needed shade trees add much to the attractiveness of the ranch, a fact that is too little appreciated by many California ranch owners.

Cow Comfort in Summer and Winter

This shed has proven a valuable adjunct to the dairy equipment of the University Farm, Davis. The original plans were worked out by the Hopland Stock Farm.

Sweet Clover in Arizona

By S. P. Clark, Assistant Agronomist, University of Arizona

SWEET clover is one of the oldest forage crops known, but it is only recently that it has been appreciated or used to any extent for hay and pasture in this country. Some of the reasons for its lack of popularity are the tendency to become a weed on untilled fields, the refusal of stock to eat the hay readily until they become accustomed to the bitter taste, and the tendency of the plant to become woody as it approaches maturity.

During the last few years the value of sweet clover as a soil renovator has been demonstrated and the acreage for this purpose is increasing very rapidly. Likewise the value of the crop for hay or pasture has been proven, and at the present time it is being grown in practically every state. In Arizona it has a place in short rotations or where alfalfa cannot be grown successfully.

Varieties

There are four important varieties: Biennial White (Melilotus alba), Biennial Yellow (Melilotus officinalis); Annual Yellow (Melilotus indica), and Hubam clover, an annual white variety. This discussion applies primarily to Melilotus alba, which is the variety most commonly grown, most highly advertised and best known.

The biennial white sweet clover plant has an erect, stemmy, branching form of growth, the stems being only moderately supplied with leaves. The first season it makes a growth of 15 to 30 inches in height, but during this period it is developing a long, strong root system and storing up reserve plant food for rapid growth and for seed production the second season. The young sweet clover plant resembles young alfalfa but can be distinguished by its bitter taste. During the second season it will make a growth of from three to ten feet, depending upon moisture and soil conditions.

Sweet clover is adapted to a wider range of climatic conditions than most of the true clovers. All varieties are used for green manure and all of them are excellent honey producing plants and are quite extensively used for this purpose.

The large growing, yellow flowered biennial variety is similar to the biennial white flowered variety, but it has a more spreading, prostrate habit of growth. The mower is likely to pass over the lower branches, and these being left to form seed for further propagation, it may, if in a mixed meadow, increase to such an extent that it will crowd out other plants and thus become objectionable. This variety blooms one or two weeks earlier than the white flowered variety and is often used to supplement the latter as bee pasture.

The small annual yellow flowered sweet clover, commonly known in Arizona as sour clover, is a low growing, erect type of plant. It is used extensively in some parts of California as a winter cover crop for orchards and for green manure. It becomes a pest sometimes and has been considered a weed in wheat fields in the irrigated valleys of the state.

Hubam, annual white flowered variety found and propagated by the Iowa experiment station. This variety is coming into general use in some localities. It is claimed to be especially valuable in short rotations and for bee pasture.

Soils

Sweet clover thrives on most of the principal soils of the United States—adobe, granite, gumbo, hardpan, prairie, and heavy clay. It does not thrive on very dry sandy soils, although it does well in sandy ground if plenty of moisture is present. It does not thrive on an acid soil.

Sweet clover thrives on soils that are too alkaline for small grains or alfalfa. However, it frequently happens that after sweet clover has been grown on such soils for a few years they can be planted to alfalfa with good success. Sweet clover will generally survive in ground where salt grass is growing naturally and will furnish a more satisfactory pasture. There is, however, a limit to the amount of alkali it can stand and make a profitable return.

The large tap roots of sweet clover will penetrate tight or compact subsoils and loosen them, thus enabling crops that follow to increase their feeding area. The large tap roots decay very quickly after the plants die, and the open spaces left by this decay improve the drainage and aeration of compact soils.

Seeding

Low germination is frequently due to hard seed (seed having a hard outer coat), which does not permit water being absorbed in sufficient quantity to cause germination. Because of this fact all seed should be tested before planting. The per cent of germination of hard seed can be greatly increased if the seed is subjected to alternate freezing and thawing. This is the reason why seed that gives a low germination in the tester will often give a high germination when planted in the fall and allowed to lie in the ground during the winter months. Some seed houses scarify the clover seed before selling. This usually is done by blowing the seed with great force against sandpaper, which scratches the seed coat, enabling it to absorb water more readily.

Sweet clover is very similar to alfalfa in its seed bed requirements. It must have a well settled, firm seed bed with enough loose dirt to cover the seed. Where the planting is to follow an intertilled crop and the ground is free from weeds, disking will be sufficient. The soil should be well filled with water before planting.

In the warm valleys of Southern Arizona, or other localities of similar climatic conditions, seeding has been successfully accomplished from October 1 to April 15. However, the best time is probably in late January or in February. In higher altitudes fall or spring seeding rather than winter seeding is advisable.

Where the seed bed is in first class condition and the seed is known to be of good quality, 10 to 15 pounds of seed per acre is sufficient. With a poor seed bed, or if the seed is of uncertain quality this amount should be increased.

When possible to use it, the best method of seeding is with the press drill. This covers all the seed to a uniform depth. Very good results may be secured by broadcasting and harrowing in. This method will require more seed than if a drill be used. The method used in seeding alfalfa will be suitable for sweet clover in the same locality. Nurse crops are not necessary and usually they are not desirable.

Cutting

In sections where only one crop is to be harvested the first season, it may be left until it reaches its maximum growth in the fall. When two or more crops are to be harvested the first year the first crop should be cut when the field has made an average growth of 30 inches. The second season the hay crop should be cut before the flowers appear and the stems become woody.

The new growth (after the first cutting) of the first year is produced from buds on the crown of the plant. The first cutting should be delayed until the plant is old enough to have formed these buds. Sweet clover should be cut for hay before the plants bloom and the leaves begin to shatter.

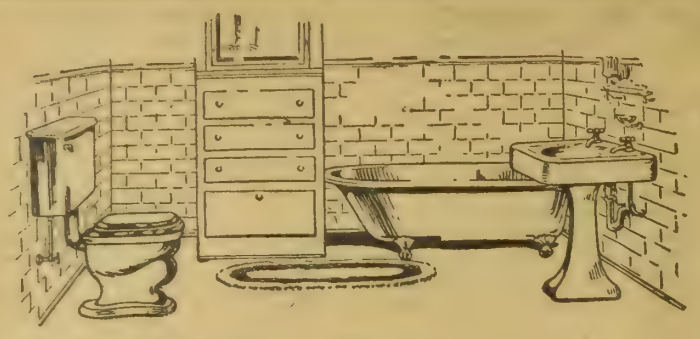
The first crop the second year comes from crown buds. The new branches which produce the second crop of the second year are produced from buds formed in the axils of leaves left on the stubble.

When cutting the first crop of the second year the sickle bar should be set at a height that will leave sufficient buds on the stubble to produce the next crop. It is very important that sweet clover growers observe the statements in the above paragraph.

Curing

Sweet clover is more difficult to cure than red clover or alfalfa, as the leaves are likely to shatter before the stems are cured. The leaves contain the greater per cent of the food value and every precaution should be used to retain them. A successful method of handling the hay crop is to rake as soon as the plant is well wilted, or early in the morning while the dew is still on. It should be cocked immediately after raking, leaving in

(Continued on Page 56.)



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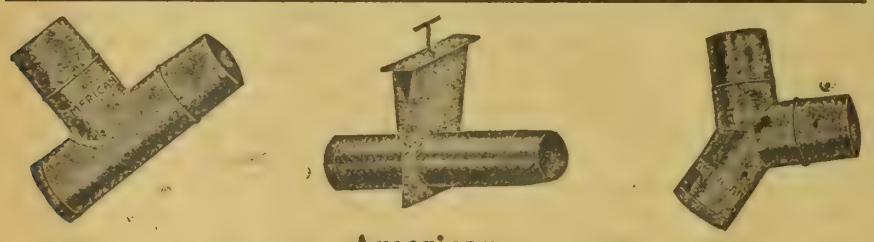

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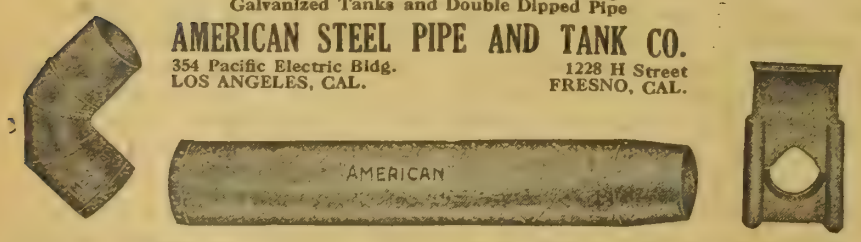

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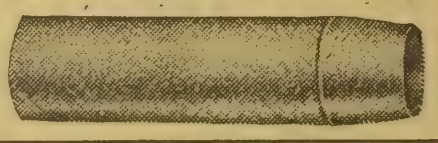

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THE NEW CALIFORNIA STANDARD APPLE ACT

(Continued from Page 51.)

(b) Provide a uniform method of stamping or otherwise marking or identifying packages of apples which have been inspected by him or his deputies or inspectors. (New.)

(c) Appoint, superintend, control and discharge all apple inspectors and fix their compensation.

(d) Seize and retain possession of any apples packed or sold in violation of the act.

(e) Prosecute violators of the act, and institute condemnation proceedings on apples packed in violation of the act.

(f) Issue certificates of inspection.

(g) Establish, promulgate and enforce rules and regulations governing the inspection of apples, and the use of apple stamps.

For the privilege of affixing to or using upon any container of apples the stamp or other designation provided by the director to identify apples which have been inspected by a duly authorized state inspector there shall be paid to the department of agriculture three-fourths of one cent for each container bearing such stamp or designation. Such stamp or mark shall not be affixed to any container of apples which has not been inspected, or which is not one of a unit of like containers so inspected. The use of a facsimile of such stamp or mark not manufactured for or by the department of agriculture cannot be used, in fact it is a violation of the act to employ any stamp or mark which in any manner infringes on the state's prerogatives in this respect, and is a misdemeanor.

For any violation of the California standard apple act the law imposes a minimum fine of $50 and a maximum of $500 and imprisonment for six months or both.

Any common carrier, railroad company, express company, etc., is specifically given the right to refuse to ship any apples which have been rejected by inspectors for being packed in violation of any of the provisions of this act and may at the risk and expense of the consignor return to the consignor or hold such shipments.

Apples may be sold loose in lug boxes or other containers, if meeting at least requirements of C grade. This means that such apples must be free from worms (codling moth) or decay. Containers of loose apples need not be marked in the same manner as packed containers, in fact no container markings are required. It should be observed, however, that if there is any placing or facing of the apples within a given container or attempt at a regular compact arrangement, such apples shall be considered packed within the meaning of the act, must meet all requirements of the law, and containers of such stock must be marked in accordance with the terms of section 3.

THE ALMOND TARIFF

Bankers and business men have been awakened to the dire financial consequences to the state if duties on almonds as proposed in the tariff bill now on the floor of the house are not revised. They are wiring California representatives and senators and members of the house ways and means committee, pointing out that almond growing in California, which will be worth $15,000,000 annually to the state within the next two or three years under adequate tariff schedules, will disintegrate if the bill is not amended. William H. Crocker, president of the Crocker National Bank of San Francisco, sent the following telegram to members of the house ways and means committee: "Am convinced committee has erred in recommending four cents tariff on unshelled almonds and eight cents on shelled. Ratio should be three to one, which is natural shelling ratio of almonds. If allowed to stand proposed schedules will work serious harm to California financial interests, not to mention virtual destruction of industry. Three hundred thousand dollar shelling plant in Sacramento now closed. Won't you stretch point and revise almond schedules on three to one basis at this late hour? One hundred thousand acres of California soil on which are planted seven million trees are at stake. California growers simply cannot touch American market for shelled almonds representing 80 per cent of demand now in hands of European growers with eight cent schedule."

Sixty thousand California farmers ranged themselves behind the almond growers at a meeting in the offices of State Market Director Maddox at San Francisco. The representatives of their cooperative organizations framed a set of resolutions and a telegram to members of the ways and means committee of the house and the California congressional delegation stating: "We view with greatest concern reported tariff schedules announced when we had been positively assured of schedules that would protect our basic agricultural industries, which the reported rates fail to do." The telegram contained a demand for immediate revision.

A NEW AVOCADO

Two fruits of a new variety of avocado recently found their way to the editorial rooms of the Cultivator and, when ripe, were duly consumed by the appreciative epicureans who lie in wait for just such dainty morsels.

But we will not lie in weight. The fruits weighed 18 ounces each, the seed of one was a scant ounce, of the other seven-eighths of an ounce! The flavor was of the best, fiber none, shell thin, scarcely more than a hard skin. The color of the latter was a

Thompson Avocado

rich chocolate brown, shading to purplish tints. The fruits run to a pound and a half in weight and ripen from February 1 to April 1. All remaining will fall off by June 1.

The history is of about 40 seeds sent from Atlixco, Puebla, Mexico, whence came the Fuerte, Puebla and Atlixco avocados. The seeds were from one tree, known to bear the smallest seeds, compared to size of fruit, of any tree at Atlixco. Eighteen of the seeds grew and produced trees, now eight years of age. Our subject, this, its first year of fruiting, produced 44 good fruits; one other tree bore one. The remaining 16 are yet to demonstrate crop performance. The tree is said to be a little hardier than the Fuerte, certainly a strong recommendation. The owner has no stock of budded trees or buds for sale at present. This most excellent and promising variety has been named Thompson.

WORMS DESTROYED

The worms that do so much injury to currant and gooseberry bushes at this time of year are very easily destroyed by an application of white hellebore, which may be obtained at any drug store. Use one ounce of the powdered hellebore to a bucket (about three gallons) of water and thoroughly spray the bushes.

Many Insulators!

What different kinds of materials make good electrical insulators? Rubber, glass, porcelain, wood and *numberless* others! There are in fact dozens of such insulators found in nature that meet all the *usual* requirements. But—

A Few are Porous!

In a storage battery the insulators must be *porous* to let the battery solution circulate freely. How many materials that are good *insulators* are also sufficiently porous? Of these, how many also are *durable* enough so that the battery will never have to be *re-insulated* during its life? Not one such *natural product* is known. But—

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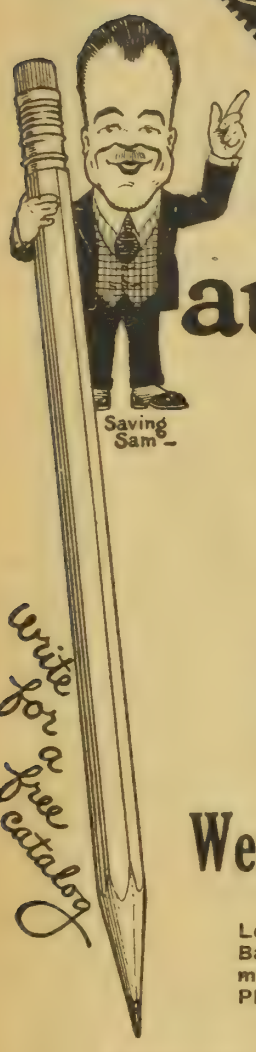

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SHASTA COUNTY FARM BUREAU FAIRS

The Shasta County Farm Bureau Fair will be held October 6, 7 and 8 in Anderson. The president is S. G. Roycroft, Anderson; secretary, Mrs. Wm. H. Formey, Anderson.

The Fall River Fair will be held September 7, 8 and 9 at McArthur. Our county is so large and divided by mountains, so the farm bureau holds two fairs.

One of the features of the fair in Anderson this year is our "Pork Day," when ten farm bureau centers will have ready for auction a carload of fat hogs, each center competing for prizes. This is being held to stimulate interest in better hogs in the county. October 9 will be Pork Day. —Shasta County Farm Bureau Fair, Mrs. W. H. Formey, Secretary.

BARK-GRAFTING AVOCADOS

E. E. Knight of Yorba Linda, Orange County, is topworking his Rey avocado trees through bark-grafting in the large trunks of nearly a foot in diameter, a method in which he appears to have decided success. He believes that while some trees require more than one graft there is a decided advantage in growing a new top from one central graft. He says: "In this way I can get a better balanced tree." Farm Adfiser Hodgson of Los Angeles County and the writer recently visited the Knight orchard and saw some of these grafts but a month or a few weeks old that were more than a foot high, well foliaged and of figorous growth.—E. B.

CALIFORNIA HORTICULTURE EXHIBITION

The advance schedule of premiums is out for the California Flower and Horticultural Exhibition to be staged by the California Association of Nurserymen, at Exposition Park, Los Angeles, October 20, 21, 22, 23. After pages and pages of ornamentals we come to fruits in the deciduous and ornamental classes, both hardy and subtropical. In oranges alone there are prizes offered for 26 named varieties, seven of lemons, six of limes, four of pomelos (the name grapefruit is not used), and four odd citrus fruits such as tangelo, citrange, bun-tan and citron. Then come lists of avocados, dates, jujubes, Natal plum, Brazilian cherry, carob, feijoa, cherimoya, sapote and mango. The last division of entries is for trees of these kinds and sorts. It is evident provision has been made for the largest and most varied flower, fruit and plant exhibit ever attempted in Western America. "All California" is some field to draw from.

SPRAYED APPLES PRODUCE BEST FRUIT

When apples on sale show evidence of having been sprayed, they are probably good apples, say specialists in the bureau of plant industry. A vigorous campaign is being carried on by the department among fruit growers to show them that by proper spraying they will develop the finest quality of fruit, free from plant diseases and insect pests. Similar attention to spraying some vegetables must be given to assure the best results. At the same time that the consumer is urged to demand sprayed apples, tomatoes or celery for his own satisfaction, it is recommended that all market supplies be thoroughly washed before they are either cooked or eaten raw. This is important not only because of the likelihood of contamination which the food has undergone through street dust and handling but for the sake of removing any spray residue which may remain.

GROW OUR OWN FIGS

Progress made in growing and packing California figs bids fair to sound the knell of the foreign fig in the United States, according to E. S. Moorhead, chief of the food division of the California Peach and Fig Growers, who returned this week from a two months tour of Eastern markets. Moorhead bases his prediction on the tremendous interest buyers in the East are taking in the California fig.

"The East has awakened to the food value and delicious qualities of this fruit," says Moorhead. "They realize back there that the industry is new yet by demonstrating this fall that California can produce a fig equal to any grown anywhere, the sentiment in favor of buying American figs can be utilized to build up the state's infant industry."

Mr. Rixford recently told us that he had learned of an incident where California cured figs were submitted to fig experts in Asia Minor and they declared they were produced in Smyrna. When told they were California produced they declared that large Smyrna exports to America would ultimately end.

DATES IN LOWER CALIFORNIA

While dates are grown to a small extent all over Lower California, the center of date culture is probably San Ignacio. This little town of some 700 inhabitants, situated at the center of the peninsula, can be reached from San Ignacio Lagoon, 40 miles away on the Pacific, or from Santa Rosalia, a port on the Gulf of California 66 miles away. Dates from San Ignacio are marketed exclusively in Mexico, since they are not dried or packed in a manner that would be pleasing to American tastes.

The local price ranges around two cents gold per pound. Since these dates are of a superior quality, it is likely that if handled by modern methods and put out in attractive containers they would find a ready market in the United States. Date brandy and date preserves are by-products. The brandy finds a ready market in Lower California, and the preserves are consumed locally. In 1920 Swiss and German interests installed a drying oven, but the experiment was not a success.

SWEET CLOVER IN ARIZONA

(Continued from Page 53.)

the cock for several days, or until the stems are thoroughly curred, when it may be stacked. The cocks should be small in order to avoid tearing apart in handling, as this causes unnecessary shattering of leaves.

When cut at the right time and properly cured, sweet clover hay is relished by all classes of livestock. When it is fed to growing stock the gains in weight compare favorably with those secured when alfalfa is used. Occasionally it is necessary to force animals to acquire a taste for the hay, but usually this is not the case.

Silage

When allowed to become well matured sweet clover makes good silage. If it is too green to put in the silo, it may be ensiled by mixing dry fodder or straw with the clover. This extra dry matter will absorb the excess of moisture and a very good silage will result. However, it is not recommended that sweet clover be grown primarily as a silage crop.

Pasture

Sweet clover makes first class pasture for all kinds of livestock. Cattle, hogs, sheep, horses and chickens relish it after the taste for it has been acquired. The easiest way to develop the appetite for sweet clover is to begin pasturing in the spring before other green feed is available. This crop has one advantage over alfalfa, namely, it does not as readily cause bloating of stock. In order to avoid the slight chance of bloating, the animals should not be turned onto the pasture immediately after a rain or while the clover is wet with dew.

Not a Substitute for Alfalfa

Sweet clover must not be considered as a substitute for alfalfa where alfalfa can be grown successfully. Its principal uses are in short rotations where a legume is desired; as a green manure crop; as a legume crop to be planted on alkali soil; or for hay or pasture in localities where alfalfa cannot be successfully grown.

Dry grass on uncultivated lands, ditch banks and roadsides is being burned to prevent an outbreak of grasshoppers in the Patterson district of Stanislaus County.

Calcium or Lime Compounds

By R. E. Henderson

There has been so much of interest in calcium as a soil improver that the California Cultivator is justified in gathering available information as to the different forms of calcium and their effect on the soil. In the issue of June 18 on page 801 Dr. Snowden discussed "Lime and Liming." While he referred to sulphate of calcium or gypsum the article was principally given to the other forms and to their advantages. Herewith is an article also by an agricultural chemist who has a valuable fund of information as to gypsum.

THE continual misuse of the word "lime" makes it necessary to deal with that aspect first. The four common calcium compounds about which this uncertainty of name exists are: Hydrated calcium sulphate, gypsum, lime sulphate, calcium carbonate, limestone, lime carbonate, calcium hydroxide, slacked lime; calcium oxide, quick lime, burnt lime. The term "lime" is frequently indiscriminately applied to any and all of these compounds. A cursory inspection will show that the word "lime" is used in the place of the word "calcium." When the word lime is used alone, therefore, it must naturally leave a doubt in the mind as to just which lime compound is meant. If the word lime must be used alone, let us standardize the word and give to it the same meaning as the chemist gives, namely, calcium oxide. By standardizing the name and giving to other calcium compounds their full name, we will avoid confusion and perhaps save a great deal of loss through a confusion of directions.

Calcium oxide is a very powerful base and owing to its corrosive action is very rarely used for agricultural purposes. It combines very readily with moisture and when combining gives out heat. When it comes into contact with humus, it burns or chars it. When it comes into contact with nitrogenous compounds in the soil it liberates nitrogen as ammonia, which evaporates and is lost.

Calcium hydroxide, or slaked lime, is obtained by adding water to calcium oxide. The two combine and at the same time give off heat. Just sufficient water must be added to complete the reaction and at the same time leave the slaked lime dry. Calcium hydroxide is a powerful base and is very successful in neutralizing acid or sour soils and making them slightly alkaline. It also has a caustic action and liberates ammonia and is not the most desirable form in which to add calcium, though in the case of a very acid soil or where quick action is desired it may be very satisfactory in the hands of a skilled user. It has a slight action on some of the insoluble compounds in the soil which contain potash and phosphates, liberating these and making them available to the plant.

A little experiment will readily demonstrate how ammonia is lost in the presence of burnt lime and slaked lime. Take a teaspoon of sulphate of ammonia and dissolve it in a dessertspoon of water, add a teaspoon of either burnt lime or slaked lime and then smell immediately above the liquid. The smell of ammonia amply proves the loss of nitrogen as ammonia that is continually going on in the soil when either of these two compounds are added to it.

Calcium carbonate, or limestone, occurs naturally either as rock deposits or as shell deposits. When calcium carbonate is heated, carbon dioxide is driven off and calcium oxide is left, which combines with water to form calcium hydroxide. On exposure to air or being air slaked, calcium hydroxide absorbs carbon dioxide and becomes calcium carbonate. However, air slaked lime is not wholly calcium carbonate, but is rather a mixture of calcium carbonate and calcium hydroxide. Limestone is very insoluble in water but is readily acted upon by acid. When it is applied to an acid soil a reaction readily takes place with the consequence that the soil is made neutral and flocculated. Owing to the insolubility of calcium carbonate it is the least positively active of all calcium compounds and for a reaction to take place the other compounds must display a positive activity in connection with calcium carbonate.

If the soil is compact because it is acid, calcium carbonate is successful in opening it up. If the soil is just naturally heavy calcium carbonate is only moderately successful. As calcium carbonate is insoluble in water it does not have any appreciable effect on the insoluble compounds in the soil. Though from the technical viewpoint it is presumed to liberate plant food from the soil, its action is so small as to be unworthy of practical consideration.

Gypsum, or hydrated calcium sulphate, is altogether distinct from the other forms of calcium. It is formed by a combination of calcium oxide and sulphuric acid and is absolutely neutral. Gypsum is not so soluble as calcium oxide or calcium hydroxide, but is more soluble than calcium carbonate. Gypsum is formed from a stronger acid than calcium carbonate and in addition is more soluble. It thus has a very decided chemical action on various compounds. The fact that it liberates potash and phosphoric acid to the plant and that it opens up heavy soil and compacts light soil are too well known to require further discussion. The two properties which are largely responsible for the widespread interest now taken in gypsum are the supply of sulphur and the stimulative action of gypsum on bacteria.

The importance of sulphur as a fertilizing ingredient has long been underestimated. Experiments and demonstrations conducted in all parts of the country have now proved that sulphur plays as important a part in the growth of the plant as does any other element. Gypsum contains sulphur in the form most available to the plant, i. e., sulphate sulphur. In addition gypsum has a very stimulating effect on the bacteria in the soil. It is accepted by most agricultural authorities that plants take sulphur in the form of SO_3 or sulphur trioxide.

Let us then follow the following reactions and note that not only does gypsum preserve its own individuality but at some stage of its career assumes the form of each of the other calcium compounds.

Hydrated calcium sulphate (gypsum) minus sulphur trioxide equals calcium oxide (quicklime) plus water.

Calcium oxide (quicklime) plus water from the soil equals calcium hydroxide (slaked lime).

Calcium hydroxide (slaked lime) plus carbon dioxide from the air equals calcium carbonate (limestone) plus waterwater.

When the sulphur trioxide is taken by the plant from the gypsum, calcium oxide is left which goes through the changes above described until it finally becomes calcium carbonate.

Of the four, then, gypsum appears to have the biggest and most important variety of uses of any of the calcium compounds, in addition to having its own distinct chemical composition and effects. The other forms of lime cannot, however, change to gypsum in the soil.

Campers were responsible for the largest number of man caused fires in the forests of California during the summer months of 1920, according to tabulations compiled by the U. S. forest service and the California state board of forestry. Lightning was the only agency that was charged with being responsible for a large number. Lightning is held responsible for 653 fires during 1920; campers have 362 fires charged against them. There were 260 fires reported to have started from unknown causes and 198 from miscellaneous causes; brush burning was responsible for 124 fires getting beyond control; 117 fires started from railroads, 104 were of incendiary origin and 21 started from lumbering operations, making a total of 1,839 fires in California during the 1920 summer season.

The above fires burned over 415,275 acres of land and did damage estimated at $983,562.

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Questions and Answers

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Arsenate of Lead on Melons

I have put air slaked lime and arsenate of lead on my muskmelons. I did not measure the quantities but it drove away the little striped bugs. Does it matter if you use too much of one and not enough of the other?—Subscriber, Yolo County.

In this form we do not think there is any danger in making application of too great strength, in fact, in applying the dry arsenate it is often used without any lime or other substance to dilute it. This is especially true in the case of fighting the corn ear worm. It is placed in loose meshed muslin bags and given a light shake over the leaves or plants to be protected. However, one should use care in making this application so as not to waste. To overcome this some gardeners dilute the arsenate with the lime half and half, sometimes using even greater proportion of the lime.

Threshing Small Quantity of Seed

I sowed 100 pounds of Mariout barley for a trial and would like to use it for seed next year. Of course it won't pay to get a thresher for so little, so I was thinking of spreading the cut grain with a manure spreader, then rolling it with a subsurface packer and harrow. Would that be as good as a volunteer crop? Is there a better way?—Subscriber, Palmdale.

If this were thoroughly disked in it might prove fairly effective, but we believe it would be rather wasteful and proper distribution of seed would hardly be secured. If it is done, however, it should be near the end of a thoroughly drying day so as to secure shattering or threshing out of the seed. But why not borrow the method of our forefathers and separate this unthreshed grain on the floor of the barn, turn in the horses or the calves or a few head of sheep and drive them around and thoroughly tread out all the grain from the straw? Then a good windy afternoon may be selected when the straw can be forked off and the chaff and grain tossed into the air and winnowed. The grain may then be sown in the regular way and with more satisfactory return. If the quantity is very small, make a flail of a pitchfork handle or some long stout stick, say five feet long, to which is attached with rawhide thongs another stick about half the length. This is the old time flail. It is better, of course, in winnowing to use a fanning mill if one is available.

Squash Bug

I am sending you a specimen of some kind of bug I have found on my watermelon vines. What is it and how can I get rid of it? The vines will soon have ripe fruit but the runners keep dying off one at a time. The sap has oozed out of runners as if a pin had pricked them. I found a few of these bugs and blame it on them. I tried dusting vines with sulphur and arsenate of lead. I also sprayed with Black Leaf 40, but with no results.—Subscriber. Norwalk.

The bug accompanying this inquiry is a big, healthy specimen of the ordinary squash bug. In a garden, if one begins early enough in the infestation, hand picking and destruction of the pests will control fairly ecnomically. However, where eggs have been deposited and a full brood is on the way this is not very satisfactory. Spraying, likewise, is not practical. In hand picking place boards loosely over soil and the pest will hide and may be readily gathered in large numbers in early morning. Repellents such as gypsum saturated with kerosene or turpentine are sometimes satisfactory. Keeping down weeds and giving clean culture is also beneficial. It is more than probable that your vines may be affected with blight and this blight may be carried from vine to vine by the bugs. As a preventive not only reduce the bugs but the moment the vines show the wilting leaves cut and burn.

Gum Disease

Can you tell me what to do for gum disease on apricot trees? The trees are five years old and the trouble has just started.—Subscriber, Van Nuys.

Like all other trees the apricot is subject to many vicissitudes because of different conditions of irrigation and climate and attacks of insects, all combining to make a sick tree. In the citrus tree the sickness is manifested in chlorosis, yellow leaf or dieback or some other form of "disease"; in the peach tree it may become a case of sour sap, little leaf or "gum disease"; in an apricot tree it is fairly sure to manifest itself in exuding sap which evaporates and soon becomes a rounded mass of gum. The only thing to do is to study the particular tree or trees affected, determine the cause of the trouble and, if possible, remove it.

Canadian Thistle

I have an acre or two of Canadian thistle on my place and wish you could tell me how to get rid of it before it spreads any more.—Subscriber, Oregon.

We are very sorry we can not give encouragement as to an easy method of handling Canadian thistle. Like many of our pests about the only show for complete control is a sharp hoe or a sharp weed cutter, but the pest is so persistent that it is well to bring it absolutely under control while there are only a few acres of it for it will ultimately take the whole farm if not cared for. It is a perennial, but if cut regularly, never allowing the green to show above the surface or at least only for a short time, its vitality is soon exhausted and it ceases to be. There is no chemical control within reasonable cost. It is a very deep rooter and may not be controlled by cultivation or plowing excepting with great frequency. Bear in mind that you must be religiously regular and let the operation be frequent enough so that the plant never has breathing leaves.

Farm Wages

Would appreciate any information you can give me as to the general wage being paid a ranch hand where house is furnished. What is generally paid for packing apricots and peaches? We pack in lug boxes and have no idea

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what the rate per box or day is.—Subscriber, El Cajon.

The wage of permanent farm hand where home is provided varies so greatly that it is impossible to give help in answer to a question of this kind. One farmer will be able to get fairly competent help for, say, $75 or $80, while another finds it necessary to give at least $100 per month. The character of the home furnished has something to do in fixing the wage of such hands. Of course where the workingman is offered a fairly modern home with garden and sometimes lights and water included it is a valuable consideration and affects the quantity of cash. Common day labor in canneries and orchard is now commanding 35 to 40 cents per hour. The welfare commission has fixed women's wages in canneries and dry yards the same as last year, that is with a minimum of $15 per week.

Some Potato Marketing Problems

By H. H. Warner

WITH approximately half of the new potato crop in Southern California already shipped, growers are confronted with what appears to be a hopeless market situation. The season opened with farmers receiving around $1.00 per hundred, and instead of advancing the price has declined steadily to about 75 to 85 cents, with many cars rolling unsold and distributors reporting practically no demand. It now seems certain that some fields with a light yield will be plowed under as the price will not pay for the cost of harvesting.

A careful analysis of the situation develops a number of factors which contribute in a greater or less degree to the demoralized market. First of all is the large acreage planted to early potatoes in all parts of the country as a result of the high prices prevailing last year. Government statistics show that while the 1921 acreage of early potatoes is about 31,000 acres less than last season, it exceeds the 1919 area by about 25,000 acres, being estimated this year at over 137,000 acres.

Shipments of new potatoes prior to June 1 have been unusually heavy this year from Florida, Texas and the southeastern states. The U. S. bureau of markets figures show over 7,000 cars this season as compared with over 4,000 in 1920 and about 3,000 in 1919. These shipments found their way farther west than usual this year and many markets which California usually supplies exclusively had already received new stock when our cars began to arrive the latter part of June.

This fact emphasizes the freight rate situation which is certainly one of the big factors contributing to the present distress of the potato farmer. Aside from the heavy burden of an actual increase in freight and refrigeration charges which adds approximately 33 1/3 per cent to the cost of transportation last year, the unsound principle of applying a blanket increase to existing tariffs resulted in shifting the normal distribution of this crop from competing sections to the disadvantage of California producers. There is no doubt but that the farmer growing new potatoes in Southern California is suffering along with producers of other vegetable crops from the increased freight rates, for he and not the consumer pays this increase. It may be true, as the interstate commerce commission contends, that the consumer pays the increased freight on shoes, clothing and articles of that nature which are non-perishable, for the retailer adds this to his selling price and the purchaser eventually pays it. But this principle falls down in handling perishables which must be moved with dispatch to the consumer and on which the actual increase in cost per unit is so much greater because of its weight.

The general decreased purchasing power of the consuming public this year is apparent on all lines and the days of care free and extravagant buying are very definitely past in Eastern markets. Discriminating housewives will buy old potatoes if available at a low price instead of higher priced new potatoes where last year just the reverse was usually the case. This factor, like the increased freight rate, applies equally to other commodities but is a contributing factor to the present discouraging situation on potatoes.

It must be admitted too by any careful observer that the average quality of the new potatoes in Southern California is not equal to the standard of past seasons for the reason that the growing season has not been favorable in every respect. Late frosts resulted in very materially reducing the yield on the lower locations in the interior valleys, and some fields are actually turning out only 20 or 25 sacks to the acre. Late rains also had the effect of causing considerable second growth in some districts, making the potatoes knobby and ill shaped.

The chief cause of the ordinary quality this season, however, was in most instances delay in digging while hoping against hope for better prices. On heavier soils where the ridges cracked open tuber moth caused more or less damage, and on the lighter and sandy soils some patches are showing considerable heat necrosis, a condition which rapidly develops into black-heart if the potatoes are left in the ground too long.

Infestation of tuber moth can be controlled to some extent by ridging up higher to fill the open cracks in the soil, and in some cases a wide roller can be run over the field, breaking down the crust to fill these soil cracks, but of course at the same time breaking off the vines.

Owing to the strict enforcement of the Oregon and Washington quarantine against the entry of California potatoes showing infestation of tuber moth, these markets have received only a few cars this season. Authorities do not all agree that the tuber moth will become a serious pest in these states owing to the colder climate, but at any rate the attitude of the horticultural officials has prevented the shipment of many cars to those markets. This has limited still more the movement of our potatoes and has tended to increase eastbound shipment correspondingly.

The one bright spot in the season's potato deal is the attitude of a large part of the progressive growers on grading. Realizing that now if ever only the very best quality should be shipped, these growers are putting out only U. S. Grade No. 1 potatoes. Shippers who are building up a reputation for quality are encouraging the movement and as an additional precaution are requesting the state shipping point inspection service to certify that these cars do meet the grade requirement. They report that buyers are not only well pleased with the grade but are in most cases willing to pay a premium of from 15 to 25 cents per hundred. As the trade learns that they can buy this grade of potatoes in Southern California, they are insisting upon it and the present indications are that next season the grading will be more generally adopted.

F. o. b. sales are hard to make as the receivers are buying potatoes like other commodities from hand to mouth. They know there are many cars rolling and in the larger cities unsold cars are usually on track awaiting their own inspection and being offered freely. These cars which meet the U. S. Grade No. 1 are preferred in every case, while the ungraded stock goes begging.

There is every reason why the potato grower in Southern California should use United States grades just as the onion grower did this year in the Coachcella Valley, for in time he will materially better the reputation of his product in the receiving markets. It is true that on the basis of the present prices there are a few fields where the cost of sorting out defective stock would be prohibitive, but in the great majority of cases little if any sorting is required to make the grade.

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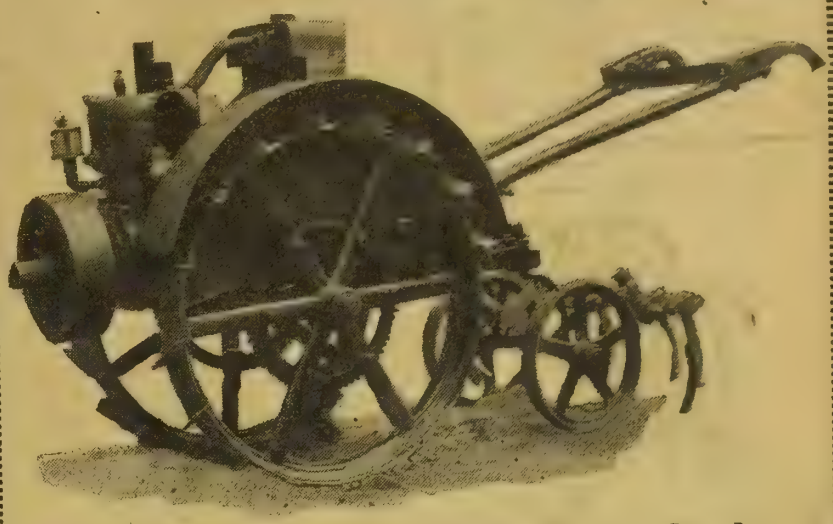

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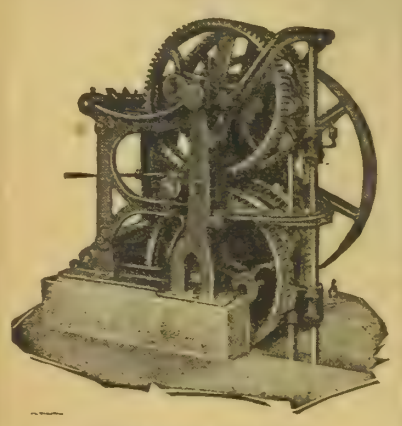

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Household Department

LONELINESS

I sit upon my lonely hill
  Above the little town
Just at the farther edge of day
  When one white star looks down.

The huddled houses murmur soft,
  The drifting shadows meet,
And little lights show red and warm
  A-down the drowsy street.

The slow stars gather while I watch;
  The houses, one by one,
Put out their lights and go to sleep—
  At last the day is done!

I sit, of all the town, awake—
  So quiet that it seems
The hill, the starry night, and I
  Are fragments of their dreams.

But oh, I am not quite content
  To watch here all alone—
To be of others' dreams a part
  And never have my own!
—Abigail Cresson, in New York Times.

THE BRIDE

Slip the dress over my head,
  Don't ruffle my hair!
And, mother dear, hurry!
  I could not bear
He should wait
  For me there,
Or should worry
  And think I'd be late.

How softly the lace falls—
  Such beautiful lace!
Can you see where to fasten the veil.
  Let it cover my face,
For my cheeks are so pale—
The long hours have been trying.
And where are my flowers
  And my gloves?
Do you know
  While you're tying
That bow, time is flying?
  Your hands tremble so!
Why, mother, you're crying!
  Why mother; . . . Oh, mother!

ELSIE

By Margaret Condon

(Concluded.)

"I think night and day are alike wonderful here in your foothills," Janet said softly. "I could love your California, Donald. Some day, perhaps, we shall come, my husband and I, to live here and be neighbors of yours. You enjoy ranching?"

"Enjoy it?" he echoed. "I'm a true son of the soil, Janet. My father destined me for a business career but it's the out-of-doors for me. You could not realize the pleasure I have taken in this ranch."

"I think you are right to follow your inclinations," Janet returned, "and I shall carry back to Elsie's friends wonderful stories of your life in California. I think, Elsie, your girl friends will envy you when I make my report, and they—what is that?" she asked quickly, as far above them on the dark mountainside a bright glow appeared.

"A forest fire!" Donald exclaimed, springing to his feet. "Jove, that's unfortunate. Vegetation on the slopes is so dry now that fire is serious."

"Is there danger, Donald, to our ranch?" Elsie asked anxiously.

"No, no, Elsie; don't be alarmed," Donald said reassuringly. We are in no danger unless a strong wind should come up, blowing from the mountains, and I don't look for that tonight. Even then several firebreaks intervene and we need not fear unless the fire gets entirely beyond control, but there is scarcely any wind tonight."

In fascinated silence for a few moments they watched. Brighter and brighter the red glow appeared. There crept along the dark mountainside a menacing line of fire. It stopped, seemed to waver, with occasional vivid flashes, then settled down into a steady glow.

Donald, who had been pacing the veranda restlessly, came and stood beside Elsie. Under cover of the darkness her hand stole into his, and he could feel that she was trembling

"They are fighting for us, Donald," she said in a low tense voice. "For us—up there in the smoke and heat. To protect our home. The thought frightens me."

"And I ought to be with them, Elsie," Donald returned earnestly. "Every available man is needed when a forest fire breaks out. Will you and Janet be afraid if I leave you alone? I shall take Pedro with me in the car."

Elsie's heart stood still and for a moment she could not speak. All her world seemed to have focused around Donald and their home. Nothing else mattered and he was going into danger.

Donald stood awaiting Elsie's reply. But it was Janet's clear voice that broke the silence.

"Calm yourselves, my children," she said cheerily. "Look, the glare is lessening. See, Donald, the fire is under control."

"Then you need not leave us, Donald," Elsie cried, clasping her hands about his arm. "Oh, how thankful I am that you don't have to go!"

It was true. As quickly as the flames appeared they were dying out. The red glow in the sky was fading. A fitful flare shot up here and there along the line of fire, but it was soon apparent that the fight was won.

The watchers sat tense and silent, but happy, as, gradually growing fainter and fainter, the brightness faded and again the mountainside was its dark, brooding, normal self.

Donald drew a deep breath of relief.

"That was good work," he said. "For a time it looked ominous but all danger is over now. They will watch carefully throught the night so cheer up, Elsie. You and Janet can sleep without fear."

The tension relieved, Janet laughed softly and said

"See how Elsie loves Oakglen, Donald, though she is quiet about it. I'll wager she was thinking of those wonderful live oaks and sycamores on the hillside. Well, I don't blame her. But now I shall have to say good night and go to that pretty room above the roses that Elsie told me was mine. My long journey begins tomorrow and I shall carry away with me pleasant memories of you two in your sunny foothill home."

Donald sat alone in the cosy room after Janet and Elsie had left him. He had tried to read but his mind refused to concentrate. Beating against his consciousness was the thought and hope, "If only—if only Janet's viewpoint would influence Elsie."

He heard a light footstep descending the stairs, and Elsie stood in the doorway, looking very childlike in her blue negligee and slippers, her long sunny hair falling in a heavy braid over her shoulders.

Donald noticed that her eyes were shining, her cheeks crimson, an adorable Elsie, who slipped over and nestled down beside him as he said:

"I thought you were in bed, Elsie."

She shook her head and said softly: "I've been thinking, Donald, and I came to tell you. I can see how selfish I've been, but that's all over and done with."

A happy light broke over Donald's face as he closed his arms about her.

"You mean, Elsie, that you've exercised a woman's privilege and changed your mind?" he asked.

"Don't you understand, Donald? Janet has opened my eyes. I see things clearly now—as they are. Isn't she wonderful, Donald? Clear in her judgment, true blue and sincere. If I were only like her."

"I like you very well as you are, Elsie," Donald returned, his eyes shining with happiness. "But blessed be Janet. Then we may keep the ranch? Oh, glory be! Elsie, you can't realize what this means to me."

"I think I can, Donald," the girl said very gently, between laughter and tears. "I understand now, and my homesickness has gone forever; it burned to ashes with that fire on the mountain tonight. How glad I am that I awakened before it was too late. I have not forgiven myself yet, but kiss me, Donald, and say you forgive me. I'm very happy, and I'm going to love our wonderful California."

WINGED AEROPLANES

The speed at which a duck can fly is much greater than the average person would suppose. For instance, it has been estimated by a competent authority that the speed of the canvasback duck is 98 miles per hour; that of the blue winged teal duck, 89 miles; and that of the Canada goose, 76 miles. These speeds are probably in excess of their average flights, however.—Our Dumb Animals.

The Cultivator Patterns

3655. Ladies' Dress—Cut in six sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. A 38 inch size will require 5⅛ yards of 40 inch material. The width of the skirt at the foot is about 2¾ yards. Price 10 cents.

3675. Child's Play Suit—Cut in four sizes: 2, 3, 4 and 5 years. A 4 year size will require 1⅞ yard for the bloomers, and 1¼ yard for the waist, of 27 inch material. Price 10 cents.

3277. A Popular House Dress. Cut in seven sizes: 36, 38, 40, 42, 44, 46 and 48 inches bust measure. A 38 inch size requires 6¼ yards of 36 inch material. Price 10 cents.

3681. Girl's Under Garment—Cut in six sizes 4, 6, 8, 10, 12 and 14 years. A 10 year size will require 2⅛ yards of 36 inch material. Price 10 cents.

3657. Misses' Dress—Cut in three sizes: 16, 18 and 20 years. An 18 year size will require 4⅝ yards of 38 inch material. The width of the skirt at the foot is 2 yards. Price 10 cents.

3653. Child's Dress—Cut in four sizes 2, 4, 6 and 8 years. A 4 year size requires 2¾ yards of 27 inch material. Price 10 cents.

3658. A Practical Seamless Apron—Cut in four sizes: Small, 34-36; medium, 38-40; large, 42-44; extra large, 46-48 inches bust measure. A medium size will require 2¾ yards of 36 inch material. Price 10 cents.

3661. Girl's Dress—Cut in four sizes: 6, 8, 10 and 12 years. A 10 year size requires 2¾ yards of 36 inch material. Price 10 cents.

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Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cents) stamps for each number. In order to furnish our readers with the very best NEW YORK styles, all patterns ordered are filled in NEW YORK. Therefore, we promise to deliver all patterns ordered within TWO WEEKS; we guarantee safe delivery of all patterns.

CATALOGUE NOTICE

Send 15c in silver or stamps for our Up To Date Spring and Summer 1921 Catalogue, containing over 500 designs of Ladies', Misses and Children's Patterns, a concise and comprehensive article on dressmaking, also some points for the needle (illustrating 30 of the various, simple stitches) all valuable to the home dressmaker.

PATTERN DEPARTMENT
California Cultivator
Los Angeles

HINTS FROM HOUSEKEEPERS

Uses for Sour Cream

A friend who visited me recently was very much shocked to see me add a half cup of sour cream to a kettle of boiled new potatoes which had just been drained and dried over a slow fire. She tasted very gingerly, then with enthusiasm passed her plate for more and wanted to know just how to do it. I was as much surprised to find that she and others thought the only possible use of small left overs of sour cream was in soda breads, and thought I would send this suggestion to the Cultivator. If the cream is not very sour I merely add salt, a little black pepper, perhaps a scrap of butter to any vegetable, cabbage, cauliflower, turnips, carrots, potatoes, and set on stove to cook up thoroughly. If it tastes sour after cooking I add a tiny pinch of soda. The sour cream gives a delicious flavor, suggestive of cheese. Indeed, I often add a bit of grated cheese to any creamed vegetable or fish.

An aunt I used to visit made the most wonderful sour cream sauce to serve over apple dumplings. I think she just stirred it with spoon, adding sugar and spices. Can anyone tell me about such a dressing? I have experimented but don't get it just right.—Subscriber, Carpinteria.

Pumpernickel

When we make white bread we take one-half of dough and knead equal amounts of rye meal and corn meal into it. Form into loaves, let rise and bake. This bread is healthy and easily made.—Mrs. Henry Pfeffer, Los Gatos.

Rolled Oat Honey Cookies

2 cups rolled oats, 2 cups sifted white flour, 1 cup honey, 1 cup chopped raisins, ½ cup chopped walnuts, ½ cup Mazola, 3 well beaten eggs, 1 level teaspoon soda (scant), 1 level teaspoon salt, 1 level teaspoon cinnamon. Mix well and drop from teaspoon on buttered pans and bake in a moderate oven.

Custard pie, pumpkin pie and sweet potato pie are fine sweetened with honey, one-half cup to each pie.—Mrs. Henry Pfeffer, Los Gatos.

Three Helpful Hints

As every housewife knows, brown sugar has a habit of becoming exceedingly hard and lumpy. Lumps so hard sometimes can hardly be rolled or smashed up. When such occurs just put it in a pan and set it for a short time in a warm oven. Just as soon as it gets a little warm it will be in a condition to crumble up perfectly, just as easy as can be.

Another help I came across is this: It is quite difficult to measure a half cup of solid butter, as it has to be pressed down even into a cup. But try this way: Fill the cup exactly half full of water, then put butter in until cup becomes full of the water. Keep butter under the water and when water rises to top of cup pour it off and you have your half cup of butter.

Another little convenience is this: I have practiced it for years and find it handy in many ways. I keep a small meal sack, one long enough to be tied in a knot, instead of using separate string, and I put soap, any size, in it, and when I want soapy water for any reason, to boil clothes, for instance, I put the sack of soap in the water. No soap sticks to clothes; none is wasted; what is left in the sack is there for next time and small pieces can be used. When taking the sack from the water I put it in an old pan and it is ready to add more to at any time. —Mrs. M. H. Brown, Sherman.

FRESH MEAT EXCHANGE

Eldorado County's fresh meat exchange is decidedly popular. The Farmers Exchange Abattoir and Packing Plant at Diamond Springs has begun deliveries on a new route, making tri-weekly deliveries of fresh and cured meats on the Placerville-Phillips Station route on the Lake Tahoe highway. A retail meat department has also been opened at Placerville. Carl H. Schroeder is manager of the plant.

OUR READER CONTRIBUTORS

My Salary

Suggested by "My Rosary," published on this page last week, a member of the Cultivator staff contributes to this department a treasured parody which will make universal appeal.

My Salary!

The hours you spend with me, dear "Men,"
Are very few, it seems to me;
I count you, every dime apart,
My Salary! My Salary! !

Ten cents a dime, ten dimes a "plunk,"
To earn them is an awful grind;
I count each dime unto the end, and there—
A "dun" I find.

Oh, toil, that is so poorly paid!
Oh, salary, spent before we greet!
I kiss each dime, and try to find a way
To make ends meet—
Ye Gods! ! To make ends meet!
—Anne Alfreda Mellish.

The Text of the Flowers

The verses following were composed by a 16 year old high school girl:

The Text of the Flowers

Jack-in-the-pulpit stood alone
Erect in his velvety-cushioned throne.
He spoke to the flowers far and near
And this is what I happened to hear:
Brethren, sisters I want to say
"Help one another" is my text today.

We've just been charmed by sounds of the dell
And the beautiful tunes from the Heather Bell:
The Trumpet Vine echoed a series of notes
And the birds of the forest have quite split their throats,
And now I hope you'll listen, too,
To the little sermon I've prepared for you.

Way down in the city, I heard today,
Children are living without music or play.
Our lives are brief in this world of care;
Why can't we go and bring happiness there?
And we'll each earn a star high up in our crown
'Gainst that fateful day we're all cut down.

The hearts of the flowers were sorrowfully stirred
By this message of cheer they'd recently heard,
And they prayed that they might be borne away
To the home of the little ones who never play.
The prayer was heard. The message was caught,
Borne on by the wings of a wonderful thought.

The flowers were plucked and sent away
To scores of children who cannot play;
By each little cot with its lonely child
Lay a beautiful bunch of blossoms wild.
The glimmering dew on each little flower
Twinkled in smiles from its leafy bower.

And the little lame girl, now rid of her frown,
Cried: "God's put a star in each little crown."
—Elaine Barkway, Merced, age 16 years.

California Cultivator

The verses below give my feeling for the California Cultivator.—Fred Barnes, Escalon.

California Cultivator

C is contentment you will show with a smile,
A is after you read this paper awhile.
L is legal questions, answered always true,
I is interesting from cover to cover thro.
F is friends who read it day and night,
O is others it will find, if it keeps on going right.
R is reading easy on the eyes,
N is the news we get from over the state.
I is industries; therein advertised,
A is anxious we get if we have to wait.

C is the conscience the editors s e e m to have,
U is usefulness we find on every page.
L is lively and a paper wide awake,
T is happy times, after the p o s t m a n leaves it at the gate.
I is investment, a dollar very well spent,
V is vim it gives a person, who is tired and weary
A is advertisements about w h i c h you need not be leary.
T is that to the world, we'd like to say,
O nly that the California Cultivator is the best
R anch and rural paper out today.

COMMUNITY COLD STORAGE ROOMS

The Butte County farm bureau passed a resolution favoring the building of cold storage rooms with individual rent boxes for community use in various parts of the county, believing such cold storage facilities to be especially valuable for the use of farmers when they wish to kill a beef or porker and put the meat in a cold storage compartment for use as they need it. Plans for such a plant are well under way.

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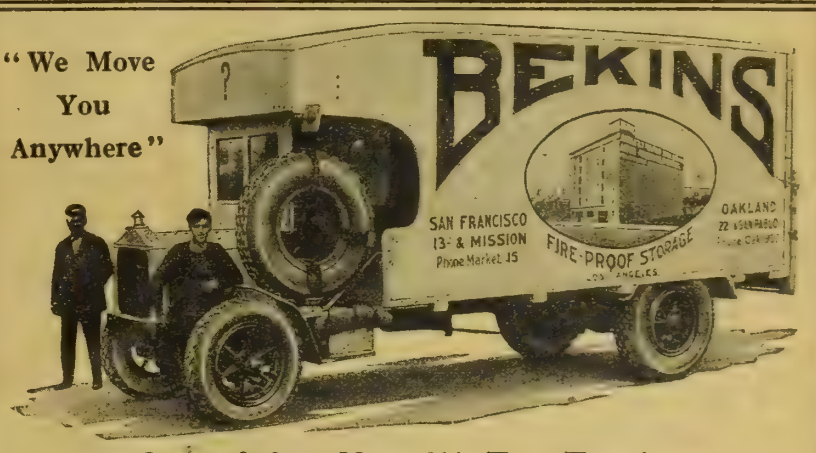

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Sycamore Acres

By Jack Klein

WHEN Robert N. Clapp, a young business man of Chicago, heard the call of the open and felt the magnetic pull of the Golden State, he burned his bridges behind him and came West with an ambition to found a herd of Holsteins that would be a credit to the state and of which he might be justly proud.

Although a city man, his love of livestock had brought him the friendship of many of the big Holstein breeders of the Middle West, and around the rings of the National Dairy Shows in company with these men he had learned much about his favorite breed, so that when he bought the E. R. Stalder ranch at Nuevo in Riverside County 18 months ago and started out to find his herd he had a good idea of what he wanted.

Two of his early purchases were Stanislaus Piebe Laura Pontiac, who made 32.82 pounds of butter from 512.7 pounds of milk in seven days for him, and Moneta Segis Pontiac, a three year old who made 29.91 pounds of butter in seven days.

At the Stalder sale last October Mr. Clapp was the heaviest buyer. His most notable purchase was the great cow, Gerben Abbekerk Maid, who has three times made over 34 pounds of butter in seven days and in ten years has dropped 11 sound calves which have been sold for $11,500. She is being run on strictly official test for the year and promises to make a great record, having recently given 116 pounds of milk in a day, 60 days after freshening.

At the same time he bought Rosamaines Pontiac Goldrop, who has freshened as a senior two year old and made 24.31 pounds of butter from 591.3 pounds of milk in seven days and 96.38 pounds of butter from 2,386.6 pounds of milk in 30 days. In the recently published list of awards for the year covering the entire country she stood twentieth for seven days butter fat, tenth for 30 days butter fat, third in seven days milk and second in 30 days milk, winning a total of $56 in prizes for her owner.

Another good one from the Stalder sale is Rosamaines Korndyke Beauty, who freshened as a senior yearling and made 22.24 pounds of butter from 574.6 pounds of milk in seven days and 88 pounds of butter from 2,311.3 pounds of milk in 30 days. These records make her both state and national champion for her age.

Since the first of the year Mr. Clapp has imported two carloads of Holsteins from the Middle West. These animals were all chosen with the greatest attention to type and individuality and are excellent producers, although but few of them have official records. Remembering the lessons of

Sycamore Acres Holsteins

Upper left: Evelina Calamo Korndyke, 26 pounds in 7 days at 3½ years. Upper right: King Segis Pontiac. Lower left: King Segis Pontiac Aero, herd sire Sycamore Acres herd.

the ringside he has chosen largely of the blood of King Segis Pontiac, who has sired many show winners and big producers, including K. S. P. Lily McKinley, the world's champion three year old with 37.62 pounds of butter in seven days, who also is now in California in the herd of D. G. Mawell at Hollywood. King Segis Pontiac is a great sire and the sales of his sons aggregate over $250,000. His most famous sons are K. S. P. Alcartra, known to Californians as the sire of King Segis Alcartra Prilly, the grand champion bull of the Bridgford Co.; K. S. P. Chicago, K. S. P. Konigen, K. S. P. Count and K. S. P. Jannek, who was recently sold by J. J. Jefferies to the Santa Monica Dairy Co. for $4,200.

At the head of the herd at Sycamore Acres, the name given by Mr. Clapp to his farm, is the two year old King Segis Pontiac Aero, who is a perfect picture of his sire and who is out of Evelina Calamo Korndyke, a well known daughter of Paul Calamo Korndyke, the greatest show bull of the breed, whose picture appears in the heading on the first page of the Holstein Friesian World. This cow has a record of 26 pounds of butter in seven days as a three year old and 28.2 pounds of butter in seven days and 113 pounds in 30 days as an aged cow. In looking at this young bull there is no question that type breeds on and that he shows the finest qualities of both sire and dam.

In the herd are 22 daughters of King Segis Pontiac and a number of daughters of his 37 pound son, Pearl King Segis Pontiac, and of K. S. P. Chicago.

Among the outstanding cows is Segis Walker Gelsche, a daughter of the King of the Black and Whites and a double granddaughter of King Colanthe Clothilde, son of Colanthe Johanna Lad. She is known the country over as "the white show cow" for she has never failed to stand second to Minerva Beets, who was five times grand champion at the National Dairy Show.

Another good one is K. S. P. Lucy Wayne, who is out of Lucy De Kol Wayne, the only cow who ever defeated Minerva Beets and who turned the trick at the Iowa Dairy Congress in 1914.

Perhaps the most widely known cow of the herd is Nancy Calamo Korndyke who is out of the great show cow, Nancy Spofford, the dam of the 40 pound Nancy Lucy Hengerveld, recently brought to this state in the Maxwell herd. Nancy Calamo Korndyke has a long record as a successful show animal, having stood first in her class four years at the National and the big Eastern shows.

Never shown and entirely unknown there is in the herd a cow, Evergreen Beauty 2nd, who, if she shapes up right, will be a strong contender in the shows this fall. In a herd of fine individuals she is outstanding.

There are at Sycamore Acres about 50 cows in milk and the youngsters who make up the balance of the herd of 125 head are mostly out of these cows, as Mr. Clapp has combined two eastern herds with his California purchases.

Livestock News Notes

After dropping twin calves during the recent hot spell in June, Canary Segis Prilly, the oldest daughter of King Segis Alcartra Prilly, the famous three times grand champion bull owned by Bridgford Holstein Co., Patterson, made an official record of 26.57 pounds butter from 637.6 pounds milk in seven days at the age of three years seven months. Her best day's milk was 105.4 pounds, and her record indicates that in older form the daughters of her sire are going to keep up the tremendous milk production shown in their two year old records.

Two excellent long time records have recently been completed in the small herd of outstanding registered Holsteins owned by Dean Beeman, Woodland. Johanna Hengerveld Capunna, freshening at four years 11 months, made 783.36 pounds butter from 18,676 pounds milk in 305 days on three times milking and running with the herd. She is the dam of Pearl Na Dean De Kol, the great heifer that Mr. Beeman sold in the Guaranty Sale last March for $1,125 to The Sunshine Company, San Fernando, and regarded as one of the great bargains of the sale. Jean Na Dean De Kol, freshening at two years three months, has completed a 365 day record of 852.48 pounds butter from 21,578.2 pounds milk, record made on three milkings per day, and never fed over ten pounds of grain per day. She is by the same sire and out of a 33 pound full sister to the $1,125 heifer mentioned above. This great heifer made over 50 pounds of butterfat in the fourteenth month of her first lactation period, milking around 45 pounds per day.

Norena of Ashwood, a Jersey cow owned by McArthur and Stauff of Oregon, has recently produced 113.36 pounds of butter fat in 30 days, which is said to be a new record for that breed.

E. F. Peterson, general manager of the Diablo Stock Farm, Danville, has secured from prominent Eastern herds a carload of yearling and two year old Polled Hereford bulls and two carloads of heifers. It is understood that one carload of two year old heifers will be delivered to the Hammond Lumber Company of Humboldt County.

Representatives of Wm. R. Hearst continue making selections of Herefords for the herd that Mr. Hearst is

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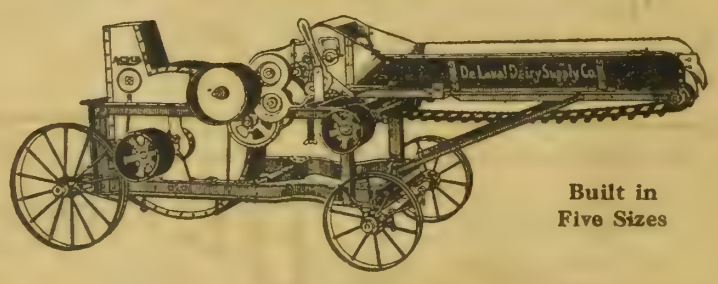

Built in Five Sizes

Mr. P. N. Ebsen of Astoria, Oregon, bought an Acme Cutter in June, 1917. It has filled 16 silos. Mr. Ebsen writes that he is not in the market for a cutter now, as his old Acme is still good as new. Isn't that the kind of a feed cutter you want?

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establishing in this state. Five young cows, four of which are by Disturbers King, were recently purchased in Indiana.

One thousand head of choice cattle have been purchased in Arizona by Frank O'Connell of the firm of O'Connell Brothers and will be placed on their 21,000 acre ranch, situated east of Coyote and extending south to Pine Ridge in Santa Clara County.

H. C. Muddux and son Forrest of Sacramento, prominent Shorthorn and Berkshire breeders, have returned from a three months' trip to England, Scotland and the continent.

King Pontiac Netherland Segis 3d, the splendid son of Gerben Abbekerk Maid, now has a 30 pound daughter, Dorothy Pontiac, who recently made her record of 30.04 pounds butter from 527 pounds milk in seven days at four years two months. This heifer has shown consistent increase in her records at each freshening, having made 18.25 pounds butter from 365.1 pounds milk as a junior two year old, 22.84 pounds butter from 472.6 pounds milk as a junior three year old, and now with the 30 pound record noted above as a junior four year old. Rosamaines Novena Netherland, a junior two year old daughter of Rosamaines Pontiac Netherland, the bull now owned by Pottenger Sanatorium Co., Monrovia, made 22.51 pounds butter and 481 pounds milk in seven days. Juliana Canary Mercedes, at three years one month, made 27.59 pounds butter from 640 pounds milk in seven days. She is sired by Prince Juliana Walker, who is over 90 per cent the same blood as the great heifer Miss Valley Mead De Kol Walker, whose sons have commanded record prices in California. All three of the heifers noted above are owned by Peter B. Kyne and O. H. Cash, at their Sierra Vista Stock Ranch, Perris.

F. F. Peabody, owner of the Eaglê Ranch in Santa Barbara County, has purchased from Dr. J. L. Higgins of Tennessee two Aberdeen-Angus heifers that are daughters of the celebrated 1919 chamion, Idolmere, and bred to Perinthian, the 1920 champion. The Peabody herd is coming to be one of the leading collections of the Angus breed owned in the West and doubtless will be seen at some of the forthcoming shows.

C. C. Slater, Martinez, has at the head of his herd of registered Holsteins a bull of higher record backing than is usually found in the average herd. This bull, Model Francis Glista, is sired by Model King Segis Koningen, a 31 pound proven grandson of King Segis, and is out of Glista Finella, a 32.37 pounds daughter of the famous three times 34 pound cow and seven times 30 pound cow, Glista Ernestine, whose best record is above 35 pounds and she has twice milked over 800 pounds in seven days in the Cornell University herd. The seven nearest dams of Mr. Slater's bull average 30.22 pounds butter in seven days.

Up at Willits in Mendocino County is a herd of registered Holsteins that is the extreme western outpost of the breed in America, and it is composed of animals whose quality well represents the breed in pioneer territory. This herd is owned by H. H. Sisson, Sunnybrook Ranch, who has figured as a buyer in some of the best California sales. One of the choice young matrons of the herd is Princess Boweda Alcartra, that made 21.02 pounds butter from 538.5 pounds milk in seven days, freshening at two years four months. She is out of a daughter of the famous 37 pound cow Boweda. Another of the good ones is Piebe Colantha Estata Pride, that made 18.39 pounds butter from 468.6 pounds milk in seven days at two years three months. She is out of a granddaughter of Colantha Johanna Lad. An outstanding cow in the herd is Cantate Domino Sir Skylark 3d, a 27.30 pound daughter of Dutchland Governor Sir Colantha that milked 606.1 pounds in seven days. She is half sister to the bull that sold in the Brentwood National Sale for $27,500 this spring. Heading the herd at Sunnybrook is the splendidly bred bull Ensign Korndyke Model Pontiac that topped the bulls in the 1920 Guaranty Sale at Sacramento. He is sired by Chimacum Spring Farm King Pontiac, whose daughters are making sensational yearly records as heifers, and is out of a daughter of Paul Aaggie Oakhurst, whose daughters also are making wonderful records, among them the world's record senior three year old for both milk and butter, Lady Aaggie Echo Hengerveld.

When 100 descendants of the great cow Gerben Abbekerk Maid sold at public auction for over $50,000 in the Rosamaines Rancho dispersal at Riverside last October the event furnished one of the most spectacular demonstrations in Holstein history of the dollars and cents value of one outstanding cow. Among the hundreds who witnessed the sale there were perhaps only a few who knew the herd well enough to appreciate that the prices so widely considered spectacular were actually very modest when measured with the real worth of the cattle, and as the descendants of this great cow became scattered through many herds as a result of the sale we are now just beginning to see what they are capable of doing in other herds. Some of the latest substantial production records made by descendants of Gerben Abbekerk Maid have been made in the choice herd owned by E. R. Stalder, Wineville. Eva Pontiac Netherland, a senior three year old daughter of King Pontiac Netherland Segis 3d, son of Gerben Abbekerk Maid, recently completed official records of 29.83 pounds butter from 613.1 pounds milk in seven days, and 123.96 pounds butter from 2,556.8 pounds milk in 30 days. Parthenia Netherland Pontiac, another daughter of the same bull, made 27.64 pounds butter from 530.5 pounds milk in seven days as a junior four year old. Rosamaines Ormsby Abbekerk, a daughter of the grand cow Gerben Abbekerk Maid, and sired by Rosamaines Pontiac Netherland, a son of King Pontiac Netherland Segis 3d, made one of the most remarkable records to date. Freshening at the age of one year and ten months she made 20.63 pounds butter from 505.1 pounds milk in seven days, and 84 pounds butter from 2,036.1 pounds milk in 30 days. The first five daughters of her sire to freshen at an average age of 24 months have averaged slightly over 20 pounds butter in seven days.

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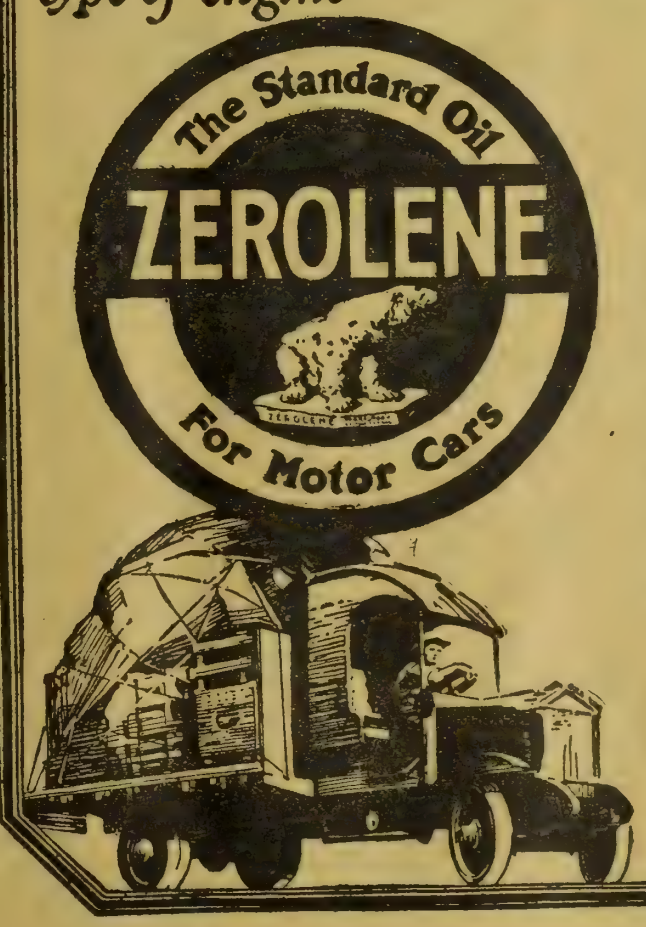

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A farm home department has been organized at Bowman, Placer County.

Give a Thought to Livestock

By R. P. Royce

CAREFUL observers are rather unanimous in their opinions that one of the weakest points in California farming operations centers around the small part livestock occupies on the average ranch, and the idea is generally and frankly expressed that until our ranchers come to a more active appreciation of the importance of some sort of livestock, they will continue to fail in getting the most from their investments.

Despite the fact that this state enjoys unusual blessings of soil and climate, there is no sound reason for assuming that our agriculture can be built on anything approaching a permanent basis by ignoring the fundamental fact that the fertility of the soil can only be maintained by making proper return to the soil of the necessary plant food.

There is little question but that lack of livestock noted on the small ranches of this state can be largely attributed to the marked tendency for our agricultural practices to develop along specialized lines. Specialization in field and orchard practice is a factor of profound importance in California. It at once appears to be the hope and stumbling block of our development. By the very nature of our soil and climate, certain sections appear to be adapted to certain fruits or crops, and it would be unwise to argue otherwise. Because of the special adaptation, it has followed that our marketing machinery has been constructed to take care of the situation, and this in turn has encouraged and stimulated further specialization of agricultural practice.

Our small ranchers are concentrating their investments in oranges, lemons, prunes, grapes, pears, apricots, peaches or some other product of tree or vine, or they may be alfalfa, bean, wheat or barley growers. And, generally, it can be said that a very, very small percentage of groves, orchards or vineyards maintain any livestock.

Now it is not the intention of the writer to advocate any revolutionary reorganization of our agricultural industry, but I do want to suggest a few thoughts that can be taken for what they are worth.

The old admonition as to the unwise practice of putting all of one's eggs into a single basket has been proved mighty sound. With due appreciation of the tremendous importance and volume of the fruit industry of California, it would seem a mistake for our growers to forget that fruit is raised in other states. If exploitation of that industry is carried on more rapidly than the demand develops, one or two situations, or both, might develop. Our growers might come to a sudden realization that Florida produces oranges, Georgia and Texas, peaches, the Northwest and the Mountain states produce a fine quality of apples, and local orchards in the Mississippi Valley and the Eastern states continue yielding a pretty fair quality of fruit. Again, the hazard of depending entirely on one or two specialized crops increases with the degree of specialization. And, finally, the matter of soil fertility will become of pressing importance.

The writer quite well appreciates the fact that there are many small fruit places where livestock would not fit in to advantage, but he is positive that there are thousands of small places where a few cows, a brood sow or two, along with chickens, would prove profitable adjuncts and I am convinced that if the owners of such places would consider their future welfare rather than, perhaps, their present convenience, their books at the end of the year would show a healthy increase.

Why do not more of our small ranchers raise livestock? The most common reply to that question is that the owners do not care to be "bothered." Now, of course, if one happens to be so situated that he can regard his ranch operations incident to a pleasant time, why that is one thing, but if he is using and expects to use his ranch to make for himself a comfortable living, it would seem that a cow or two to furnish milk and butter and a few hogs to furnish fresh and cured meat, along with a poultry flock, would be good business, especially where there is more or less feed produced that goes to waste.

The first week in July a severe wind visited the Sacramento Valley and in its wake the ground was covered with fruit, mostly pears. It was stated that the loss in that district would amount to 200,000 or 300,000 boxes of pears and plums—and presumably not 20 per cent of the fallen fruit will be utilized by hogs. The incident referred to is a small item, but the point is that these ranchers should have had hogs to turn in their orchards.

During the past two weeks thousands of acres of standing and harvested grain have gone up in smoke. Nothing new, of course; we have become used to seasonal fires and rather expect them. A few insure, but the form of insurance is not the kind that California needs. California ranchers need the insurance furnished by livestock.

If more of our grain farmers maintained a small herd of cattle, either beef cattle or dairy cattle, and a few hogs, less of their land would be in grain and more in green pasture (if they adopted a sound plan).

Under such a system properly handled the benefits would be many.

Less grain would be available to speculators in hammering the price on the total crop, and prices would tend toward greater stabilization. Vast quantities of splendid feed in the form of stubble or grass could be made into beef and milk. In the event of a crop loss or failure the rancher's income would not be totally wiped out, and he could fall back to a degree upon his livestock to help pay his current expenses.

CORRECT GRADING OF WOOLEN GOODS

The purpose of the French-Capper bill is to force correct branding of woolen goods. At the present time no distinction is made between goods made from new wool and those made with a greater or less amount of reworked material known as "shoddy." When you go to a clothing store the salesman offers you a suit which he guarantees as "all wool." It may be all wool, but the purchaser does not know how often some of the wool has been re-worked. Manufacturers admit that cloth containing shoddy will not wear or keep its shape like cloth from virgin wool. If manufacturers were compelled to brand each piece of goods so as to show the percentage of reworked wool, the customer would soon put a premium on new wool goods.

The opponents of the bill make these claims. First, that correct branding is impossible to enforce, because there is no way of determining by chemical examination whether goods contain shoddy or not; that if there were no shoddy used there would not be enough woolen clothing for everyone, as the world only produces about 14 ounces of woolen cloth per year for each man, woman and child in the temperate zone; third, that shoddy does not interfere with the sheep man's profit because wool sells for more than shoddy; that if enough wool was produced shoddy would be driven from the market and that consequently the sheep business is not affected by shoddy.

"This line of reasoning is not satisfactory," says C. I. Bray of the Colorado agricultural college. "It would be just as easy to station U. S. inspectors in wool mills to put their stamp on goods as it is to maintain the present meat inspection service in packing plants, but such close inspection might not be needed."

The shoddy industry is a legitimate one. People may have clothes made from that material if they so desire and cannot afford real wool. If goods were branded with the proportion of

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re-worked wool contained, the wool producer would not be wronged. But where a cheap and inferior substitute sells along with higher priced and purer material, with no distinction made between the two, there is only one result possible—the cheap material sells for more than it should and the good material for less. This has been proven in the case of eggs. Where eggs are sold "case count" with good eggs, rotten eggs and partly hatched eggs all on the same basis, the price paid for the good eggs is always lowered. When bought on a "candled" basis, the good eggs bring their full value and the bad ones are thrown out. Increased wool production can only lower the price of both wool and shoddy under present conditions. If shoddy is forced to sell as such the public will then pay a sufficient premium on genuine woolen goods to give the wool grower a profit. The labor cost of making a suit is no greater with good material than with shoddy material.

CHANGES AND LOSSES OF ENSILED CORN

Every farmer who has a silo knows that some change takes place in the substance of the corn or other crop conserved by this means, and it is generally assumed that some loss in substance of both moist and dry matter takes place as a result of fermentation and leeching. To ascertain as definitely as possible the amount of this loss, its causes, and means for wholly or partially preventing it, the dairy division of the United States department of agriculture has been conducting a series of experiments. The results of two years tests are covered in a professional paper, Department Bulletin 953, "Nitrogen and Other Losses During the Ensiling of Corn."

Samples of silage in cheesecloth sacks were buried at various depths and positions in a silo 42 feet high by 14 feet in diameter, holding approximately 150 tons. The bags were weighed when put in, and samples of the silage analyzed. When the bags were reached in feeding out the silo the contents were again weighed and analyzed.

The two years work furnishes evidence of a downwash of the juice in the silo, carrying with it soluble food materials, so that the silage in the lower part of the silo may gain in food material at the expense of the upper part. There was an average loss for all the bags of nearly ten per cent of the dry matter, which apparently is due largely to the fermentation of the carbohydrates and to the carrying away of soluble material by the juice. The sugars almost entirely disappeared. There was a considerable loss of crude fiber and of the furfurol yielding bodies. There was a loss in total nitrogen, which was larger when the corn put into the silo was immature than when mature corn was used. It is probable that this loss is due largely, if not entirely, to the nitrogenous compounds in the juice. The albuminoid nitrogen suffered a loss of over 50 per cent, while the non-albuminoid forms increased several times their original weight.

There was a gain in ether extract, probably due to the formation of new ether soluble bodies. The second season nearly 10,000 pounds of juice escaped from the silo. This juice carried a considerable percentage of nitrogen of various forms which in ordinary practice would remain in the silo.

The results are as yet incomplete and the tests are being continued.

BE GENTLE TO LIVESTOCK

"A merciful man is merciful to his beast." Aside from sentimental considerations it pays to be gentle with livestock.

The old time range practice was to "treat 'em rough." A calf was roped on the run, thrown end over end, and dragged to the branding place. Vaccination, castration and dehorning were all done at one job, and usually in a crude, unsanitary and cruel way.

The practical value of treating livestock with consideration for their comfort is now appreciated by the best breeders and ranchmen, according to Geo. H. Glover of the Colorado agricultural college. One livestock owner makes this statement: "Keep all livestock as quiet and make them as gentle as possible and your feeding costs will be noticeably reduced." If animals are to fatten and make the best growth they must be contented.

When animals are sheltered from annoying or exciting occurrences they eat more, digest their food better and it actually takes less food to keep up natural growth and fat production.

THE BREEDER-EXHIBITOR

By Frank D. Tomson

There has come a useful change in recent years in the practices of exhibitors of pure bred livestock and the attitude of the public interested in this branch of livestock husbandry.

In earlier days it mattered little whether the exhibitor bred the animals which he had on exhibition or not. The fact that he possessed them was regarded as sufficient to attach importance to his operations, that is, if his entries were of the winning sorts. Naturally this resulted in a great advantage to the man who had money and could acquire animals of merit from various sources. It was not even essential that he should own any other livestock. The fact that he appeared on the show circuit with a group of show animals was accepted as sufficient evidence of his desire to be identified with the business. He might compete and win over an experienced breeder who relied on his own productions to make up his show display and little thought was given apparently to the more deserving producer.

But this has all changed. The record associations are placing a premium upon the entries exhibited by the breeder and have arranged the classifications so that in some of the contests none may compete but the breeders of the entries. This is along the line of progress. It is a constructive attitude due in part to the foresight of those who direct the affairs and make the appropriations of the records associations, in part to the claim for recognition by the breeders, and in part to the desire of the interested onlookers who study the problem of livestock improvement.

So it has come about that in the leading fairs and shows the breeder has been given a place of preference in the classifications, a preference that is substantial because of the extent of the cash appropriations.

As an example a list of the leading fairs and shows offers prizes in the Shorthorn classes to the amount of $168,000. Ten thousand dollars of this amount goes to Shorthorn steers and $25,000 to the Milking Shorthorn classes. This list does not include a very large number of local, county and district fairs at which liberal Shorthorn prizes are offered. In all of these the breeders' interests are given preference and the breeders' efforts encouraged. The period of his identity with Shorthorn breeding has no relation to his prospects as an exhibitor. These are based entirely upon the character of his entries. The beginner who shows his first animal may carry off the coveted championship if the animal is good enough.

This constructive conception of the situation is encouraging beginners to start with a better class of individuals as a foundation. Another inducement exists. It is the attitude of the buyers in public sales and in private transactions showing preference for animals bred by the seller, provided, of course, they represent the standard sought for.

This is the day of the breeder in the pure bred stock industry and the business is on the most favorable basis as a result.

DEEP BUT SALTY

Oswald—My love for you is like the deep blue see—

Clarissa (for such was her name)—And I take it with the corresponding amount of salt.—From London Opinion.

Life is so full of a number of things that men should be glad for the neck and the wings.—Houston Chronicle.

SIR AAGGIE DE KOL MEAD

His Sire: SIR AAGGIE DE KOL ACME, son of the world's official yearly butter record holder, Aaggie Acme of Riverside 2nd, 1,331.66 lbs. butter in one year, and she the dam of Miss Aaggie Acme Burke, 1,034.66 lbs. butter from 24,338.9 lbs. milk in one year as a junior 2 year old, world's milk record in class in 1920. He has over 100 living daughters, the first sire in California to have that distinction.

His Dam: MISS VALLEY MEAD DE KOL WALKER, 1,113.57 lbs. butter from 22,021.1 lbs. milk in 342 days as a junior 3 year old. She has three sons in active service, one of which, and a half interest in the other two, have commanded the highest prices ever recorded for bulls of any breed in the west.

THE RECORDS BEHIND SIR AAGGIE DE KOL MEAD:

Five of His Seven Nearest Dams Average:		
Butter	2 Years	2,040.97 Pounds
Milk	2 Years	41,547.20 Pounds
Butter	1 Year	1,160.66 Pounds
Milk	1 Year	23,096.60 Pounds
His Seven Nearest Dams Average:		
Butter	7 Days	30.47 Pounds
Milk	7 Days	627.60 Pounds

Keep your eye on this great young sire of the Aaggie Acme-De Kol of Valley Mead breeding. His first calves measure up fully to the promise of his pedigree, and you may need one of his young sons to round out your herd one of these days.

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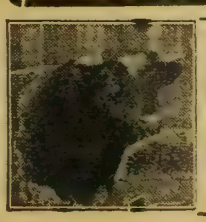

A western Nebraska farmer sold a load of Shorthorn steers at the top of the Kansas City market in May. They weighed 1,875 lbs. and sold for $8.50 per cwt., a total of $158.38 per head. He was paid for near 400 lbs. extra weight.

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For Sale—Pure Swiss Toggenburgs, does and bucks, from finest milk strains. La Corona Goatery, R. 1-416, El Monte, California.

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For Sale—5000 Avocado Seedlings. Dr. Stonebrook's Avocado Nursery, 15 N. Raymond Ave., Pasadena, California.

Citrus Nurseries, Murphy Oil Company, East Whittier California. Selected stock for sale; inspection invited.

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Weanling Boars and Gilts by Pathfinder Wonder (Great Wonder I Am ex an 800 lb. Pathfinder sow) for $10 each. Bred sows and gilts. Derryfield Farm, Capital National Bank Bldg., Sacramento, California.

Two Mammoth Sensation Jr. Open Gilts, three Ace of Pathfinder twelve weeks old boars, one Orion King Gano sow, all nice animals, for sale cheap. J. M. Alcorn, Fullerton, California.

Greenwood Farm Durocs — Moderate prices on bred gilts and weanling boars. Select individuals. Most popular breeding. H. C. Witherow, Mgr., Live Oak, Sutter County, California.

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BEEKEEPING VS. FRUIT GROWING

By Henry Perkins

THE honey bee is one of nature's greatest pollenizing agents. Without the bees and kindred nectar gathering insects many varieties of plants would become extinct for lack of fertilization. The bee is specially active as a pollenizer due to the fact that pollen forms an important part of its food supply and is eagerly sought after during the brooding season, which by the way is always when the flowers bloom the most. Greenhouse men and orchardists fully realize the necessity of having a good supply of bees present during blooming season. I have in mind a customer who tells me that were it not for the bees he keeps in his greenhouse he would not get any cucumbers.

Bees have been accused of spreading fruit tree diseases in this way as well as pollen. Tests along this line have demonstrated that they were no more to blame than other insects. Diseases still spread after the bees were banished but the setting of fruit was light. Trees that were inclosed with wire screen were in some cases free from disease, but also without fruit. The value of the bee as a pollenizer makes a good talking point for the apiarist who is endeavoring to induce a fruit grower to lease him a bee location. On the other hand, the bees can make themselves an awful nuisance to fruit and grape growers at harvest time, undoing all the good they may have accomplished earlier in the season. Much controversy has arisen in the endeavor to fix the responsibility for damage done to sweet fruits apparently by the bees. It has been repeatedly demonstrated that bees when confined with ripe grapes or peaches will starve to death unless the skin of the fruit is pierced or broken. The contention is that the fruit must first be damaged by birds or yellow jackets before the bee can make any progress. Be that as it may, the bee certainly finishes the job and gets the blame. Dampness will cause some ripe grapes to soften sufficiently about the stem to give the bees a starting point. At any rate, it is a difficult matter to convince a grape grower that bees can do him no damage when they are swarming about his grapevines, leaving little else but hulls on the clusters.

A great deal of prejudice against bees has grown out of the indifference a few bee men have shown toward the complaints of their fruit growing neighbors. Bees can be moved temporarily while a vineyard cannot. The point I am trying to make is that both industries may be of mutual benefit to each other if fair play is practiced on both sides.

Next time I will talk about honey plants of California.

CANTALOUPE INSPECTION

At a recent meeting of cantaloupe growers in the Turlock district, with F. W. Read in charge of standardization and inspection service, a committee consisting of A. R. Eddy of the Westfall Lane Company, M. C. McCauley of the California Vegetable Union and D. F. Mahaffy of the T. M. & G. was appointed to cooperate with the state department of agriculture and County Horticultural Commissioner Rutherford in inspection and standardization work during the coming season. A special effort will be made to put out nothing but best quality cantaloupes this season, and Eastern buyers desiring inspected goods have only to wire their shipper to that effect and inspection will be furnished by the state department of agriculture.—F. W. R.

A SUGGESTION

If any little flower of ours can make
one life the brighter,
If any little flower of ours can make
one heart the lighter,
God help us pluck that little flower and
take one bit of singing,
And drop it with some lonely soul and
set the echoes ringing.

—Clipped.

Californians Buying Herefords

During the past few months two well known Californians, William R. Hearst and Charles S. Howard of San Francisco, have been attracting attention through their purchases of registered Herefords that each are assembling for herds to be maintained in this state. The American Hereford Journal in reviewing the activities of these two promnient recruits to the Hereford ranks has the following to say:

"Attention of Hereford breeders has recently been directed to California by liberal purchases of high class foundation stock for two new breeding herds in that state. Representatives of William Randolph Hearst have attended a number of sales recently and made purchases of select breeding stock. They have also visited many of the leading herds and made purchases at private treaty. It is reported that they are negotiating for the purchase of one or more leading herds and of one or more of the best known bulls in the country.

"Another Californian is establishing a herd of choice registered Herefords on a 15,000 acre ranch in Northern California. He is C. S. Howard, president of the Howard Auto Company San Francisco. For some time past F. B. Stonerod of San Francisco has been talking Herefords to Mr Howard. About three weeks ago, while on a business trip to the East, Mr. Howard wired Mr. Stonerod to meet him at Cheyenne. Together they visited a number of herds in Wyoming and Colorado in search of a choice lot of animals for foundation material and for a show herd which Mr. Howard proposes to send over the western circuit this year. From John E. Painter & Sons, Roggen, Colorado, he secured 48 two year old heifers, some with calves by side and the remainder to calve next fall. In the lot were 21 daughters of Beau Perfection 6th, a half brother to Woodford; four daughters of Donald Rex, ten daughters of King Rupert and several by the imported Mansell Boy. The dams of these heifers are descendants of cows bred by Gudgell & Simpson. In addition to the heifers above mentioned Mr. Stonerod secured from the Painter herd the junior champion heifers at the 1921 Denver show and a senior yearling heifer.

"From the Hereford Corporation of Wyoming Mr. Stonerod selected a senior heifer calf of Fairfax breeding that was the futurity champion at the 1921 Denver show, and a two year old daughter of Rialto, the sire of the $6,000 Miss Rialto, purchased by Sen. J. N. Camden, Versailles, Kentucky. The Rialto heifer is in calf to the service of Bonnie Lad Jr., sire of many of the Hereford Corporation's prize winners. Two sons of Bonnie Lad Jr. also were taken.

"Other purchases were made from J. M. Carey & Bro. and the Lowell Purebred Cattle Company. Prince Imperial 2d 864009, bred and owned by Dr. T. F. De Witt, Denver, was chosen as herd bull. He is a three year old son of the noted Prince Imperial by Domino, used a number of years by Dr. De Witt and later sold to Mousel Bros., Nebraska. Prince Imperial 2d is a grandson of Mischievous 3d 343220, dam of Mischievous Jr., the De Witt bull that was grand champion at Denver last winter. His dam was by Beau Dandy. Another selection made by Mr. Stonerod from the De Witt herd was a junior yearling son of Mischievous Jr. which Dr. De Witt was preparing for this year's shows. His dam was Lady Fairfax 9th 294557 by Perfection Fairfax, and was formerly a prominent member of Governor McCray's show herd.

"The Howard herd will be in charge of William Cooper, a well known herdsman and fitter, who was for four years in charge of the Painter herd. As soon as the cattle reach their California home Mr. Cooper will begin the work of selecting and fitting a show herd for the coming season.

"Mr. Howard's ranch is located on the Pacific highway, 200 miles north of San Francisco. It is known as the Ridgewood Ranch, and is situated in Mendocino County. It is one of the show places of California in the famous redwood section. Mountains, giant trees, abundance of living water from streams fed by eternal snows, combine to make it an ideal location for a herd of registered Herefords, and an ideal place for a busy business man to retire for a week end vacation. Mr. Howard is an enthusiast over anything he undertakes, and he is taking hold of the Hereford breeding business with the same whole hearted energy that has made him a success in other lines of endeavor."

How the Hog Business Looks to Stingle

George Stingle, who maintains a small herd of Berkshires on his ranch near El Monte, has made a success of raising hogs and he is one man who refused to be stampeded when hog prices headed toward a lower level last fall. Stingle does not spend all his time raising Berkshires. Part of his time is spent thinking, and because he thinks straight and sound his conclusions and ideas are always interesting. In reply to inquiry as to the future of hogs in California, put to him by the Berkshire World, Stingle offers the following:

"At the present time there is on foot a movement of national scope to encourage the public to eat more meat. A part of the purpose is to combat the campaign being waged by milk and vegetable advocates to educate the public in the superior food value of these products. This may be necessary for the benefit of the livestock growers and again it is quite possible that it is not necessary at all.

"Aside from a limited number of people who adhere to the vegetable diet as a matter of hygienic principle the general public has not been buying vegetable fats and oils and meat substitutes because they had a superior food value but because they were cheaper.

"The housewife long ago got quite disgusted telephoning the local butcher to send over a dollar's worth of pork chops and if she wasn't home to put it through the keyhole. The grower of the pork chops was equally disgruntled when he found that the pound of pork for which he received 16 cents had cost him 18 cents to produce and that same pound in turn was costing the consumer about 42 cents.

"What was the result? The housewife quit buying it and the grower quit growing it. Now the future is beginning to shape itself.

"Due to general economic conditions the pork production costs have been cut down until there is an inviting profit in hog growing. Now what we need and what we will have is not a campaign of education (or vegetation) but a series of meat products shops maintained by the growers where the housewife can buy a dollar's worth of good meat for a dollar. This is not an experiment. It is being done in several parts of the United States right now and the practice is spreading rapidly. It is also being done successfully in several places here in Southern California and the demand for good fresh meat directly from the farmer at these small plants is so great that the prevalent idea of people in a warm country not being given to much meat eating is proving to be a fallacy. The successful operation of these plants shows that the consumer is cooperating strenuously with the producer to bridge the chasm between the two and nothing will do more to uphold the hog growing industry than this spirit of combativeness on the part of the consumer toward the prevailing exorbitant retail prices.

"Another thing we need and will have is more hogs in California, more good hogs. California does not begin to produce as much pork as she consumes. With a constantly increasing consumption of pork and with the greatest field in the world for the most economical development of good hogs, year in and year out, there is little reason to doubt the future. It will be a matter of only a short time until, with the cooperation between producer and consumer, breeder and grower, the hog industry in California will be so stabilized that all parties concerned will get a square deal."

A MILLION MORE HORSES—AND WHY

That the horseless age is receding into uncertainty is shown by the U. S. census figures, which give a grand total of 27,676,939 horses and mules on January 1, 1920, an increase of nearly a million in the last decade. Of the total 20,667,319 horses and mules were of working age, coming four years and over. Approximately 17,000,000 were in harness doing farm work, and 2,000,000 in round numbers actually at work in cities, towns and villages. These 19,000,000 horses and mules in service require 9,500,000 sets of harness.

The investigations of the Horse Association of America show that the average harness lasts 12 years. Wagons last 15 years. Both harness and wagons can be patched up to last a year or two longer, if necessary, but the figures given are a fair average for ordinary conditions. This means that approximately 800,000 sets of harness are needed every year to take the place of that worn out and discarded. Exports of harness and saddlery reached their high point in 1915 when $18,237,604 worth of equipment left the country. The amount fell off in subsequent years but increased again in 1919 and 1920, when the figure rose to $2,273,234, three times as much as in 1913.

The average working period of horses on farms is 12 years; in cities it is eight. With harness giving service for 12 years and wagons 15 years the rate of depreciation of horse drawn equipment is very low.

TO RID HOGS OF WORMS

Worms are responsible for many unthrifty herds of hogs and often aid serious swine diseases to gain a foothold, says G. Bohstedt of the animal husbandry department of the Wisconsin college of agriculture.

"To keep away worms feed the pigs well," he urges, "especially young pigs. Do not throw the feed in the mud. Keep the lots and pens clean and free from old rubbish or filthy wallows.

"A formula used successfully in the Wisconsin experiment station herd as a worm expeller includes: Santonin, 2½ grains; calomel, 2½ grains; areca nut, 1 dram; sodium bicarbonate, ½ dram.

"This dose is for a 50 pound pig and may be used in proportionate amounts for a larger or smaller pig. The santonin and calomel are the two most important parts of the formula and should be used if either of the last two be not handy.

"Withhold feed 18 hours previous to treating pigs. Give the medicine in a thin slop, if pigs are accustomed to slop, otherwise by the drench method. See that each pig gets its share. Repeat after a week or ten days.

"A good method is to have your druggist make up ten times a formula for a package so as to enable one to treat lots of ten pigs each."

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As we will not exhibit at the fairs this fall, we offer for sale the entire show herd which we are now fitting as we consider it will be better business, both for us and the breed, to have these animals win in our customers hands.

They are without doubt the best hogs Diamond Bar ever fitted and should win at any show in the country.

Our prices are very reasonable, as we want these animals to be in the show rings this fall.

Herd consists of Aged Sows, two Senior Yearling Sows, ten Junior Yearling Sows, ten Under Year Sows, three Under Year Boars and three futurity litters.

Act at once if you want one or more of these great individuals to win for you this fall.

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Also some fine, big-producing females.
All animals guaranteed breeders and free from tuberculosis.
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Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Age of Consent

What are the minimum ages at which minors are capable of contracting marriage in California? Is the law the same in all states—Subscriber, Orland.

Any unmarried male of the age of 18 years or upwards and any unmarried female of 15 years or upwards, and not otherwise disqualified, is capable of consenting to and consummating marriage. A subsequent provision with respect to the issuance of licenses provides that in case either party is a minor and has not been previously married no license may be issued except with the consent in writing of the parents or one of such parents, duly verified, but it has been held when licenses are issued without such consent the marriage is not, nevertheless, invalid. These rules vary among the different states, both as to age of consent and as to the provisions with respect to the issuance of licenses.

Olographic Will

Is a will written, dated and signed in the handwriting of the testator, whereby all property was given to his wife but wherein he failed to name any executor, a valid will? Is it necessary that it be probated?—Subscriber, Visalia.

Such will as to all property within this state is entirely valid. The party seeking the probate of such will or seeking appointment as administratrix of the will would have to execute a bond in double the value of the personal property and actual rents of real property.

Raising Rent

In the case of a lease of property with option to renew for a further term of years can a lessor raise the rental for the additional time?—Subscriber, Eureka.

That depends entirely upon the exact terms of the option. In some instances it is permissible; in some instances the renewal will be upon the exact terms of the original lease.

Alien Poll Tax

Is an alien, who has taken first naturalization papers and will take the second on the first of December, required to register and pay the poll tax under the recent constitutional amendmend and law requiring registration of aliens and poll tax of ten dollars? When must the tax be paid? I have resided in California for 30 years and pay taxes on property.—Subscriber, Galt.

The act provides that every alien male inhabitant of the state over 21 and under 60 years of age must register and pay this poll tax. For the year 1921 it is provided that the tax becomes due and payable on August 1 and delinquent on December 31, after which there is an added penalty of 50 per cent. It undoubtedly requires aliens to register even though they have made application for naturalization, and as the tax is due on August 1 it would very probably be true that even though the alien was admitted to citizenship in December he would be required to pay the tax. It is considered highly probable that under treaty provisions many citizens of foreign countries are exempt from the operation of this tax, but that is a matter which remains to be decided by the courts and probably will be decided before long.

Indian Depredation Act

Some time since a number of actions were filed against the United States for depredations committed by the Rogue River Indians of Oregon. The court of claims decided that as the Indians were at war with the United States no claims for the damages would be allowed. The case was subsequently appealed to the supreme court. What was the result?—Subscriber, Cahuila.

In 1891 an act of congress provided that where depredations were committed by a tribe in amity with the United States an action could be maintained against the Indian tribe and the United States in the court of claims. Upon the facts of the case being proven the damages would be awarded payable either out of the Indian funds of that tribe or out of the United States treasury. The Rogue River Indians, however, arose as a tribe. In the treaty after their conquest, out of the moneys awarded to them $15,000 were retained to pay the claims arising from the depredations. It was held that as the tribe as a whole was not in amity with the government claims for depredations were bounded by the provisions of the treaty and the $15,000 proportioned to the claimants who refused other reimbursement. The purpose of this Indian depredation act was to make the tribe of Indians responsible for any depredations committed by individuals of the tribe but not to cover cases wherein the tribe itself arose.

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Poultry Queries

(Conducted by Jean A. Koethen)

Droopy Chicks

When my chicks are from a month to six weeks old they begin to droop, sit around without much appetite and finally die. They have no lice or mites, have range, fresh water, growing mash, sometimes moistened with sour milk, sometimes dry, and milo maize for hard grain. I have read all the Cultivator says about feed, but still my chicks die.—Old Subscriber.

Your ration could be improved by the use of several grains instead of one. Cracked corn is particularly good for chicks. You might make the scratch feed equal parts cracked corn, wheat, milo and sprouted oats or barley, or feed the dry grains at night and the sprouted grain at noon. This, however, is merely incidental. It is not the feed that is killing your chicks. They ought to do well enough on what they have, with range and plenty of greens. It may be they are not getting enough green. You do not mention that item. When chicks the age of yours droop and sit around it is almost always because they either have coccidiosis or are having the life sucked out of them at night by mites. Diarrhea, sometimes bloody, is a symptom that is usually present in coccidiosis. If you have painted their house with an insecticide and know positively there are no mites in it, you might as well assume that the trouble is coccidiosis and treat accordingly. Feed lightly of grain and mash, giving grain night and morning and keeping the mash before the chicks only two hours a day. Keep sour milk before them all the time. With their other feed diminished they will be obliged to drink the milk, and this kills the bacteria in their intestines. Put them on fresh soil if possible. If they are on infected ground, that explains the disease. If you cannot move them, spade their yards and disinfect the house thoroughly.

Eye Trouble

Some of my hens go blind in one eye or in both. The eyes swell and they cannot see to eat. They are all on range.—Old Subscriber.

As your hens are on range it is quite likely they have foxtails or some other bit of weed in the passage between the eye and nostril, or possibly under the eyelid. Every affected eye should be carefully examined. If there is no foreign substance in sight the end of a feather dipped in boric acid solution, then inserted gently at the inner corner of the eye and twisted before it is withdrawn may draw it out of the nasal passage. After the irritating substance is removed, or if nothing is found, cleanse the eye by dropping a few drops of boric acid solution into it night and morning.

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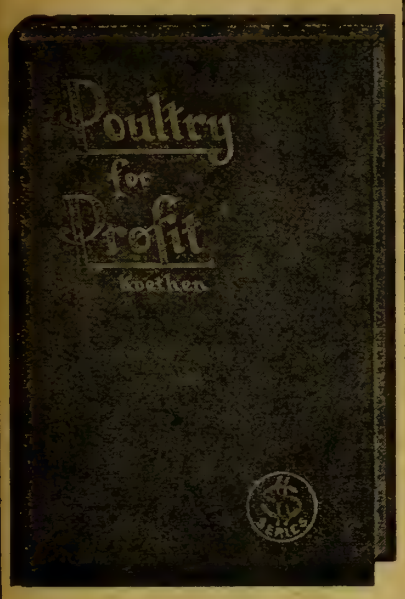

Making use of information gathered from experienced poultry writers who have been guided by their practical experiences will always result in profit from poultry.

¶ ¶ ¶

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115½ N. Broadway,
Los Angeles, Cal.

How Much Feed?

How much chick feed shall I give to 50 incubator chicks, and at what age shall I change to larger grain?—Mrs. A. M., Covina.

The best practice is to place the chick feed before the chicks on a tray for the first few days, letting them eat as they will till they have learned to eat. After the first four or five days it is scattered in clean alfalfa litter, and the chicks have to dig it out for themselves. Enough should be given so that there is always something for them if they will work for it. You can begin mixing a little whole wheat or Gyp corn or cracked corn in the chick feed almost from the first. When you see the chicks are eating it put in more of the large grain and less chick feed. Some chicks will pick out the larger grain in preference to the smaller after they are two weeks old, and the sooner you can work them onto all large grain the better for them.

Leghorn Pullets

Can you tell me where I can buy some young White Leghorn pullets?—Subscriber, Zelzah.

The best way is to watch the ads in the Cultivator and other papers. Possibly this query will put you in touch with some breeder who has them.

Sunstruck Gosling

During the extreme heat of June 21 one of my six weeks old goslings keeled over and has not been able to walk since, though it seems all right otherwise. Do you think this was sunstroke, and can you suggest anything to do for the bird?—Subscriber, Petaluma.

It may not have been exactly sunstroke. I doubt if the gosling would have lived in that case. It was overcome by the heat and may not recover the use of its legs. The only thing to do is to keep it in a shady place and feed all the greens it will eat. If it does not improve, eat it as soon as it is large enough. Both ducks and geese are quite susceptible to heat.

STORRS EGG LAYING CONTEST

Storrs, Connecticut, June 27, 1921. Report for week ending June 26:

In the thirty-fourth week of the egg laging contest the White Leghorns made a clean sweep by outlaying all other breeds. This is the first time in the tenth contest that the Leghorns have been able to capture all honors for the week. A pen of White Leghorns owned by Andrew L. Ohr, from Wallingford, Connecticut, was first for the week with a production of 58 eggs, or a yield of a little over 82 per cent..

The hens in the egg laying contest laid 3,867 eggs, or a yield of 55.2 per cent for the week. This is a drop of 263 eggs less than last week, 9 eggs less than last year for the same period and 154 eggs less than the six year average.

The four leading pens in each of the principal varieties are as follows:

Plymouth Rocks

W. H. B. Kent (Barred), 1,391 eggs; Rock Rose Farm (Barred), 1,208; Jules F. Francais (Barred), 1,126; James F. Macdonald (White), 1,087.

Rhode Island Reds

Charles H. Lane, 1,436 eggs; H. S. Bickford, 1,311; F. S. Chapin, 1,291; Henry P. Walker, 1,286.

White Leghorns

Hollywood Farm, 1,398 eggs; L. F. Ingoldsby, 1,396; James O. Le Fevre, 1,337; Jack Trevethan, 1,335.

Other Varieties

Obed G. Knight (White Wyandottes), 1,518 eggs; H. P. Cloyes (Buff Wyandottes), 1,215; A. E. Hampton (Black Leghorns), 1,081; Harry D. Emmons (White Wyandottes), 990.

CALIFORNIA FARM BUREAU EGG LAYING CONTEST

For the ten days ending June 30 the contesting hens laid 3,200 eggs, or a production of 60 per cent. S. L. Gibson of Santa Cruz led the race with a production of 79 per cent for his ten hens. The high pens were as follows:

S. L. Gibson, Santa Cruz, 79 eggs; Geo. Gray, Santa Cruz, 74; Geo. Brenneke, Santa Cruz, 74; D. B. Walls, Petaluma, 74; W. A. Ford, Umatilla, Oregon, 73; Alex Stewart, Santa Cruz, 73; H. Beernink, Lynden, Washington, 73; J. S. Conrado, Santa Cruz, 73; Gibson, 72; Ed Buttler, Oakland, 71; C. E. Hyde, Seabright, 71.

WHALES FOR POULTRY

At Newport, England, experiments were conducted with the idea of testing the feeding value for egg production of whale meal. For the purpose of the experiment four Leghorn pullets and a cockerel were used. They were penned in a small enclosed run with a small scratching shed house attached.

The birds were fed three times per day; at 7 a. m., with a mixture of grain consisting of wheat, oats and maize; at noon they were given their warm mash consisting of whale meal (scalded) 1 part by weight, clover meal (scalded) 1 part, bran (scalded) 1 part, oat meal or sharps 4 parts. The oat meal and sharps were fed on alternate days. The quantity of food given averaged 2 ounces of grain and 2 ounces of dry meal per day per bird. At 4 p. m. the birds were again given a feed of the grain mixture as in the early morning. The grain was fed in scratching litter and the soft mash in troughs. The whale meal was used in the same proportion as fish meal has been used previously and was made to substitute it entirely from the date of commencement of the experiment.

During the 31 days' trial the weights of the birds showed a slight average increase. The four pullets laid 101 eggs, giving an average per bird of 25.25 eggs for the period. The eggs produced were all over 2 ounces in weight and did not develop any tainted flavor from the whale meal. After the first day the birds took to the new food readily and were always eager for their mash afterwards. The rather strong smell of the meal probably put them off for the first day. The results obtained show that whale meal may be used as a substitute for fish or meat meals and that no detrimental effects are produced either upon the birds themselves or the quantity or quality of the eggs produced.

CASTOR BEAN MEAL

A series of experiments in feeding castor bean meal has been carried on at the Harper Adams agricultural colleeg, Newport, England.

Six cockerels were given food consisting of 1 part caster meal and 5 parts mixed meal (sharps, ground oats, etc.) at the rate of 4½ to 5 ounces per bird each day; a little grain food was given in addition, and grit and water were also available. The birds ate the food eagerly but steadily lost weight, and after about ten days they began to look unhealthy. At the end of 36 days one bird died, and four days later another. Forty days later ordinary diet without castor meal was given and the remaining birds slowly recovered. The total loss in weight over the period was 7.25 pounds, or 1.21 pound per bird. Post mortems of the dead birds disclosed the ordinary symptoms of poisoning.

CHEAPER TO STAY AT HOME

It takes a pretty hard-boiled patron to get by the check boys at restaurants, although most persons would rather care for their own coats and hats in places that provide wall hooks and coat trees. But the managements expect the patron to check his belongings and should he be persistent and refuse to give up his clothes for the privilege of buying them back again he frequently finds the service so bad from the waiter that he never goes there again.

That's merely a way of letting the patron know that he is not welcome to come there and eat if he is unwilling to go the whole way and patronize all the grafts in the house.

The uselessness of the coat checking system was illustrated the other night at a downtown restaurant when a man came in and gave the hat boy a quarter for the privilege of keeping his own coat. It was a valuable fur garment and he did not care to take the risk of it being stolen from the check room. So he hung it up on the wall hook where he could keep an eye on it.—New York Sun.

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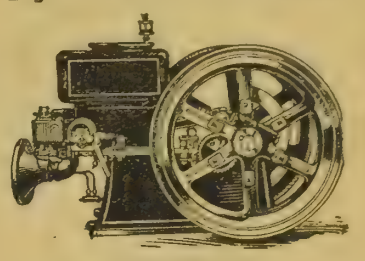

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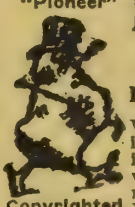

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Los Angeles Markets

Los Angeles, July 13, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price 42 cents.

July	6	7	8	9	11	12
'21 ...	43	43	43	43	43	43

CHEESE

Brokers' prices:
California flats, 19@21.

EGGS

Fresh extras (case included): Produce Exchange closing price 35 per dozen. price 33. Pullets, closing price 29 per doz.; Pewee pullets, 18.

July	6	7	8	9	11	12
'21 ...	32	33	34	34	35	35

POULTRY

Price to producers: Hens, 12@23; colored, 32; broilers, 28@30; roasters, 38; old roosters, 12; fryers, 34; ducks, old, 23; ducklings, Pekin, 3½ up, 30; others, 30; geese, 25; turkeys, live, young tom, 50; dr., 55; old, live, 40; dr., 41; hens, live 40; dr., 44; squabs, 45@47.

Belgian hares, live, 12@16; old 8.

LIVESTOCK

Los Angeles, July 12. — Weighed and delivered off cars without food or water: Hogs (hard grain fed), 125 to 175 lbs., 9.00; 175 to 225 lbs., 9.00.

Cattle (on foot, gross weight): Steers, good, 8.00@8.50; medium, 7.50@8.00. Cows, good, 6.00@6.50; medium, 5.50@6.00. Calves, 125 to 150 lbs., 9.50; 175 to 225 lbs., 9.00.

Sheep: Ewes, 5.00@5.50; lambs, 8.50@9.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock July 12, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies heavy, movement slow, market dull. New Stock: Wide range in prices, mostly 50@60; poorer 40 per lug. No. 1, sacked per cwt. mostly 1.25@1.40, poorer 1.00@1.10, bakers, 2.50. steady. Stocktons: Australian Browns, sacked, per cwt. 90@1.00; fy. 1.25 sacked per cwt. White 75@90 lug.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock July 12, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Supplies liberal, market weak. Kentucky Wonder mostly 3½@4½; jobbing 2½@3½; poorer, 2.

Beets: Doz., 35@40.

Cabbage: Field crate 2.00@2.25.

Carrots: Doz., mostly 35@40.

Celery: Supplies liberal, market steady, cr. 6.00@6.25.

Corn: Supplies heavy, market weaker, local mostly 70@80; poorer, 50@60.

Cucumbers: Supplies liberal, market steady. Local: Lugs mostly 60@75.

Lettuce: Local field crate mostly 90; few best, 1.00@1.10; poorer, 70@80.

Peppers: Supplies moderate; market weak. Imperial Valley: Bells mostly 15@16, few fancy 20@25 per lb.

Radishes: Supplies moderate, market steady, 10@15 per dozen bunches.

Tomatoes: Supplies moderate, market stronger. Local, 2.00@2.25 cr.; per lug 3.00@3.25; No. 2. 1.50@2.00.

Turnips: 35@40 per doz. bunches.

FRESH FRUITS

Apples: New stock: Supplies liberal, market steady, mostly 3@4, few fancy 5 per lb.; by the lug 1.10@1.25. Crabapples mostly 75 lug.

Apricots: Supplies heavy, market steady, 3@4 per lb.; few fancy, 5.

Blackberries: Supplies moderate, market firm, 30 pint crate mostly 3.50@3.75.

Cantaloupes: Demand and movement moderate, market firm. Standards mostly 2.25@2.50, few 2.75, flats 90@1.10. Jobbing: Standards 2.00@2.25, mostly 2.25, few 2.35, flats 75@85. Arizonas: flats 85@90. Casabas: Supplies increasing, demand moderate, market steady, 2½@3 per lb.

Cherries: Supplies light. Demand good, market steady. Whites, Royal Anns mostly 12@15; Black Republicans 12@20, Bings 18@22, few fancy 25@30 per lb.

Figs: Supplies light, market firm. Northerns: Flats, Black Spanish mostly 1.25. Imperial Valley: San Pedros, flats mostly 1.00. Locals: 20 per lb.

Grapes: Supplies light, market weak. Per lb., Thompson Seedless and Malagas 12@14; poorer 9@10.

Loganberries: Supplies limited, market stronger, 30 pint crates mostly 3.50@3.75.

Peaches: Supplies light, movement moderate, market stronger; wide range in quality and condition. Lugs, various varieties, best 1.50@2.00; poorer 1.00; Early Rose, 1.90@2.00; fy., 2.25@2.50.

Plums: Suplies liberal, movement moderate, market weak. Few varieties mostly 3@5 per lb.

Prunes: 5@5½ per lb.; Satsuma and Climax 5@6½ per lb.

Raspberries: Supplies light, market firm. Cuthberts 2.75@3.25; few 3.50.

Strawberries: Supplies moderate, market firm. Per crate, No. 1's 3.00@3.75; No. 2 stock 2.50@2.75.

Watermelons: Supplies liberal. Demand good, market stronger. Mostly 2½, few 3, poorer 1¾@2 per lb. Jobbing: Klondikes $45@55; other varieties 30@40 per ton.

CITRUS FRUITS

Grapefruit: Suplies liberal, market steady, movement slow. Local: Per box, market pack 2.00@2.50, special packed brands 3.00@4.00; ordinary 1.75.

Lemons: Supplies moderate, demand good, market strong. Local: Packed box mostly 5.00, few fancy 6.00@7.00, loose 3.00@3.50, per box fancy 4.00@4.25, lug boxes 1.25@1.50.

Oranges: Supplies liberal, market steady. Valencias, best brands, all sizes, 3.50@4.00, few 4.50; ordinary 2.50@3.50; loose pack 1.00@1.50.

HONEY

As reported by the Bureau of Markets: Los Angeles: Supplies of White Sage, White Orange and Light Alfalfa, heavy. Light wire inquiry. Movement very slow, market steady, little change in prices. Carloads f. o. b. usual terms at loading points: White Orange new crop 12@12½; old crop 10@11; Light Amber Alfalfa old crop 5@6, new crop 5½@6½; White Sage 12@12½. Hawaiian, no sales reported. Beeswax: Market weak, very light demand. Dealers asking 30@33 for light and 24@26 for dark. Estimate of crop unchanged from last report. Sage and Orange crop very uneven, some places normal, others practically none. Exchange expects stronger market but other brokers expect weak and dull market.

GRAIN AND FEEDS

Grain Exch. price bid July 12:
Corn: Bulk No. 2, Yellow 1.60.
Bran: Kansas, 24.00.
Kafir: Eastern, No. 2, 1.56¼.
Barley: 1.12½.

HAY

Alfalfa Growers of California report prevailing prices f. o. b., Los Angeles:

No. 1 Dairy	19.00
Standard	15.00

Receipts light; no improvement in price or tone. Some dealers and users have commenced to stock up for fall and winter. Prices so low that growers in some sections would get practically nothing for their hay, after paying freight, baling, hauling, etc., if they were to sell in the central markets at present prices.

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats	18.00@26.00
Barley	16.00@24.00
Alfalfa, No. 1 Dairy	18.00
Standard	16.00
Straw	10.00@13.00

San Francisco Markets

San Francisco, July 12, 1921.

Quotations made daily by San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

BUTTER

Dairy Exchange quotations July 12:
Extras Choice 41½

Dairy Exchange prices extras this week and year ago:

July	5	6	7	9	11	12
'21 ...	41½	42	41	..	41½	41½
'20 ...	61	61	60½	..	60	..

CHEESE

Dairy Exchange quotations:

Jack, full cream, street prices	14½@16
Oregon Trips	20
Oregon, Y. A.	34
Oregon Trips	32
Cal. Flats	19@21½

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases, July 12:
Extras 44½
Extra Firsts 40
Dirties No. 1 35
Extra Pullets 30
Undersized 23

July	5	6	7	9	11	12
'21 ...	34½	36	37½	..	39½	44½
'20 ...	51½	51½	52½	..	55	..

POULTRY

Wholesale prices are:

Young chickens: Leghorns, 1 to 1¼ lbs., 28@30; 1½ to 1¾ lbs., 30; 2 lbs. and up, 38; heavy breeds, 1½ to 1¾ lbs., 30@33; 2 lbs. and up, 48@50. Staggy roosters, 20@25; old roosters, Leghorns, 15; do, heavy breeds, 18. Hens: Leghorns, large, 20; do, small to medium, 17@20; heavy breeds, 30@32.

Ducks: Young, 35 per lb., old, 25; geese, 25 per lb; turkeys live, 35; dressed, 45@50; Belgian hares live, 13@14; dressed, 18@20; squabs fancy, 45@48; do, common, 3.50 per doz.

LIVESTOCK

Western Meat Company prices are:

Cattle: Steers, No. 1, 6@6½; do, second quality, 5½@6.

Cows and Heifers: No. 1, 4½@5; do, second quality, 4@4½.

Calves: Light weight, 7@7½; heavy 5@6.

Sheep: Wethers, 3½@4; ewes, 2½@3.

Lambs: Milk, 6½@7.

Hogs: Hard, fat, grain-fed, weighing 125 to 200 lbs., 11; do, 200 to 250 lbs., 10; do, 250-350 lbs., 9; light sows, 9; heavy sows, 8.

California Farm Bureau Association reports:

No. Hogs	Ave. Wt.	Dock		Price
Modesto, July 5				
66	169	...		$10.90
17	253	...		9.90
5	360	50	¼	8.40
1	110	...		8.00

One car, 21 consignors, $1,802.12.

Chowchilla, July 7				
53	167	...		10.00
14	240	...		9.00
5	112	...		9.50
1	300	...		8.50

One car, 15 consignors, $1,338.87.

Fresno, July 8				
69	179	...		9.75
6	196	...		9.50
12	252	...		8.75

One car, 8 consignors, $1,642.81.

Total for the week, 3 cars, 44 consignors, $4,783.80.

These prices are net to the farmer, while the prices as quoted in the papers of other markets are f. o. b. the packers yards.

POTATOES AND ONIONS

Wholesale prices:

Potatoes: Street prices: Old crop 1.25@2.00. New, Garnets, 1.25@1.50 per 100 lbs.; do, White, 1.50@1.75.

Onions: Australian brown, 35@50 per bag; new red, 75@1.00 bag; green, 1.50@1.75 bag.

Garlic: New, 6-8.

VEGETABLES

Wholesale selling price:

Artichokes: Crate, 3.00@12.00.

Beets: 1.75@2.00 per sack.

Beans: String, 6@9; poor quality, 1.00 sack.

Carrots: Sk., 1.25@1.50.

Celery: New, 8.00@9.00 cr.

Corn: Alameda, 6.25@7.50 per crate of about 9 dozen ears; 5.25@6.00 per sack.

Cucumbers: 25@75 lug; English 2.00.

Eggplant: Lb., 10.

Okra: 8@12½ lb.

Peas: Lb., 5@7; fcy., 7; sk., 1.00.

Peppers: Bells, 10@13; Chili, 15@20.

Squash: Lug, 1.50@2.50.

Spinach: Lb., 2@4.

Tomatoes: Imperial, green, 1.00@1.75; do, ripe, 1.75@2.00; Merced, box, 1.60; do, small lug, 2.50; Los Angeles, 2.25.

FRESH FRUITS

Apples: New crop white Astrakhans, 50@75 per small lug; do, reds, 50@75 per lug box; fancy Gravenstein, 75@1.50.

Apricots: 1.00@1.25 per 4 basket cr.; 60@1.00 per lug; 3@5 lb.; fancy 6.

Avocados: California, doz., 3.00@6.00.

Bananas: Lb., 8½@10.

Cantaloupes: Standard, 2.50@2.75; ponies, 2.00@2.50; flats, 75@1.00; Honey Dew, 1.50@2.00 per crate; flats, 75@1.00; casabas, 1.75@2.50.

Cherries: Tartarians, bulk, 5@7 per lb., 1.00@1.25 per drawer; soft black, 4@6 per lb.; Bings, 17½@20 per lb.; Santa Cruz, 11@12; Royal Anne, 7@10 lb., 75@1.25 drawer.

Currants: 1.15@1.30 per drawer; 8.00@9.00 per chest.

Figs: Black, single layer, 40@65; double, 75@1.00.

Gooseberries: 7@8 lb.; English, 15 lb.

Loganberries: Red, 7.00 per chest; 35 per drawer; do, black, 20@30.

Loquats: 6@7.

Peaches: 1.00@1.75 cr.; 3.00@2.25 lug.

Pears: Bartlett, 75@1.00.

Plums: 1.50@2.00; fcy., 2.25.

Raspberries: 60@75 per drawer; 12.00 chest.

Strawberries: Peninsula and Watsonville, 50@70, some higher; Salinas, 1.20@1.60 per crate; Watsonville, 1.00@1.25 crate, according to quality.

Watermelons: 2@8 per lb.

CITRUS

Valencias, 3.50@4.75 box. Lemons, 8.00@9.50 per box; Lemonettes, 3.00@4.25; grapefruit, 2.50@4.00.

BEANS

Below California Bean Growers Association shippers prices choice recleaned:

Large Whites	3.70
Small Whites	3.70
Pinks	6.50
Mexican Reds	8.00
Red Kidney	9.75
Henderson Bush	4.40
Cranberries	6.25
Bayos	11.00
Blackeyes	8.00

HAY AND FEED

Alfalfa Growers of California state that prevailing prices f. o. b. S. F. are:

No. 1 Dairy	16.50
Standard	14.50

Under date of July 1, A. W. Scott Co. says:

Receipts 1,500 tons, 1,318 last week. A quantity of hay has come in upon consignment and the necessity of moving this has made prices extremely weak and at a lower level all around. No selling activity has been reported from country districts where pressing is now going on in every direction with fullest activity. Alfalfa continues dull and heavy with arrivals and offerings far in excess of demand. Clover hay is selling readily at prices asked and is doing considerably better with the dairy trade than alfalfa at the present time. Mill feeds seem to have about reached their low level and advances are likely to take place, owing to the fact that the Northwest is now supplying the heavy Eastern demand and is not directing milling products this way as formerly.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers charges of switching, cartage, commission and handling expenses must be added according to conditions).

Wheat Hay, fancy	15.00@18.00
Wheat Hay, fair grade	13.00@15.00
Tame Oat Hay	12.00@15.00
Wild Oat Hay, new crop	10.00@12.00
Barley Hay	10.00@12.00
Alfalfa Hay, new 2nd cutting	12.00@14.00
Alfalfa Hay, new first cutting	9.00@11.00
Stock Hay	8.00@10.00
Barley, Ground	29.00@31.00
Barley, Rolled	25.00@27.00
Oats, Rolled Feed	32.00@34.00
Bran, Red	30.00@34.00
Bran, White	35.00@37.00
Millrun	32.00@38.00
Middlings	46.00@48.00
Linseed Meal	35.00@37.00
Coco Meal	22.00@25.00
Alfalfa Meal, old crop	23.00@25.00
Alfalfa Meal, new first cutting	21.00@23.00
Cottonseed Meal	35.00@40.00
Sugar Beet Pulp	32.00
Molasses, Tanks	15.00@17.00
Molasses, Bbl.	21.00@25.00
Milo	40.00@44.00
Corn Meal	40.00@42.00
Scratch Feed	46.00@47.00

GRAIN

Wheat: Milling, 1.90@2.05; feed, 1.90@2.05.

Barley: Feed, 1.00@1.07½; shipping, 1.20@1.30.

Oats: Red Feed, 1.20@1.30.

Corn: California yellow, 1.55@1.60; white Egyptian, 2.40@2.60 per cental; California red milo, 2.00@2.10; Eastern red milo, 1.95@2.00; Eastern kafir, 1.75@1.80.

Citrus Markets

Los Angeles, July 13, 1921.

Large quantities of home grown melons, small fruits and even deciduous fresh fruits are meeting the demand for general Eastern consumption and oranges are not in keenest demand. This is resulting in an exceptionally quiet condition and prices reported from Eastern markets are not entirely satisfactory.

On the other hand lemons are given warmest reception. The weather reported fom nearly all portions of the East has been exceptionally hot and $9.00 to as high as $14.00 have been reported during the week. These prices have stimulated imports and at the present time there are nearly 11,000 boxes of lemons on piers or will be available for sale within the next 30 days.

Shipments

Shipments of citrus fruits to date since November 1, 1920, Southern California: Oranges, 30,499 cars; lemons, 8,372; total, 38,871. To same date last season: Oranges, 24,464; lemons, 6,259; total, 30,723. From Central California to date this season: Oranges, 6,629; lemons, 210; total, 6,839. To same date last season: Oranges, 5,374; lemons, 289; total, 5,663. From From Central California to date this sea- Oranges, 305; lemons, 5; total, 310. To same date last season: Oranges, 261; lemons, 22; total, 283.

AT THE AUCTIONS

July 6

New York: 38 or., 3 lem. Val. 2.95-6.70, Seeds. 2.55, Sweets 3.00-3.35, lem. 5.75-7.20.

St. Louis: 4 or., 4 lem. Val. 2.65-5.05, lem. 6.70-11.45.

Boston: 14 or., 2 lem. Val. 3.80-5.35, Seeds. 3.35, lem. 7.30-10.30.

Pittsburg: 5 or., 5 lem. Val. 2.65-5.30, lem. 3.00-11.30.

Cincinnati: 3 or., 7 lem. Val. 3.70-4.65, lem. 5.75-10.40.

Cleveland: 8 or., 13 lem. Val. 3.10-5.30, lem. 4.20-13.50.

Philadelphia: 16 or., 4 lem. Val. 1.45-5.50, lem. 3.80-7.85.

July 7

New York: 46 or., 3 grapefruit, 6 lem. Val. 2.70-7.05, Sweets 3.20-3.50, grapefruit 2.70-6.20, lem. 3.90-10.75.

Philadelphia: 14 or., 6 lem. Val. 3.35-5.45, lem. 4.10-10.20.

Pittsburg: 9 or., 5 lem. Val. 2.05-5.10, Mikes. 3.10-3.25, lem. 6.40-11.80.

St. Louis: 3 or., 4 lem. Val. 4.15-4.75, lem. 7.40-10.50.

Boston: 13 or., 4 lem. Val. 3.10-4.65, lem. 5.95-9.00.

July 8

New York: 22 or., 3 mixed, 5 lem. Val. 2.75-6.80, Sweets 3.10, grapefruit 2.70-4.25, lem. 6.65-11.80.

Cleveland: 6 or., 8 lem. Val. 4.30-5.50, lem. 6.70-12.65.

St. Louis: 4 or., 6 lem. Val. 4.20-5.37, lem. 5.00-10.10.

Pittsburg: 5 or., 5 lem. Val. 2.40-4.80, Sweets 1.95, Bloods 2.05, Mikes. 2.95, lem. 7.90-12.00.

Cincinnati: 5 or., 6 lem. Val. 2.30-4.85, lem. 8.27-10.80.

Boston: 12 or., 4 lem. Val. 2.80-5.00, Mikes. 3.50-3.80, lem. 5.80-11.50.

Philadelphia: 8 or., 5 lem. Val. 2.40-4.70, Jaffas 2.70, Mikes. 2.05-2.70, grapefruit 235, lem. 2.10-9.25.

July 11

New York: 46 or., 4 mixed, 6 lem. Val. 2.65-6.65, grapefruit 3.75, seedless grapefruit 3.10-4.15, Mikes. halves 1.40-1.75, Seeds. 2.80-3.55, lem. 9.25-14.25.

St. Louis: 5 or., 6 lem. Val. 3.35-5.20, lem. 4.10-10.65.

Cincinnati: 4 or., 6 lem. Val. 3.45-4.95, lem. 5.90-11.65.

Boston: 19 or., 9 lem. Val. 2.50-5.25, grapefruit 4.35-5.95, Seeds. 2.70-3.20, lem. 3.70-11.30.

Pittsburg: 8 or., 5 lem. Val. 2.30-5.20, Mikes. 1.70-2.10, lem. 8.75-14.00.

Philadelphia: 14 or., 2 lem. Val. 2.05-5.85, grapefruit 3.90-4.80, lem. 7.30-11.25.

July 12

New York: 30 or., 7 mixed, 3 lem. Val. 2.55-7.10, grapefruit 3.55-5.10, seedless grapefruit 2.85-3.55, Sweets 2.85-3.25, Seeds. 2.75-3.00, Mikes. 3.20, lem. 4.75-13.07.

Philadelphia: 9 or., 3 lem. Val. 3.20-5.45, Mikes. 1.50-2.00, lem. 5.95-12.35.

St. Louis: 3 or., 4 lem. Val. 3.80-5.05, lem. 8.07-11.40.

Boston: 14 or., 3 lem. Val. 3.25-5.25, seedless grapefruit 5.00-6.35, lem. 4.95-11.70.

Pittsburg: 5 or., 5 lem. Val. 3.10-5.15, lem. 7.95-20.20.

WEATHER REPORT

San Francisco, Cal., July 9, 1921.

Stations	Rainfall Wk.	Season	Norm.	Temp. Max.	Min.
Eureka	.00	.00	.05	62	46
Red Bluff	.00	.00	.00	106	66
Sacramento	.00	.00	.00	106	62
San Francisco	.00	.00	.00	94	52
San Jose	.00	.00	.00	102	54
Fresno	.00	.00	.00	110	64
San Luis Obispo	.00	.00	.01	92	48
Los Angeles	.00	.00	.00	84	60
San Diego	T	T	.00	74	60

HIS ARGUMENT

Johnny hated his early bed time. In the course of one of the nightly arguments his mother told him how all the little chicks went to sleep with the sun. For a moment he was silent, then he piped up: "But the old hen goes to bed with them, you know, mamma."

The extra half hour was conceded.

LET 'ER DROP!

A speaker was irritated by the noise made by the assemblage. "Silence!" he roared. "I want this hall to be so still you can hear a pin drop." There was a deadly quiet for a moment; then an irrepressible youth piped up: "Let 'er drop."

THE SPANISH BROOM

This ornamental, drouth resistant plant is a prime favorite in all parts of California. It is generally catalogued under its true name of Sparium junceum, though occasionally someone lists it under its garden name of Genista Hispanica. For growth under the hardest conditions it is not surpassed in value by any plant we grow. A recent bulletin published in Italy, says of it:

"In domestic economy, broom is put to various uses, small faggots are made to light fires, large sweeping brooms, temporary roofs for huts, bands for plants fixed to props, bushes for silk worms, etc. In Calabria, when silk worm eggs were produced, the branches, bound together in the form of small screens, served here and there for the female moths to lay their eggs on, a purpose to which they were extremely well adapted.

"For firewood, broom is cut every three years, towards the end of the autumn, and grazing is prohibited for a year after cutting. It is a good honey producing plant, and its seeds could be fed to poultry and pigeons. The part of greatest utility is the bark, from which a textile fibre can be extracted. The latter is prepared, spun and woven as a home industry in many parts of Calabria, especially the province of Cosenza. These fibres are used also to make ropes and paper, which are likewise distinguished for their great lightness."

CINNAMON CUB CAPTURED IN YOSEMITE

A real live Teddy bear has been taken in Yosemite Creek in Yosemite National Park. Evidently it had gotten lost and was found crawling out on a log where it was captured and taken down to the village. The cub is brown in color and is therefore a real cinnamon bear. He is taking well to the nourishment supplied by Chief Ranger Townsley and the ranger and nature guides hope to raise him until he is able to take care of himself. The nature guides photographed the little fellow the other day. He is so small that the background for the photograph was a ranger's hat.

Visitors to the Yosemite are being given the opportunity again this year to hear the nature guides talk on the geology, birds, animals and flowers of the region. One night recently 1,100 people heard the nature guide's talk at Camp Curry on the water ouzel, the bird so beloved of John Muir, which sometimes builds its nest behind a waterfall, thus necessitating the mother bird to dive repeatedly through the fall in carrying food to her young.

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DURABILITY OF WOOD NOT AFFECTED BY TIME OF CUTTING

Many of the theories advanced regarding the durability of wood attribute too much importance to the time of cutting, say specialists of the U. S. forest products laboratory. As a matter of fact, the time of cutting has very little effect upon the durability or other properties if the timber is properly cared for after it is cut. The method of handling logs at different times of the year, mowever, does influence their durability.

Timber cut in late fall and winter seasons more slowly and with less checking than during the warmer months, and when proper storage or handling is impracticable, winter cutting is best. Fungi and insects do not attack wood out of doors in cold weather, and by the time warm weather arrives the wood is partly seasoned and somewhat less susceptible to attack. It is for these reasons that winter cutting is advantageous, and not on account of a smaller amount of moisture or sap in the wood in winter, as the popular belief has it. There is practically no difference in moisture content of green wood in winter and summer.

EZEKIEL'S OFFENSE

Now, Ezekiel Smith was a most patient and loving man. Never did he give offense to anyone—let alone his wife.

She was a fine woman—masterly and strong—and her home was her idol.

Ezekiel Smith always opened the door with his handkerchiefs, lest his fingers should leave their mark on the brilliant brass doorknob.

"Zekey," she said one evening, as he sank quietly into a chair, "I can read you like a book. You've been doing something wrong! Did you scrape your boots before entering the hall?"

"Yes, my dear!"

"Then what have you done?"

Ezekiel blushed to the roots of his hair and clasped his shaking knees.

"Martha," he stammered, "I hung my hat up carelessly, and a raindrop fell from it onto the umbrella stand!" —London Answers.

WE DON'T WANT ALFALFA WEEVIL

The recent appearance of the alfalfa weevil in several thousand acres in the vicinity of Reno, Nevada, makes it imperative that everyone be on the lookout for this dangerous pest, since it may very easily be brought across the line and the success of any effort to exterminate it, should it become introduced, depends upon its early discovery.

The adult weevil, or beetle stage, is about a quarter of an inch long, brownish gray in color, and has a long snout. The larva, or immature stage, which does the most damage, is yellowish green in color with a tiny black head, legless, and generally assumes a curved position. It will gentrally be found in the crotches or boots of the growing part of the plant, and any plant the leaves of which show feeding notches of insects should be examined.

Grapes in the Casa Grande district of Arizona have been tested for sugar content and found to contain 18 5/10 per cent sugar, the minimum requirement for which is 17 per cent.

MOSAIC OF POTATOES

As a result of investigations on the mosaic disease of potatoes by four investigators of the United States department of agriculture the following conclusions were reached.

The potato mosaic, although more common and apparently particularly destructive in certain sections of the United States, is nevertheless widely distributed in the rest of North America.

The disease has a decidedly detrimental effect on the yield. The characteristic symptoms of the disease are noticeable on the aerial parts of the plant, especially on the foliage. These symptoms may be modified or obscured by differences in environment or variety. Tubers of diseased plants transmit the disease. Grafting a healthy scion upon a diseased stock or a diseased scion upon a healthy stock may result in the development of the disease in the healthy plant.

Mosaic may be transmitted by transferring juice from a diseased plant to a healthy plant. The disease can also be transmitted by the agency of aphids. Mosaic apparently tends to increase the sugar content of the leaves and to reduce their starch content. Hill selection has not proved successful for maintaining healthy stock when practiced in fields in which there was a considerable number of plants attacked by mosaic. On the other hand, pulling up the infected plants before the aphids became numerous was an effective method for checking the spread of the disease.

COMING EVENTS

Frontier Days Celebration, Prescott, Arizona, July 2-5.
North of Bay Counties Fair, Santa Rosa, August 24-28.
Downey Community Fair, Downey, August 25-27.
Yuba County Agricultural Fair, Browns Valley, Aug. 29-31.
California State Fair, Sacramento, Sept. 3-11.
Fall River Fair, McArthur, September 7-9.
San Joaquin County Fair, Stockton, September 12-17.
Tulare County Livestock and Agricultural Show, Tulare, Sept. 13-17.
Humboldt County Fair, Ferndale, Sept. 13-17.
San Fernando Valley Fair and Market, Owensmouth, Sept. 13-18.
Glenn County Fair, Orland, Sept. 19-24.
Kings County Fair, Hanford, Sept. 19-24.
San Diego County Fair, San Diego, Sept. 21-24.
Fresno District Fair, Fresno, Sept. 26-Oct. 1.
Arbuckle Almond Show, Arbuckle, Sept. 28-Oct. 2.
Ventura County Fair, Ventura, Oct. 5-8.
Shasta County Farm Bureau Fair, Anderson, October 6-8.
Southern California Fair, Riverside, Oct. 11-16.
California Association of Nurserymen Annual Convention, Exposition Park, Los Angeles, Oct. 20-22.
Date Festival, Coachella Valley, Oct. 21-23.
California National Livestock Show, San Francisco, Oct. 22-30.
California Horse Breeders Association, Los Angeles, Oct. 30-Nov. 5.
Pacific International Livestock Exposition, Portland, Oregon, Nov. 5-12.
Stanislaus County Poultrymen's Association Show, Winter Garden, Dec. 4-7.

TRANS-PACIFIC BAGGAGE COMBED FOR PLANT PESTS

Arriving in San Francisco June 25 from the Orient via Honolulu, the Toyo Kisen Kaisha liner, Taiyo Maru, brought 777 passengers, the largest number carried into a California port by a single steamer in several years. The significance to the farmer and fruit grower lies in the fact that all the baggage belonging to 777 passengers was inspected not only for dutiable articles but for insect pests and plant diseases as well. With larger and faster marine transportation the fruit flies are being brought nearer and nearer to the California fruit industry.

A live farm bureau has been organized in Yavapai County, Arizona, and the following officers elected: L. L. Bates, president; David H. Biles, vice-president; Paul E. Lodge, secretary, and G. W. Hankin, treasurer.

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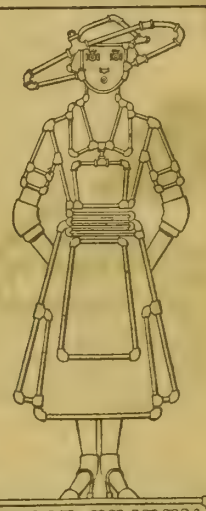

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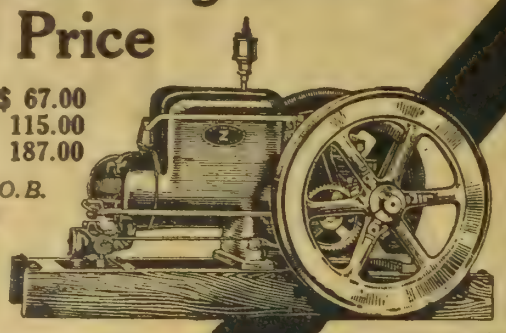

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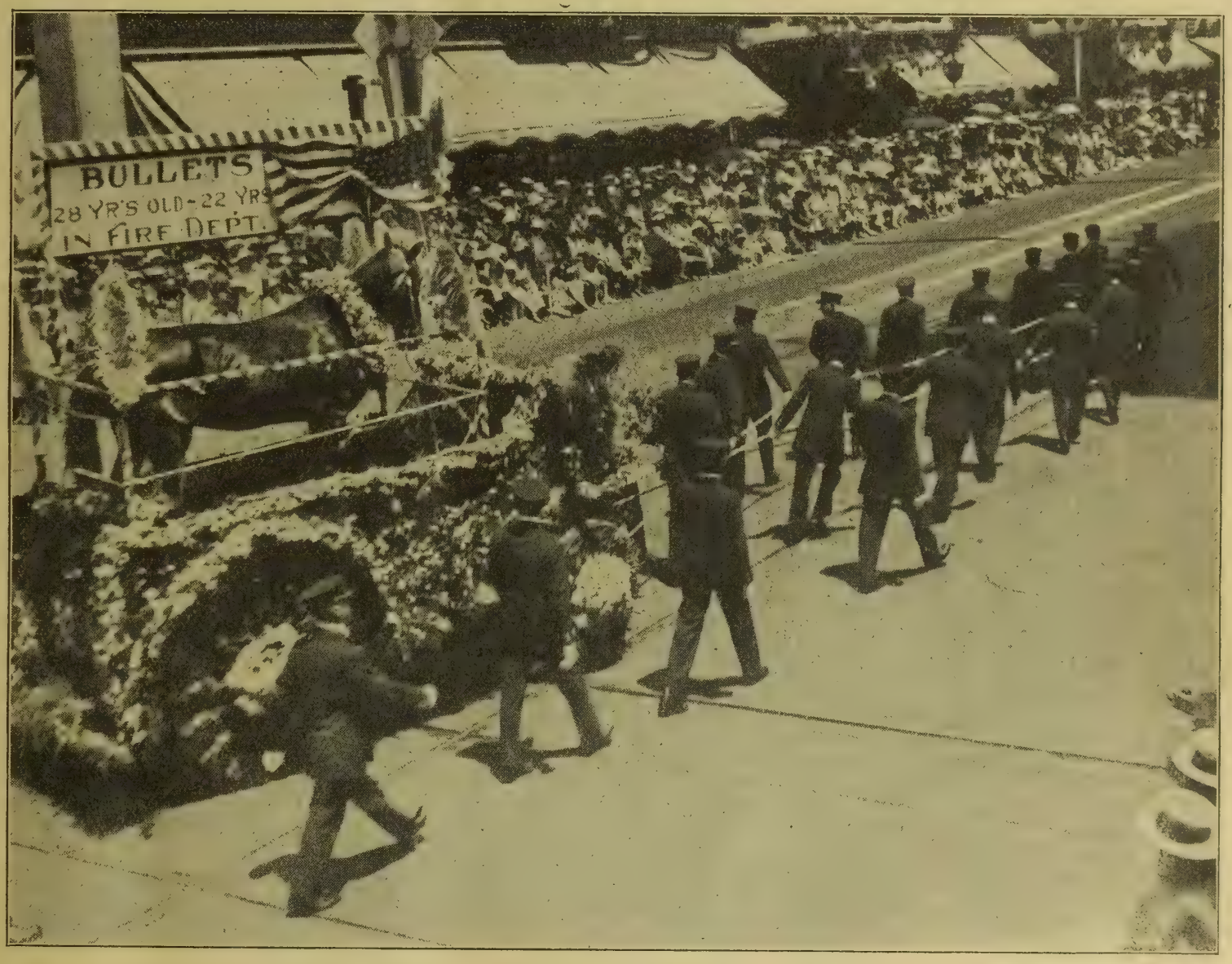
CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LVII — July 23, 1921 — No. 4



THE other day they had a great parade in Los Angeles. It was in honor of the Elks who were visiting the Coast, but there were many features in the parade which had local, or even wider, significance than the honoring of visitors to California. One of these was presented by the fire department. At the head of this section was a big banner borne by two of the firemen, inscribed, "Last Appearance of Los Angeles Fire Department Horses." Some of the horses were led in state, burdened only with decorative trappings; others in threes were drawing the old time steamers in golden harness and with golden reins. It seemed the proudest day of their lives, but there were tears in the eyes of many beholders. One, Old Bullets, was given honor above all others. He was the sole feature in a float decorated with thousands of gladiolus blossoms. Above him was the inscription, "Bullets, 28 Years Old, 22 Years in Fire Department." The motive power for this float was entirely from the strong arms of nearly a score of firemen, and on either side as guard of honor were other firemen.

—Photo Courtesy L. A. Examiner

Established 1877 Forty-fourth Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877

Combined with California Cultivator 1914 Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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Saturday, July 23, 1921

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

If any of the 40,000 Cultivator subscribers fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

EDITORIALETTES

We have all seen rounder, trimmer, handsomer horses than the one who was honored as shown by the cover illustration. This faithful old worker shows his ribs somewhat but in lieu of beauty he has a record of service held by few horses. At six years of age he was purchased and put to work in the fire department of Los Angeles. Owing to his willingness and quickness of response he was given the name of "Bullets," and the gong had hardly sounded its first clang when he was under the harness. After nearly 20 years of continuous service he was deemed worthy of partial retirement and was placed on the "horseshoer's wagon." This is a big truck with forge and kit of blacksmith tools which went from station to station with the smithy for shoeing the various horses in the service. When an active service horse was taken out of his stall to be shod, Bullets for the time being took his place, and many was the time when in this special work he again answered the clang of the gong. His high intelligence fitted him for doing this pick-up work apparently as well as those trained in their particular stalls.

* * *

All the horses of the department in the city of Los Angeles are now retired to the parks of the city and the old steamer fire engines are being motorized, but the work demanded by the park department gives opportunity for partial retirement to these faithful servants.

* * *

The department of agriculture is realizing more than ever the need of more thorough investigation and the necessity of more helpfulness and thorough work in the matter of markets and other lines of farm economics. Secretary Wallace recently called a conference of workers amongst whom were Dean Thomas F. Hunt, Prof. G. I. Christie of Indiana, Prof. G. F. Warren of Cornell, Prof. Andrew Boss of Minnesota, and Prof. T. F. Cooper of Kentucky to consider the redirecting of activities of the department along economic lines. The members of this conference recommended more complete separation of regulatory work from research and service activities. Especially was attention given to the bureau of markets and crop estimates. These bureaus are giving actual service to food producers, and the extension of their work is to be commended.

* * *

Lee A. Strong, formerly chief deputy quarantine officer of the state department of agriculture, has been made chief quarantine officer and has transferred his headquarters from San Francisco to Sacramento. D. B. Mackie, formerly chief quarantine officer, will now devote all of his time to pest control, giving special attention to vacuum fumigation, the great success of which has been made possible because of Mr. Mackie's investigations and experiments during the past two years. Mr. Strong's work in San Francisco will be continued by George Compere.

DEEP CULTURE

There are times and there are crops which call for shallow cultivation, but we are thorough believers in deep culture. If there is a season of the year when the orchardist should follow shallow cultivation, it is probably the season through which we are now passing. The hot sun of July and August takes away moisture rapidly, and the dry dust mulch on top should be maintained without bringing up the moist lower soil. But it is only a short time until deeper work will be in order. Then let the plow, if necessary, take off some of the shallower fibrous roots. In doing so it turns some of the aerified upper soil down next to the ends of those roots and possibly with it some of the fertilizers which may have been applied to the surface. The new rootlets soon reach for this renewed soil and the available fertility made possible by the summer sun, and the roots which have been cut away are replaced by new ones. Besides, such culture makes possible the salvage even of those rains which may come with a rush in later fall, and it all makes for deep rooting and liberal growing of the cover crop. All orchardists do not agree with this, but try check rows with this method and others.

HIGHER STANDARDS

Standardization is resulting in a better reputation for California fruit and more money for the California fruit producer. The observations which have been made by standardization specialists are aiding the producer to do a whole lot of the standardizing before the products are delivered to the packing house. There is some wonderfully interesting reading in the article by L. J. Weishaar of the state inspection service in which he records some of the observations made on train accompanying shipment of cantaloupes to Eastern markets.

There has been serious effort to educate the producer, especially the Japanese, to harvest his fruit only when fully ripe. Mr. Weishaar's trip with the fruit has developed the fact that the "full slip" or, in other words, the fully ripened melon, rich in sugar and in food quality, ships just as well as the green "cukey" flavored half-slips. Even "dead ripes" carried to market under refrigeration perfectly, holding up two days after being taken from the ice.

If California can secure a reputation for shipping fully ripened cantaloupes, more money and quicker sales will result.

WATCH RUSSIA

Speaking before the board of directors of the executive committee of the American Farm Bureau Federation recently, Dean Hunt of California said:

"The world, the human race, is more dependent upon economic rehabilitation and direction of Russian agriculture than upon any other single material factor in the world. One hundred fifty million people are involved. I do not mean that the American farmer is going necessarily to suffer when Russia comes back, but the direction which our agriculture will take will be affected by the time and the way in which Russia comes back. The farmer who does not adjust himself to this new order is the one who is going to lose out. Watch Russia and study her.

"After most great wars there has been an upset of agricultural ownership in the countries affected. Landlordism in England arose after previous great wars, primarily because the little farmer did not have sufficient credit to carry on his work economically. The greatest single need of the American farmer today is adequate credit. For the good of the whole nation he should have improved credit facilities."

GREAT FIGHT

Congressman Osborne has wired the Los Angeles chamber of commerce in effect that the ways and means committee on Tuesday morning reported out amendments to the permanent tariff bill which are of vital interest to California producers. These amendments call for increases in the tariff schedule as follows: Shelled walnuts, from 5 to 7½ cents per pound; shelled almonds, from 8 to 12; beans, from 1¼ to 1¾; citric acid, from 10 to 12; citrate of lime, from 2½ to 7. Congressman Osborne adds: "Considering conservative inclination of committee, this is very considerable concession."

The daily press also refers to long staple cotton (1⅜ or longer) being recommended for a 15 per cent ad valorem duty in original bill on free list. Congressman Curry reports that the committee has granted him and his constituents a duty of one dollar per pound on Turkish tobacco. Of course, cotton manufacturers will do their utmost to have all cotton admitted duty free.

Eggs are still on the free list, and presumably there will be a big fight in this particular because American poultrymen have stood for Oriental eggs as long as they can. The great consuming public sticks to the point that America exports about the same number of eggs as she imports, but the Pacific Coast reminds the Eastern consumer that he has no idea of the vast number of eggs imported in dried or frozen form besides shiploads of fresh eggs from the Orient. We are promised several months of lobbying, oratory and several other things before the permanent tariff bill becomes a law.

CONSOLIDATING COMMISSIONS

Under the reorganization plan carried through the recent legislature and endorsed by the governor it appears that the work of something like 80 commissions or agencies will be brought together and performed by seven departments, according to the program just completed by the state board of control. The new plan of work will become effective July 30 when all the old state agencies will be dissolved and the new departments, chief of which will be the department of finance, will be in entire control. The department of finance will in a measure be the governing body and will comprise six divisions, including claims and disbursements, budgets and accounts, purchases and custody, motor vehicles, printing and libraries. The director of this department will receive salary of $10,000. Other departments are: Civil service, director's salary, $4,000; institutions, controlling homes for blind, asylums, etc. Then there are three departments under the general head of industrial relations: Industrial relations, with four divisions, including workmen's compensation, immigration and housing, industrial welfare, labor, etc.; department of public works, including a director and three members of the highway commission, whose work shall have to do with highways, engineering, water rights, land settlement and architecture, director to receive salary of $10,000; department of agriculture covering five divisions of plant industry, agricultural chemistry, animal industry, markets, weights and measures, director $5,000 per year. Then there is the department of education, with director and state board of education having charge of normal and special schools, textbooks and certification of trust funds, the director also having powers formerly held by trustees of all normal schools, state polytechnic school and school for deaf and blind.

STATE DAIRY COW COMPETITION WINNER

Word comes from Prof. Woll that the highest producing five grade cows in the state dairy competition in the month of June were owned by Nate Hauck of Alton, winning the Cultivator monthly $25 cash prize. The highest producing cow of the five is credited with 91.76 pounds fat. The average for the five during the month was 74.95. Particulars next week. This is the third month's consecutive winning by dairymen in Humboldt County.

California Cultivator

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Liquid Gas, Cyanofumer or Pots-Which Shall it Be?

By R. S. Woglum

LAST year there was considerable agitation at the beginning of the fumigation season over changing back from liquid gas to cyanofumer or pots. However, when the season got under way it was found that the Growers Fumigation and Supply Company of Pomona was the only large concern that was not using liquid gas exclusively, and this company used both cyanofumer and liquid gas throughout the season, starting each night with the liquid gas method but changing over to cyanofumer as the temperature fell below 60 degrees or thereabouts. A few other fumigators used the cyanofumers during the winter.

The present year there has been an unmistakable movement over a considerable area to change back from the liquid to the pot or cyanofumer method. This movement centers probably in the Covina-Pomona Valley. Other districts are less affected. Present indications, as based on information furnished by such well known fumigators as Wyman, Stowell, Lane, Platt, La Follette and others operating about 50 outfits, are that fully 50 per cent of the growers in that district are demanding pots or cyanofumers this season. The fact that this contemplated change centers in the district which has long been foremost in magnitude of operations causes not a few growers in all parts of California to question the desirability of continuing with the liquid gas method of fumigating.

But why this demand for a change? The compelling reasons which lead intelligent growers back to former methods are plainly apparent if you would picture yourself a grower in that valley who fumigated two years ago with poor results, and again last year without commercial control of the scale, and possibly have neighbors who fumigated not once, but twice, last year and still have too much scale left for the good of the trees. When these same growers look back ten years and recall effective scale control by pot fumigation, sometimes necessary only every other year, and realize that their recent failures have been most conspicuous since liquid gas has been widely used, it is entirely reasonable for them to question the value of this recent innovation as compared to former methods. The successful grower builds upon facts and facts only and the scale on his trees and continued smutty or scaly fruit are to him concrete evidence of failing fumigation.

It seems to me that the time is ripe to lay all the cards bearing on this uncertain problem on the table, look them straight in the face and then try to see where the joker falls.

General Opinion Regarding Liquid Gas

The general opinion of men actually directing fumigation and of those investigating the results in districts where scale control is extensively practiced appears to be about as follows:

Tulare County—Citricola scale only—results quite satisfactory where work done during the proper season, i. e., before September. Will continue to use liquid.

Ventura County — Results at least equal to those formerly had with cyanofumer and pots. Will continue to use liquid gas.

(Continued on Page 78.)

Observing Cantaloupes in Transit

THE state department of agriculture has made investigations in order to clear up some misinformation regarding behavior of fruits under refrigeration, and especially during shipment from Imperial Valley to Eastern markets. In order to secure daily information Mr. Hecke assigned Mr. Weishar, supervising inspector of shipping point inspection, also collaborator of the federal bureau of markets, and Mr. Weishaar accompanied the car from shipping point to consuming point. The story of his experience is interesting. From it we quote:

By L. J. Weishaar, State Inspection Service.

We left Brawley about eight o'clock in the evening of Thursday, June 16, and arrived in New York on Sunday, June 26. An excellent schedule is maintained as far as Chicago. Switching there and subsequent delays consumed practically four days to New York.

While interested in observing temperature readings in transit and the amount of ice consumed in the refrigerator cars used in this test, my attention was given also to other points on which I decided to get thorough first hand information.

Season after season there has been considerable agitation regarding the shipping of immature cantaloupes. In receiving markets we recognize two disastrous stages—too green and too ripe cantaloupes. The prevailing fear at shipping point seems to be that cantaloupes will arrive overripe. We hear very little at shipping point, but a great deal at destination, about immature cantaloupes.

Before beginning the test trip I spent three days visiting fields in the Imperial Valley in order to obtain a good idea of the quality and condition of the crop in various fields. Stopping at the packing sheds and cutting many cantaloupes which were ready for packing revealed the fact that most stock showed scarcely a tinge of yellow or salmon in the meat and not the slightest turn in the color of the seed. The flavor of such stock was 100 per cent "cukey." Showing these specimens to the Japanese and warning against packing of such immature cantaloupes invariably elicited a reply something like this: "If five or six days on road, melon ripe." This theory seems to flourish wherever cantaloupes are grown. It needs to be exploded.

In the test shipment we selected melons in varying stages of maturity, "half slips," practically immature stock; "full slips," mature, hard, well netted cantaloupes, lastly "dead ripe" choice yellow appearing stock. All these were placed in the car center to ascertain just what advance in maturity would take place under refrigeration on the ten day trip. The outcome of this test may surprise many. Not the least advance in maturity was noticeable at destination in any of the three grades of cantaloupes. "Half slips" cut whitish or occasionally a pale yellow but remained distinctly "cukey" in flavor. After several days most of this stock acquired a thin layer of pale yellow meat, became slightly soft, yellowish on the outside, but never developed sweetness or good flavor. The "full slip," well netted cantaloupes were taken from the refrigerator car, kept in a room temperature for two days, then placed on ice, and were in ideal condition, with excellent flavor, on the third day. A rich yellow meat extended practically to the rind. The "dead ripe" cantaloupes were taken from the car and remained in good edible condition during the next 48 hours, but began to break down rapidly after that and became soft and mushy. The "full slip" well netted hard melon gave by far the best account of itself, was of excellent quality and in ideal condition for reshipment at New York and would most certainly have given the consumer a good idea of the true flavor of a California cantaloupe.

"Wrapped" cantaloupes verus "not wrapped"—another point on which much discussion has been spent. Investigations by the U. S. department of agriculture have definitely established the advantage of not wrapping cantaloupes. The present test serves to confirm these. Wrapping does little or nothing to prevent sunburn (opinions to the contrary notwithstanding), but on the other hand, wrapping tends to preserve the field heat in cantaloupes, impedes refrigeration, prevents normal evaporation of moisture, thus affording every chance for fungus and bacterial infection, softening, and decay. A sticker or similar device for advertising the brand would be less expensive and equally attractive and would materially reduce decay and mold now caused by wrapping.

No one advocated indiscriminate opening of refrigerator cars en route and there is much conjecture as to the effect of such action. In a car left open half an hour with an outside temperature over 100 degrees, an extreme variation of 20 degrees took place in the air temperature of the car near the ceiling, but a variation in the fruit temperature of less than two degrees in the top of the load. No variation in the air or fruit temperature occurred in the bottom layer or at bunkers. One hour after the car was again sealed, the air temperature in the car was within three or four degrees of normal and all fruit temperatures practically back to normal. Cantaloupes thus exposed showed no change in condition at destination from those in unopened cars and sold at equally good prices.

All of the above facts are based on an experiment with cantaloupes shipped out of the Imperial Valley about the middle of the present (1921) shipping season. Different seasons bring with them varying climatic conditions and new problems. As indicated before, there remains a vast field to be covered by practical investigations in the transportation of fruits and vegetables. Sincere, unprejudiced, thorough endeavors will benefit the industry and ultimately create a wider demand than exists even now for California products.

One of the most prominent cantaloupe distributors in the East believes that acreages of cantaloupes in California would positively shrink because, he explains, the demand is slowly but surely slackening because of the shipment of immature cantaloupes. McCutcheon, the well known cartoonist of the Chicago Tribune, just recently voiced the sentiment of the consumers in that city by presenting to the several million readers of that publication a forcible caricature, showing the poor quality of California cantaloupes. Advertising such as this does not stimulate demand or consumption.

Not a whit more encouraging is the attitude expressed by another dealer whom I had occasion to interview. He leases an acreage in Imperial Valley and ranks among the largest distributors. He released his sentiments in this manner: "We invest our money in certain lands in California and naturally look for a return of our investment with a profit. We resent having any state or other official tell us when or how we may ship what we produce. We realize that green cantaloupes, though not as palatable to the consumer as ripe ones, carry better to long distance markets, can be turned into money by the salesman, and that is what we are after. The ultimate result—when the deal becomes unprofitable, we will discontinue our acreage and operate somewhere else."

Do you believe that this dealer is doing justice to himself and to California interests?

Agricultural News Notes of the Pacific Coast

Northern California

Chico reports a bumper crop of figs.

A $30,000 grain fire is reported from Colusa last week.

The new standard apple act becomes effective August 3.

Eldorado County reports little damage done by the high winds.

The Grass Valley, Nevada County, auto park is now open to travelers.

The highway from Grass Valley to Auburn is closed by construction work.

Alturas, Modoc County, reports plenty of help available in harvest fields.

A concrete highway is to be built west of Walnut Creek, Contra Costa County.

Producers of dried apples are signing up their crop with the Sebastopol Apple Growers Union.

Work has begun on the $150,000 addition to the Mendocino state hospital building at Talmadge.

State Sanitary Inspector Ross is making inspection of auto park facilities in all sections of the state.

The "Valley of the Moon" chamber of commerce has staged a three day carnival at Sonoma the latter part of July.

Large sales of barley are reported from Colusa at $.95-$1.03 per hundred against last year's price of something over $3.

Horticultural Commissioner Turner of Placer County reports planting of over 34,000 plum trees and nearly 30,000 pears.

The Larkin farm center has decided to purchase a moving picture machine; also to exhibit at the Glenn County fair this fall.

Chief Deputy Quarantine Officer Strong has inspectors on the Nevada line on the lookout for alfalfa weevil in camping equipment.

The California Pear Growers Association announces sales of pears at Sacramento river points at $2.15 to $2.25; in Contra Costa County, $2 per packed box.

Prices to canners have been fixed by the California Growers Association: No. 1 Bartletts, $61.75; No. 2, $33.25. Last year's prices were $100 and $85.

Peach growers of Carmichael, Fairoaks, Haggin Grant and Elk Grove have formed a marketing pool to handle their 1921 crop in dealing with the canneries.

California's pear crop this year is estimated by the California Pear Growers Association at 76,000 tons, as against 94,000 tons last year and a normal crop of 130,000.

The board of supervisors of Nevada County has denied the petition of withdrawal by owners of at least ten per cent of the land included within the Grass Valley irrigation district.

Recent election by California Prune and Apricot Growers Association shows choosing of the following directors: C. C. Spaulding, Hugh S. Hersman, Robert Britton, J. S. Williams, Warren E. Hyde, J. A. Chargin, C. C. Lester, J. R. Welch, J. C. Shinn, G. W. Glendenning, Paul Marston, R. P. Van Orden, I. O. Rhodes, Leroy Anderson, I. E. Pomeroy, M. J. Madison,

Central California

The 1920 census shows that Inyo County has 521 farms valued at nearly $12,000,000.

The farm bureau picnic at Alisal Park, Monterey County, brought out an attendance of 2,500.

Game Warden Post reports both old and new roads from Soledad to the Pinnacles in excellent condition.

The first solid car shipment of fresh figs from California netted the growers $400 a ton. It was of Black Missions.

One of the newest cooperative organizations is the Lindsay-Strathmore Pomegranate Association, with 45 members.

A new cooperative citrus association has been organized at Strathmore. A modern packing house will be erected.

Harry Stadler has been put in charge of the squirrel poisoning campaign in the El Nido district of Merced County.

Dust explosion in a combined harvester on Deer Creek resulted in completely destroying the harvester and burning an acre of grain.

Funds are now available for purchase of the experiment vineyards at Fresno and Oakdale formerly leased by the federal government.

J. W. Nelson, assistant state leader of farm advisers, has been in Merced County addressing local centers on soil handling, irrigation problems, etc.

The state highway commission has let bids for construction of the 19 mile strip over the Pacheco Pass from Los Banos to the Madera County line.

A bill has been introduced by Congressman Barbour to extend Sequoia national park from Mt. Goddard on the north to Kern Canyon on the south.

Pink rot fungus of onions is reported from fields in the San Joaquin delta. A rather severe attack is indicated by statements received from growers.

The 1920 census shows the value of farming lands and buildings in Monterey County to be $53,131,338, an increase of 76.7 per cent over the 1910 valuations.

All of the private holdings within the Sequoia national park have been pruchased and given to the national government for the enjoyment of the American people.

Home Demonstration Agent Evelyn Conklin is talking and demonstrating different methods of home preservation of foods in the farm home department meetings in Kings County.

The controversy of several years standing between the Southern Sierra Power Company and water users of Bishop Creek, Inyo County, has been settled by decision of arbitrator chosen by the contending parties. The water users feel that their rights are now secure.

Special buildings for automotive and home manufactured product exhibits will feature this year's Fresno district fair, September 26 to October 1. A huge tent, 540 by 100 feet, will house the tractor machinery, and another big canvas will cover the pumping and irrigation exhibits.

Southern California

Farmers of Talbert, Orange County, report many thefts of cattle, especially calves.

Mrs. Malinda Woodworth is now home demonstration agent in Riverside County.

Black scale parasites are being distributed to Venturans who have citrus trees in their yards.

A new pump and engine is being installed at the community well at Wintersburg, Orange County.

The Orange County supervisors have awarded contract for construction of bridge over the Santa Ana near Olive.

The San Dimas Lemon Association shipped last month 100 carloads, the estimated season's shipment being 850.

Lima bean growers have been given reduction in railroad freight rates as a result of their use of water transportation.

Saidy date offshoots will be distributed to growers in the Coachella Valley under contract with the federal government.

Fruit packers at Orange, went on strike because the scale for packing oranges was reduced from 6 to 5½ cents per box.

The Riverside County road between Banning and Indio is being repaired and is now in fair condition north of Palm Springs.

A bill has been introduced in congress to make 1,600 acres in the vicinity of Palm Canyon, Riverside County, a national monument.

The Yucaipa Valley Fruit Company has begun construction of packing house that will double its capacity for handling the coming apple crop.

Improvements on the warehouse of the Carpinteria Walnut Growers Association have been finished. New culling apparatus has been installed.

Farm Adviser Nebelung of Riverside County has resigned to take up work in citriculture with the government of the Union of South Africa at Pretoria.

The Elsinore Valley Water Users Association has decided to fight the water development plans of the Lake Hemet Water Company in the San Jacinto mountains.

The ways and means committee has agreed to offer to the House an amendment providing tariff of 15 per cent on cotton. On 50 cents a pound cotton this will mean a duty of 7½ cents.

Imperial County farm bureau has organized a marketing exchange to operate on a commission basis. It will first take up marketing of veal calves which are bringing practically nothing from the butchers.

The Orange County farm bureau has been seriously considering the farm labor situation. Hundreds of Mexicans are said to be leaving for the vineyards of San Joaquin Valley, and many are returning to old Mexico.

The Festival of Dates to be held at Indio, October 21-23 will show exhibits from foreign countries. The United States department of agriculture will assist in securing a representative collection of dates and date products.

The Coast and General

Losses of livestock in the southern part of Arizona have been reported, due to the prolonged drouth and high temperatures.

Ten thousand feet of timber was destroyed by fire in the area between the Copper Basin and the Thumb Butte in the Prescott national forest in Arizona.

A big sales promotion campaign has been launched by the Association of Hawaiian Pineapple Packers to promote use of crushed and grated pineapple.

The annual picnic of the Lewis County, Washington, Pure Breeders Club will be held at the Southwest fair grounds July 27 at the time of the dedication of the new stock barns.

Under the auspices of the state farm bureaus of Washington, Oregon, Idaho, Montana, California and Utah, a three day conference was held in Portland to work out various fruit growing problems.

Strawberry growers of western Washington are hard hit by refusal of canneries to accept strawberries. It is reported that growers in the Olalla Valley have been forced to leave as many as 30,000 crates unpicked.

The Florence diversion dam in the Gila River of Arizona will provide irrigation water during the coming year for 62,000 acres in the Florence-Casa Grande Valley. It is estimated that the dam will cost between $750,000 and $1,000,000.

The farm bureau of Gilbert, Arizona, held a basket picnic June 25. After the picnic a cow judging contest was held. The farmers seem to be taking much interest in dairying and probably will form a cow testing association shortly.

Carlot shipments east of fruits and vegetables from territory west of Ogden, Salt Lake and El Paso and south of Ashland, Oregon, have broken records this season. During the past June 3,424 more cars moved in refrigerator cars of the Pacific Fruit Express than in June, 1920.

The first shipment of asbestos in several months was made recently from the Globe district of Arizona. There has been little demand for this product in the past few months and Arizona is said to produce more asbestos than any other state. The recent shipment was a very high grade.

The fourth annual convention of the Western Plant Quarantine Board, which was held this year at Victoria, British Columbia, will be held at Phoenix, Arizona, in May, 1922. Delegates are expected from British Columbia, California, Idaho, Oregon, Utah, New Mexico and Washington, Colorado, Montana and Nevada.

The Washington Wheat Growers Association at its recent meeting in Spokane elected the following directors: N. F. Sturgess, Rockford; W. W. Arlt, Marcellus; R. M. Jones, Dayton; H. E. Goldsworthy, Rosalia; R. V. Peringer, Belmont; T. S. Hedges, Waterville, and C. N. Campbell, Bridgport, tied; J. H. Smith, Ephrata; J. C. Kaidera, Centerville; Oscar Collins, Pullman; H. Jurgenson, Wilbur; W. H. Kirkman, Walla Walla; N. B. Atkinson, Waitsburg, and James Oliver, Pomeroy.

Home Canning of Fruits

By W. V. Cruess

NO pantry is complete without a generous winter's supply of home canned fruits. Particularly is this true for California. Fruits and sugar this season are selling for very low prices and it is therefore a home canning year.

Use Good Fruit

If you own your trees or have access to an orchard by all means select the fruit yourself and can it the same day that it is picked. Fresh ripe fruit is the prime requisite in canning as well as in the preparation of all other fruit products.

Lye Peeling Peaches

It is usually not necessary to lye peel peaches for home canning, because the small quantity does not warrant, but where several boxes are to be put up this method is economical.

Use an agateware or iron pot; never tin or aluminum. To one gallon of water add one-half pound of lye. Heat to boiling and immerse the peaches in the lye until the skin will slip easily, 20-30 seconds usually. A wire basket or a lard bucket punched with holes will serve for holding the fruit. Rinse in an abundance of cold water and rub off the skins. Halve and pit the peeled fruit and store in water until canned to avoid darkening.

Preparing Other Fruits

Berries need only be washed and sorted; apricots washed and cut in half. Pears are hand peeled, halved and cored. Special coring knives may now be had from hardware stores. French prunes are excellent when canned fresh and require no preparation except washing.

Precooking

Most fruits, peaches and pears excepted, shrink badly and give a partially filled jar or can if packed fresh into the container and sterilized. These fruits should be given a short cook before going into the can. The syrup in excess of that needed to fill the jar can be bottled and used later for cooking or on the table.

The fruit is placed in a kettle with the required amount of sugar. To berries no water is added. To plums, apricots and other pulpy fruits enough water is added to form a syrup with sugar sufficient to cover the fruit after boiling. Boiling must be brief, usually not more than two to three minutes; long enough to soften the fruit and not long enough to break it into pieces. Berries and sour fruits require an equal weight of sugar while less tart fruits are given one-fourth to one-half their weight of sugar.

Figs are better preserved than canned. See our article on preserving in a recent issue of the Cultivator.

Jars or Cans?

For home canning the writer prefers the glass top jar with wire clamp such as the "E-Z Seal," etc. These jars last a lifetime. Caps do not have to be renewed. The jars are convenient for sterilization on account of the clamp top feature.

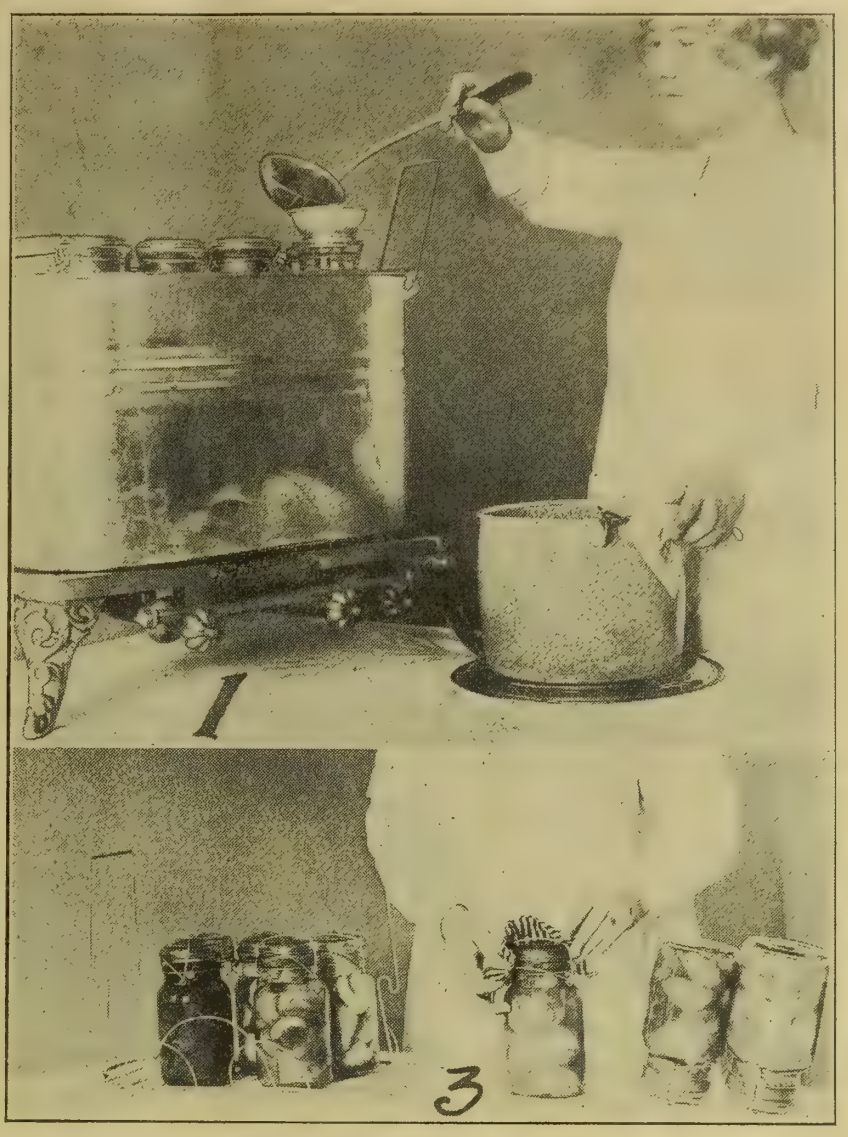

Fig. 1 and 3—Canning by Pictures

Upper photo illustrates a convenient type of wash boiler sterilizer and jar rack and the filling of the jars with the heated fruit preparatory to sterilization. Lower shows method of sealing and cooling glass top jars after sterilization. (All of these illustrations are from Home and Farm Food Preservation by W. V. Cruess. Macmillian Company, publishers.)

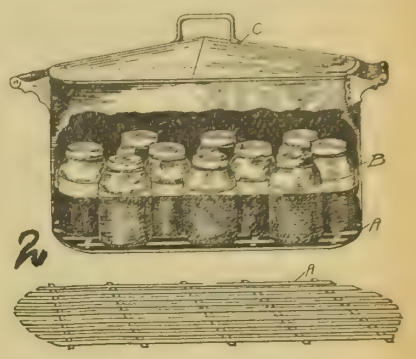

Fig. 2—Using the Old Wash Boiler

This is a sketch showing a home made jar rack in place in a wash boiler sterilizer and indicates also the depth of the water in the boiler.

Use only the best rubbers. The Good Luck and Cold Pack brands can both be highly recommended. Poor rubbers will spoil the flavor of your fruit.

If a large quantity of fruit is to be put up cans are very convenient. Small home size can sealers are now available. Several families can afford to club together and purchase one of these outfits where the expense is too great for one. We have one in our laboratory which cost us about $15. It has proven satisfactory. The style of can used is the "open top" or Sanitary can. No solder is used in sealing it.

Filling

Peaches, pears, firm apricots and cherries are packed into the jar or can cold. Boiling hot syrup is added to fill the container. This syrup consists of one cup sugar to three cups water unless the fruit is very sour. Cherries are apt to shrivel in very heavy syrups.

(Continued on Page 84.)

Paint Preserves and Beautifies

PERHAPS the first thing to say as to the advantage of slicking up and painting the farm buildings is that it saves money. But that is a side of the question we will not touch at this time, but only the greater comfort and pride which one may have in the home as sufficient justification for spending a bit of money on paints and varnishes; also on painters and varnishers, if one so prefers, but there are a lot of us in this world that cannot employ others to do our work as much as we would wish so are compelled to hunt up the old paint brushes, some of them hardened with left-in paint, and soak them up in the prepared solutions which are promised to make them pliable and workable again, then get busy and do our own painting. We would, however, suggest where possible employment of one qualified to do a thoroughly good job.

But, admitting our willingness to endure grimy hands, get into disagreeable work and suffer from a bit of ache in the back and neck, we may add a lot of comfort to our homes. And we mean comfort, for there is genuine restfulness and joy in the well painted and tastefully arranged home. And we don't know that there is need for personal discomfort or ill appearance because of the dirty job. Old canvas, or even cast-off garments, may be used to cover floor or furniture, and coveralls or old duds to prevent soiling of everyday clothing. Gasoline, turpentine or a smear of lard will usually clean hands and face.

Almost since painting began oil and lead have been considered the best foundation. Of course, there are tints and colorings of all kinds to be added, and varnishes, enamels and other coatings necessary for certain conditions, but the best part of it all for us who are novices is the fact that every paint and most general stores have a full line of all tints and colors and varnishes all ready to drop the brush in and apply. And the handlers of these paints as a rule have a fairly good knowledge as to their application and can give more immediate and timely advice than is possible in a general article.

But a few hints, some of which have come in answer to questions sent to the offices of some of the larger paint and varnish manufacturers of the country.

The first step is to prepare the surface on which the paint is to be applied. If it has been covered for many years by many coats it has perhaps begun to flake or peel off. On this point "Painting, Protective and Decorative" by the National Lead Company says:

"The life of a paint that scales in patches must be deemed as terminating when first scales begin to drop off, not by the length of time some of it will cling; for repainting must be done at once if the wood is to be saved. Not only so, but a cracking, scaling paint entails trouble and expense when repainting is necessary. The painter finds some of the paint clinging like glue, while in other spots the wood is bare. He must smoothe the whole surface by scraping or burning, which is dangerous and expensive. An old surface painted with white lead is ready for new paint as soon as the accumulated dust is brushed off."

If, however, it is a varnished surface, and the natural wood is to be preserved, neither the scraping, and certainly not the burning, may be permitted. It then becomes a case for "paint removers" or turpentine or sandpaper. If the surface is weather stained, and a lighter, more natural shade of the wood is desired, a hint is given as to the oxalic acid treatment in the letters given below:

For floors, only floor paint should be used; for porches and steps, outside floor paint; while "inside" or quicker drying paint may be used for all interiors. Many folks regard paint as simply paint, without taking into consideration the fact that one may be perfectly adapted for outside work and entirely unsatisfactory inside. Never use turpentine for outside work.

But these are only hints. More and better information is given in the letters which follow, which are in answer to numerous queries which have come to this office from Cultivator subscribers:

The Questions

1. "I want covering for my back porch floor where the men's rough

(Continued on Page 90.)

Announcing an Expert Field Service for Southern California Groves

Field-tested methods for controlling citricola scale are now offered to you by Balfour, Guthrie & Co. A clean-up campaign throughout the fruit-producing districts of Southern California will be conducted from the Company's headquarters in the H. W. Hellman Building, Los Angeles. Have your grove examined free of charge by Frank B. Herbert, assistant entomologist, and his aides. They will advise all growers desiring information about

Spray Control of Citricola Scale, Black Scale, Red Spiders

Prepare at once for your bigger profits this year. Apply to YOUR problems the results of actual field work and scientific research secured by Balfour, Guthrie experts under Chief Entomologist Paul R. Jones. They have established the supremacy of Universal Orchard Spray for citricola scale control. It was used on 20,000 acres of groves in Tulare County last year—and Tulare won thereby the record of being the cleanest citrus county in California.

Your grove, too, will look best and produce the most fruit through continuous use of Universal Orchard Spray. Mr. Herbert will work shoulder-to-shoulder with you. He will center his attention on YOUR spraying problem—no other business as a side-line. Strengthen your trees, encourage healthy foliage and so assure your bigger harvest. Attain these results by employing the time-tested methods of a long-established California business institution. Remember! Balfour, Guthrie experts are back of you in this campaign.

Send today for your free copy of new citrus bulletin prepared by our expert entomologist, Paul R. Jones

Balfour, Guthrie & Company

Los Angeles
H. W. Hellman Bldg.

San Francisco
Balfour Building

UNIVERSAL BRAND
ORCHARD SPRAY

THE FRESNO NURSERY CO. INC.
TRADE MARK
RELIABILITY QUALITY SERVICE
FROM THE ROOTS UP

Headquarters for

FRUIT TREES

Our trees are grown under most favorable conditions in the choicest spots in California.

Let us know your requirements early.

Fresno Nursery Co.

Fresno, California

High Grade Nursery Stock

We guarantee you well-grown, free from disease, deciduous nursery stock on a remarkably large uninjured root system.

Send for our stock and price list. We have a few territories for reliable and experienced nursery salesmen.

James Mills Orchards Corporation
Hamilton, Glenn Co., Cal.

Extra parts are always available without delay for standard advertised machinery. This class always found in the California Cultivator.

LIQUID GAS, CYANOFUMER OR POTS—WHICH SHALL IT BE?

(Continued from Page 75.)

Orange County—Results quite satisfactory against purple and black scales or equal to former work with cyanofumer and pots. Red scale becoming more difficult to kill. Will continue to use liquid gas.

Riverside County—Satisfactory work against the black, also the Citricola in early season. Some late Citriola work poor. Red scale toward Corona difficult to control. Will continue with liquid gas.

San Bernardino County—Eastern: Early Citricola work good. Late work less satisfactory. Western: Work spotted and considerable unsatisfactory against both black and Citricola. Demand by some growers for pots or cyanofumers.

Los Angeles County—Already presented by Commissioner Ryan. In a broad strip of territory extending from Azusa to Covina, and Covina through Charter Oak to Claremont, results against black scale generally unsatisfactory. Strong demand for pots and cyanofumers.

The results of all counties when condensed show the general results of the past season to be about on par with former results; on the other hand there have been certain conspicuous failures. These are that late fumigation for the Citricola scale is decidedly less satisfactory than early fumigation. The red scale in certain sections of Riverside County and in Orange County are becoming very difficult to control by fumigation. And the results against the black scale in certain of the eastern interior citrus sections of Los Angeles County are highly unsatisfactory in spite of high dosage used. Furthermore this area of unsuccessful black scale control appears to be extending both eastward and westward from the original center.

Pots vs. Liquid Gas

At a recent meeting of fumigators held at Glendora it was practically the unanimous opinion of those present that liquid gas produces scale kill about equivalent to cyanofumer results and better than pots. Professor Quayle's published results put the liquid on an equal footing with the former methods of cyanid gas generation.

My own experience with liquid gas agrees substantially with the majority opinion of fumigators and students of fumigation. When associated with the federal department of agriculture I conducted very extensive experiments, comparing the results of pot work and liquid gas under varying weather conditions, and surely no experiments could be more carefully performed or more accurately checked. Several months were spent by myself and assistants on inspection right in the field, and scale bugs were examined by the tens and hundreds of thousands. Every comparative test that we performed at warm temperatures with high grade material, accurately measured and carefully applied—where one row of trees was fumigated with pots and the next with liquid gas—showed more uniform scale kill and slightly better results with the liquid. Let me cite one example typical of these results: Nine full days were spent in this particular orchard by Mr. Rounds and myself inspecting the kill against the purple scale by fumigation at temperatures of 60 to 66 degrees Fahrenheit. The liquid gas showed all insects killed and 95 per cent of the scale with all eggs killed, whereas with the pots and the same schedule a few insects remained alive and only 75 per cent of the scale had all eggs killed; in short, only five per cent of scale treated with liquid had any eggs come through living, whereas 25 per cent of the scale treated with pots had some eggs escape.

It should be emphasized that these superior results with liquid gas were secured at warm temperatures. When work was done in damp, cold winter weather the results were less satisfactory with the liquid than with other methods.

Now you recall the good results secured years ago with pots. But it should be recalled that the very effective results with pots in those days were secured with potassium cyanide when the total expulsion of gas occurred in two or three minutes. With sodium cyanide, which we now use, and which is alone available, the gas generation in pots continues over a period of 10 to 20 minutes, and in the light of the gas diffusion studies recently made by Dr. M. J. Brown of the Pacific R. & H. Company and Mr. J. D. Neuls, that the rapid diffusion and concentration of gas during the first few minutes of exposure has a very important bearing on effective scale kill, there is presented a reason for not expecting as good results with sodium cyanide as with potassium cyanide in pots. And doubtless many of you recall the frequent complaint of poor results in the case of small trees when cyanegg was used in pot work. When machine generation was introduced it was heartily welcomed and considered a step in advance over the pot method with sodium cyanide.

When we review the outspoken experience of fumigators toward the pot method it is reasonable to feel that this method with sodium cyanide has had its funeral. It can be resurrected from the graveyard and will be in not a few cases, but after this season is over and further critical evidence accumulates, my own experience leads me to feel that the system is quite likely to then be definitely embalmed.

The Covina Valley

Now the problem of unsuccessful fumigation in the Covina-Pomona Valley can scarcely be attributable entirely to liquid gas. There have been failures, to be sure, and not a few either, due to some fault of the liquid system, or to careless operation, but the chief cause for poor results appears to be an increased resistance to fumigation which the black scale is developing or has developed. Mr. Wyman used both the cyanofumer and liquid gas throughout the season and in checking up the results of the two methods in some of this so-called resistant scale territory one is unable to detect any particular superiority of one method over the other, especially so during the warm season. In orchards in which the scale is considered resistant the results were frequently noted as poor with both methods. Furthermore, one large orchard in this district fumigated with pots and very high dosage, gave results far below commercial requirements. Additional evidence has been supplied by Mr. Borden of the federal department of agriculture, who followed work done in several orchards last autumn with cyanofumer and liquid, and his determinations showed unsatisfactory results in every case with both methods, even where 100 and 110 per cent dosages were used. It is well known that for control of the red scale at Corona fumigators speak in terms of 110, 125 and even higher per cent schedules, yet Professor Quayle has stated that the resistant black scale at Charter Oak is even more resistant to cyanide gas than the red scale at Corona. Therefore, it would appear that the unsuccessful results against the black scale in western Los Angeles County are due more to the type of insect being developed there than to the system of fumigation followed. As a possible ray of encouragement to growers in that district let it be stated that for them fumigation is by no means at the end of the rope, for experience to date with the outfit of gas tight tents being operated by the field department of the California Fruit Growers Exchange in the resistant red scale district of Riverside County is encouraging, as will be shown by the report of Professor Quayle.

The Cyanofumer

The cyanofumer must be considered a step forward over pots with sodium cyanide, for the gas generation is almost instantaneous. It is by no means a perfect machine but after due allowance is made for its principal weaknesses, which are reported to be considerable, gas absorption by the acid water mixture in the lower drum when it cools too much, and occasional improper functioning of the spring valve which would short the dosage, the general results which followed the period of its widespread adoption appeared to be quite satisfactory. Evidence appears to show that fumigators who decide voluntarily, or are com-

pelled by grower demand to return to former methods of generation, are likely to pass a more successful season and better please their growers with the cyanofumer than with pots. Furthermore, if fumigation concerns are compelled by grower demand to use liquid, cyanofumer and pots, all three, not only will the overhead be excessive, but so much confusion is likely to arise and improper schedules be followed and slipshod methods creep in as to result in decreased efficiency and inferior results. In fact, it cannot but be admitted that the managers and directors of fumigation companies are justified in refusing to use more than two methods.

Disadvantages of Liquid Gas

Although the majority of those who closely observe the results of fumigation appear to be agreed that liquid gas is equal, if not superior, to cyanofumer or pots during warm weather, it must be frankly admitted that the application of this material has been far from the perfection desirable. The material has been of uniformly high grade, but the loss occasioned in its measuring in the orchard and in its change to gas beneath the tree not infrequently has seriously impaired the results against the scale. Applicators in the field last year were far from satisfactory and gross errors were by no means infrequent. In fact, it was apparent to me early in the season that the faultiness of applicators was a matter of serious concern that demanded continuous and close attention to maintain high quality work, but such attention was too often not supplied. Both concerns that furnish liquid gas this year assure improvement in applicators over those of last season, one by improving the fittings and connections of the pump used last year, the other by introducing an entirely new applicator. Our observations of the different applicators now used with the Exchange gas tight tents outfit are that they will all be reasonably accurate. There is a model applicator used by one fumigator, but unfortunately not put out on the market, which has features seemingly superior to the types now available.

Next to accuracy of applicators comes the atomization of the liquid beneath the tent. Where this hits the leaves of the trees, cover crop, or other obstacle, a certain amount is condensed into liquid or ice. At warm temperatures the loss is usually insufficient to seriously impair results, but at cold temperatures the loss not infrequently has been observed to materially reduce the efficiency of the dosage. This has appeared to me, from the first use of liquid gas, to be its greatest drawback. The careful use of liquid with accurate applicator during the warm months of the year appears to give quite satisfactory results. However, where fumigation is done during the cold winter months the direct introduction of gas as by cyanofumer or vaporized liquid cannot fail to prove superior in the long run to the atomization process.

With liquid gas as now applied the gas concentration and scale kill is greatest at the tree bottom. With some scales, as purple, this is a decided advantage, but with the other scales uniformity of distribution would be more desirable.

The system which will ultimately be demanded by the grower and fumigator alike is one which most accurately and uniformly puts the required dosage of cyanide gas beneath the tent. This can be most closely approximated by accurately measured liquid hydrocyanic entirely changed to gas before entering the tent. Such a system would dispose of the major disadvantage now checked up against the liquid and also include its present advantage over the pots and cyanofumer. A step in this direction has been made by one of the liquid gas manufacturing concerns in the form of a light weight vaporizing machine. This machine is now being tested in the field but definite conclusions as to results against scale, practicability of operation and durability, will be gained only with more extended experience.

Resume

None of the fumigation methods is perfect, but of the three now available, liquid, cyanofumer and pots, when all things are considered liquid gas stands first, and pots with sodium cyanide last. However, during cold, damp weather liquid gas is not uniformly satisfactory when sprayed beneath the tent. Under such conditions superior results should follow changing the liquid to gas before entering the tent. If this is not done many fumigators believe the cyanofumer would be more effective during such weather. The partial return in some districts from liquid gas to cyanofumer or pots is certain to have a stimulating influence on the concerns manufacturing this liquid product, to perfect apparatus for accurate and complete conversion of their product to gas under all atmospheric conditions. Liquid gas applicators appear superior to those of last year.

BUY PLANTS AT HOME

By Charles H. Vary

FOR a number of years the press throughout California has been publishing articles relative to the good work of the state horticultural quarantine service. It has called the attention of the public to the fact that the horticultural and agricultural interests are second to none in the state, and in view of this fact it has repeatedly emphasized the importance of keeping out new and dangerous insect pests and plant diseases which are liable to be introduced into the state by bringing in plants or other horticultural material from areas which are known to be infested or infected.

Notwithstanding, the quarantine officers of Los Angeles and other ports of entry in the state are constantly intercepting and condemning objectionable material which, if allowed to proceed to the consignee, might and probably would in very many cases be the nucleus of starting an infestation which would cause inestimable damage to our agricultural interests.

A large percentage of the objectionable material intercepted by the quarantine officers which arrives from other states is of little value from the monetary standpoint, and the same plants can usually be procured from a local florist or nurseryman without the danger of introducing new pests. Sentiment is responsible for many of the packages of nursery stock which find their way into California. Someone remembers how good the grapes used to taste from the old vine that grew on the stone wall back in the home garden when he was a boy, or someone never saw a rose in California that equaled the one that grew under Mother's bedroom window way down South, and another must have a root of some little shrub that is planted by the grave of a dear friend in some little country churchyard. And so they come, plants from every state in the Union, gathered from farms, gardens and woodlands, to say nothing of the immense volume of nursery stock brought in from nurserymen and florists.

Many of these plants are clean and free from insect pests or plant diseases while others are badly infested and must be refused entry. Each spring when the Cape jasmines are blooming in the South quantities of these cut flowers are sent to California, and with them we nearly always find on their foliage the larva of the Citrus White Fly, Dialeurodes citri, an insect which is a very serious pest of the citrus industry of the Southern states, and which, if it became established in the groves of California would place an additional burden on the growers.

Few people realize the danger when they ask that plants or flowers be sent them from other states, and too often they are prone to denounce the quarantine officers and the department of agriculture in general if their packages are found objectionable and confiscated by the quarantine officers.

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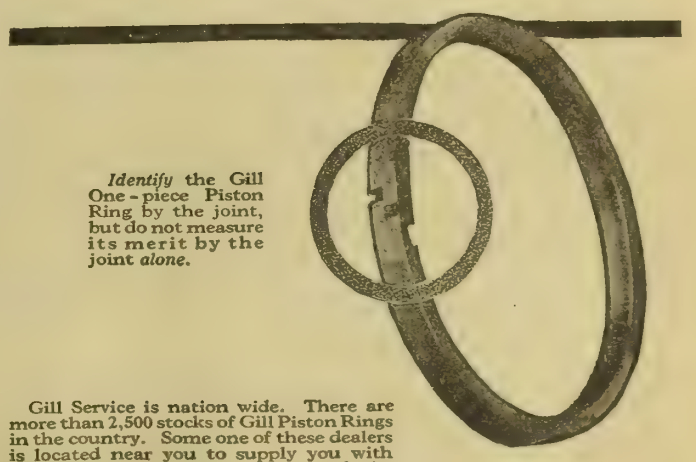

Identify the Gill One-piece Piston Ring by the joint, but do not measure its merit by the joint *alone*.

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Soil Moisture Investigations

By Ernest Braunton

THE agricultural extension service of Los Angeles County has had Prof. J. W. Nelson making a series of soil investigations and demonstrations in various parts of the county, eight in number. Aside from numerous soil borings made in each district, Prof. Nelson charms his hearers with his practical talks and leaves his audiences with a far better knowledge of their soil possessions than they previously had. It is no "half Nelson hold" that he gains from all who are fortunate enough to hear him whom Farm Adviser Hodgson introduces as "the man of all men who knows California soils." Here are a few of the points he makes:

"The one thing every farmer should know is in what soil environment his plants will do best. When that is determined see how near to this ideal you can come in your care and culture. Up in the big valleys we have age-old soils that lie in well defined layers. Down here, especially in foothill districts, we have the widest range of soils in their adaptation of any soils in the world; youthful soils. Plants, like animals, need balanced rations. Try and meet the required maximum conditions. Even though the water supply as a whole is short in the south end of the state, there is still a slight over-use of water.

"Nitrogen and soil moisture are the two chief factors in citrus culture. Chlorosis is indicative of plant indigestion. The irrigator's greatest friend is a soil auger; everybody should have one with a six foot shank or rod. If I were to start a young orchard I should bore and chart the entire tract, determine every gravel pocket or hardpan deposit, to a depth of six feet. Where a hard stratum exists bore down to within four inches of the bottom and give it a charge of 20 per cent dynamite. Then set out the trees. For the first three or four years I would plow deep and close to the trees. Never mind about cutting roots in the first years, while the trees are making only wood growth. It is at this stage we must encourage and develop a deep rooting system. Determine to have a deep root zone.

"In after years plow more lightly. The top foot or foot and a half is very sensitive to climatic conditions; get the feeding roots lower. So practice irrigation that you wet the entire orchard area and have that wetting uniform. If you leave a dry spot between the rows or close up to the tree the roots these cease to function and the tree is in distress, for the roots are always balanced to meet the needs of the top. If during summer you leave two or three feet of a dry zone about each tree but about 75 per cent of the roots are functioning. When the first heavy rain comes 100 per cent commence to function and this stimulus produces a fall growth, often blossoms, and other attendant ills. Then, as you have had a 75 per cent tree all summer, you now have 100 per cent of busy roots. All know the frequent disastrous results. Irrigate close up to the tree at all times and in times of stress or distress the close up roots can most quickly respond to the call for help.

"How am I to know what my trees need? Fully $1,000,000 worth of commercial fertilizers are annually wasted in this end of the state on orchards where the soils are in such condition that the trees cannot take up the plant food. Physical condition is at fault. The water content is 75 per cent of the game. The amount of organic matter in the soil is of next importance, as without a sufficiency the plant food is not soluble. One pound of organic matter in the soil increases its water holding capacity seven or eight pounds. Don't irrigate deeper than the roots; water don't come up. It obeys the law of gravity; once down it stays down. We used to think some of it would come up through capillary attraction. We know now it does not.

"Sixty per cent of the mottle leaf in citrus orchards is due to too much water; especially true where drainage is not good. Recent experiments in Tulare County have proven we may subsoil close to the tree, at any time of the year, to the depth of 18 or more inches, without harm to tree or crop. We are not advising you to do this but all our experiments have resulted in no harm and no signals of distress. But irrigate immediately after so cut roots may quickly resume normal functions. If you are doubtful, go down one side of a row, ripping down deep, then irrigate and watch for results. If no distress is shown, go down the other side. From now until the cold weather, after the crop is off, is the season when trees store food and vigor for next season's crop. See that they are well fed."

Aid to Motor Truck Owners

It will surprise many truck owners to know that there are many agencies where cooperation, records of previous enterprises and statistics on motor truck operation may be obtained to assist them in making more money with their motor trucks.

The department of agriculture at Washington, the National Automobile Chamber of Commerce, 366 Madison Avenue, New York City, the research departments of the big tire companies, and the traffic engineers of most of the larger truck concerns, all have information and data which will be of benefit to those motor truck owners who are interested in forming intercity lines for the haulage of more goods, both freight and express, and any rural motor express work.

In addition to the above available sources of information for the truck owner, there are the local chambers of commerce in almost every city of 25,000 or more in the United States, as well as the more recently formed local transportation associations in many of the larger cities. Bulletins of various kinds, booklets unnumbered, and cost figures without end, may be obtained from these sources, which will enable a man or firm to form motor truck lines which will be profitable and a source of great convenience to the shippers.

A recent bulletin issued by the National Automobile Chamber of Commerce is entitled "Motor Transport Cuts Time and Cost of Shipping in New England"; another, "Good Roads and Motor Transportation"; still another, "Motor Trucks Save 45 Hours Per Shipment for Bay State Manufacturers"; Bulletin 931 of the United States department of agriculture is entitled "Corn Belt Farmers' Experience With Motor Trucks." Ontario department of agriculture, Canada, has issued Bulletin 277, entitled "Motor Transportation in Rural Ontario." All of these booklets and many others may be obtained from the above sources, and will be most profitable to those who are interested in motor trucking.

Certainly one of the greatest jobs in food and factory production is transportation, and the world needs just as much food as it ever did, and much of that food to be marketed properly must be transported quickly. Motor trucks can do this job better than any other form of transportation. Business is coming back slowly but surely, and an increasing number of motor truck routes are a necessity if we must continue economy in haulage.

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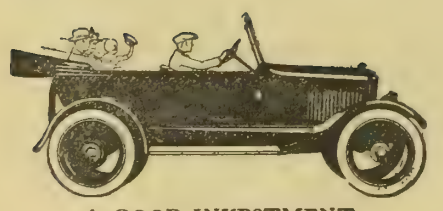

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ADVANCE IN BULK HANDLING OF GRAIN

As to the advancement made in bulk handling of grain and number of elevators under control of the farm bureau marketing association we have asked Secretary Heileman of the Farm Bureau Federation and he writes:

"The California Farm Bureau Elevator Corporation is building a plant at Patterson and another at Montpelier and is arranging for a third plant to be immediately constructed at San Lucas. The corporation has taken over the terminal elevator at Oakland under a five year lease with an option attached.

"The above covers the activity of the corporation, which has carried on its work for the season since March of this year. We expect, of course, to continue the construction work indefinitely, or so long as the farmers desire to adopt bulk grain methods.

"Several large concerns in the state are handling bulk grain for their own use and there are a few elevators scattered about over the state, though handling grain through elevators is not as yet an established practice in the state."

A GREAT PRODUCTION

The chamber of commerce of Los Angeles County, through its agricultural department in charge of Dr. Clements, has made an authentic compilation of 1920 crops in which we note:

"In a general estimate it may be figured that 1920 showed an increase of approximately five per cent in acreage under cultivaiton. By way of comparison attention may be called to the fact that although a large percentage of the population of the east thinks of California as the "golden state" and knows that it leads all states in production of gold from its mines, the total gold produced in the entire state is approximately only one-third of the value of the soil products of Los Angeles County alone. The actual value of California's gold last year was $17,398,200, but there is one crop in Los Angeles County that exceeds it. This is oranges, which totaled in value $18,965,800 last year."

Here are a few of the productions of that one county: Barley hay, 35,000 acres, 61,250 tons, $1,531,250. Beans, 30,000 acres, 360,000 bushels, $1,188,000. Potatoes, 13,000 acres, 1,430,000 bushels, $3,575,000. Alfalfa, 15,000 acres, 97,500 tons, $2,340,000. Sugar beets, 15,000 acres, 100,000 tons, $1,163,000. Total, with other general field crops not mentioned above, 155,300 acres, valued at $11,665,250. Truck crops, 31,050 acres of a total value of $10,061,096. Three of these crops came above the million dollar mark. They were tomatoes, strawberries and melons. The big wealth of the county, however, is piled up in the fruits and nuts. Of apricots there were 5,073 acres, 11,123 tons, of a value of $945,455. Peaches, 6,066 acres, produced fruit of a value of $2,857,980. The county grew pears valued at $257,450; prunes, $55,000; plums, $56,000; figs, $15,000; grapefruit, $306,000; almonds, $362,760; avocados, $100,000. Other larger producers were: Lemons, 10,679 acres, 1,785,720 boxes, $2,851,303. Oranges, 37,618 acres, 5,418,800 boxes, $18,965,800. Walnuts, 24,124 acres, 8,200,000 pounds, $2,542,000. Olives, 2,776 acres, 7,600 tons, $1,064,140. Grapes, 3,417 acres, 24,160 tons, $1,812,000. Total valuation of fruits, $32,031,658. Grand total of all crops in the county, $53,758,004.

These figures are nearly $10,000,000 short of those given by the U. S. census in its preliminary statement issued early in April for the year 1919. Figures for 1920, however, are explained by the general trend toward lower prices and are no reflection on the soil conditions or on the energy of the farmer.

RED SPIDER DEMANDS ATTENTION

The pest control service of the California department of agriculture, based upon a report from Field Entomologist Theo. D. Urbans, says that the hot, dry weather of the past two weeks has caused the rapid development of the red spider in fields and orchards. The crops most severely affected are almonds, prunes, peaches, hops, strawberries and others, varying according to the location and cultural conditions. The amount of irrigation water available has an important bearing on the control of the red spider.

Orchards which have been persistently dusted with dry sulphur are considerably less affected than untreated areas. Where this pest is now so abundant that the plants are suffering, dusting with dry sulphur will probably not be sufficiently effective to bring the pest under control and the liquid spraying will be necessary. It must be remembered that there is considerable danger of sulphur burning to the foliage on our hottest days even where the extreme heat does not come until two or three days after the spraying has been done. For this reason the minimum strengths of the different sulphur combinations which will kill the red spiders are recommended for summer spraying.

The lime-sulphur solutions should not be used stronger than 1½ gallons of liquid lime-sulphur to 100 gallons of water or 5 pounds dry lime-sulphur to 100 gallons of water. A better combination would be to use 1 per cent lime-sulphur solution with the addition of about 6 pounds of any of the wettable sulphurs to 100 gallons of water. About 3 pounds of paste spreader will increase the efficiency of the spray, which must be directed so as to strike the under side of the leaves.

From present indications we may expect severe red spider injury before the close of the season unless proper control measures are applied.

CROP ESTIMATING AND STANDARDIZATION

The California state department of agriculture and the federal bureau of markets have entered into an agreement for conducting on a cooperative basis standardization and crop estimating work in California. The purpose of the standardization work is to bring about an improvement in the use of existing standards and to establish additional standards for fruits and vegetables, as well as to coordinate the shipping point inspection established in California with the food products inspection now being conducted by the federal bureau in central markets.

The object of the cooperative work relating to crop estimating will be to coordinate the state and federal services and to develop intensively the crop and livestock service for the special benefit of the people of California and the general benefit of all interested in the agricultural industry.

An organization consisting of eight specialists and technical men is being formed to conduct the work. While the headquarters for this work will be with the California department of agriculture at Sacramento, branch offices will be opened and maintained in various parts of the state.

PNEUMATIC TIRES SAVE HIGHWAYS

Many roads not originally intended to carry heavy traffic were seriously damaged during the period of the war by the impact of heavy motor trucks. The natural result of this was to warn highway engineers of the importance of planning all future roads with reference to the kind of traffic that is likely to use them. The engineers responded immediately by building thicker roads and roads of more durable material; but in the absence of definite knowledge of the probable strength of the impact they have not known exactly how thick or how strong the roads must be made.

Recent tests of the impact of motor trucks made by the bureau of public roads develop the facts that when a solid tired truck strikes a one inch obstruction the impact may be as high as seven times the load, an average being about four times.

The tests show, however, that the impact depends largely on the kind and condition of the tire. Pneumatic tires cause the least damage to the road surface, the cushion of air reducing the impact so that it is seldom greater than 1¼ times the static load on the wheels. Although the impact increases with the speed of the truck, and it is therefore highly desirable to limit speed by strict regulation, the use of pneumatic tires would make higher speed permissible.

The tests of the bureau of public roads have pointed the way to more scientific designing of roads for motor truck traffic, and there is every assurance that engineers will now be able to build roads with practical certainty that they will withstand the blows of heavy vehicles.

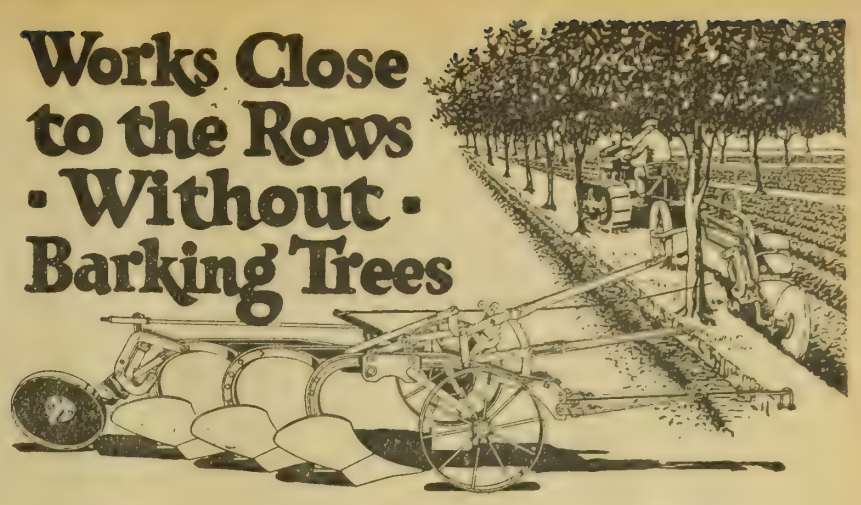
Further reassurance in this respect lies in the information that manufacturers are not building as many trucks exceeding five tons capacity as formerly. The number of industries in which very large trucks can be kept continuously working is extremely limited, so that the likelihood of forthcoming motor truck damage to public highways is considerably reduced.

IF THEY MIGHT BE FOUND!

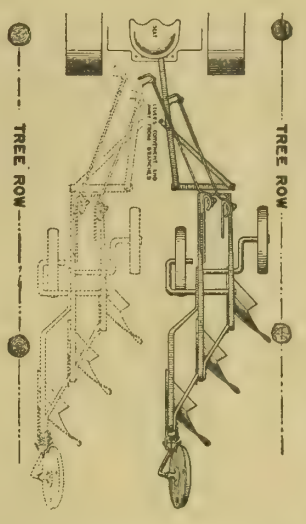
Lecturer (describing the charm of foreign travel)—There are many spectacles that one never forgets.

Old Lady (in the audience, excitedly)—Oh, do tell me where I can get a pair; I'm always forgetting mine.

Works Close to the Rows · Without · Barking Trees



THE John Deere No. 8 Orchard Tractor Plow, built especially to meet the requirements of Western fruit growers, has special advantages for doing good work up close to the row without harming trees or branches.



A Feature Every User Appreciates

With the plow set over to throw either to or from the row, the levers can be quickly angled so that they are within easy reach from the tractor seat, out of the way of limbs and free of the wheels when the tractor is turning short.

Convenient Supplies

Large stocks of John Deere implements and repairs for Western territories are kept by John Deere branch houses at San Francisco, Cal.; Portland, Ore.; Seattle and Spokane, Wash., and Boise, Idaho. There is a John Deere dealer in practically every farming community.

Reversible Hitch permits setting the plow to either side for close work in throwing either to or from the row. Note the illustration at the left.

Levers can be angled in when the plow is set to either side—they are always within easy reach from the tractor, out of the way of branches and free of the tractor wheels, when turning short.

Levers set low when the plow is at work.

Doesn't scar trees—note the wheel base design that permits close work without scarring trees—land wheel set inside line of third beam; furrow wheel set inside line of inner moldboard wing.

Simple, positive power lift—great range of adjustment for deep or shallow plowing; unusual clearance; bottoms that insure good scouring and pulverizing, and strength throughout to stand the strains.

Just the size for small tractors — three ten-inch bottoms—pulls light. Can be reduced to two bottoms by removing one beam, bottom and brace, and using a short connecting rod furnished as an extra.

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Deep-Well Turbines

Deliver a remarkably large quantity of water from wells of comparative small bore. Thoroughly lubricated. All parts readily accessible. Shaft protected from water, thus eliminating danger of bearings being cut or worn by sand and grit. All sizes. Send coupon.

BEAN SPRAY PUMP CO.
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Branch: Fresno *Branch: Los Angeles*

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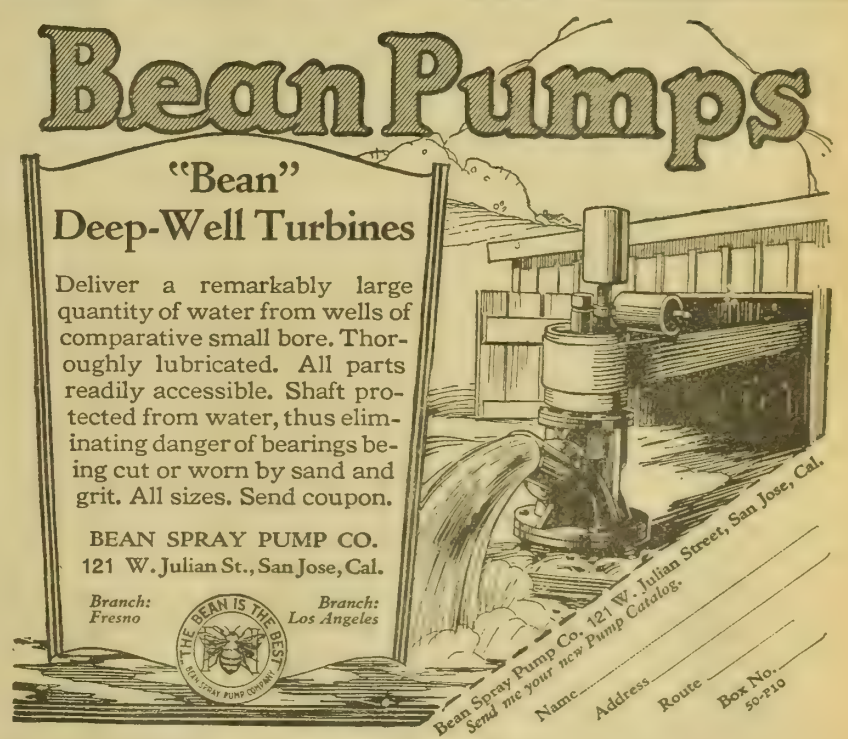


Bean Spray Pump Co. 121 W. Julian Street, San Jose, Cal.
Send me your new Pump Catalog.
Name.....
Address.....
Route.....
Box No.....
50-P10

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Beans Dying

What is the trouble with my beans, leaves of which I am sending?—Subscriber.

The leaves sent were yellow and apparently taken from a dying plant. However, they were submitted to an expert and he writes: "I have examined the bean leaves and have absolutely nothing to offer with the exception that it appears to me that the trouble is likely to be found at the roots. It might be a case of rhizoctonia or fusarium or even nematode. The small spots on the leaves I do not think are the main cause of the trouble."

In sending leaves of diseased plants more particulars must be given and a most careful inspection of the plant, the soil and the surroundings should be made and description given to us for submission to experts. The plant may be dying at the root as result of fungous or other trouble, and the leaves may show that they are out of condition and yet give no indication of the cause of the death of the plant.

Thoroughbreds

Can you please explain the difference between a thoroughbred and pure bred? I always thought a thoroughbred was a running horse like Man o' War and a pure bred was any other animal, viz., pig, cow, dog, etc. My friend, however, claims that thoroughbred and pure bred mean the same. Am I right?—Subscriber, Long Beach.

Like many other English words Thoroughbred has been fearfully misused. We would call the attention of our contending subscribers to "Purebred—Thoroughbred" on page 456 of our issue of April 2, 1921, which gave over a column to discussion of use of the terms. Specifically the noun Thoroughbred refers to "The English Thoroughbred, a race or breed of horses kept chiefly for racing, with an old recorded ancestry of unknown origin probably Oriental or from crosses of barb, Arabian and Turkish blood. The American Thoroughbred is from it and practically identical." Admiration for this magnificent breed has been such that the term Thoroughbred has been applied to other animals and even to human beings. A man of finer parts, full of mettle and enthusiasm, is often referred to as a Thoroughbred, but the application of the word indiscriminately to dogs, hogs and even gold fish is entirely incorrect no matter how pure the breed.

Garbanzos for Pigeons

I have just noticed the query about Garbanzos as a feed for pigeons, and as you "pass the buck" here goes. The analysis is: Protein 19.25, fat 6.25, fiber 2.34, carbohydrates 60.80, water 8.25, ash 3.11. From experience I can say that these make an excellent feed for pigeons, and when they can be found at a reasonable price good results will be had in feeding them up to 50 per cent of the ration.—Wilbur T. Helm, El Rio.

KIRKMAN NURSERIES

Reliable Trees and Vines

For Commercial Orchard and Vineyard Planting

Deliveries made direct from nearest propagating plant. To serve the orchard and vineyard planters of California to the fullest satisfaction and efficiency is our aim. We are gratified to have entrusted to us the future of small orchards as well as the large projects. One acre of Kirkman Trees will draw to us greater future plantings. One California orchard has taken two hundred and fifty thousand of our trees. Another four hundred thousand trees. Another six hundred thousand trees and vines together. They have reservations with us for their next season's plantings. The Ex-Governor of Coahuila, Mexico, named his immense project "El Fresno" in honor of our deliveries of nursery stock. We plan to serve every customer so satisfactorily that his future profits will be assured. Correspondence solicited.

Kirkman Nurseries

Fresno, California

Member of Nurserymen's Bud Selection Association of California

Federal Farm Loan

I would like to know under what conditions money could be borrowed from the federal reserve bank. I have in view a place or farm in Shasta County, California, which I think I could buy and be given the privilege of giving a first mortgage for an amount equal to a first payment, which would not exceed 50 per cent of the valuation of the place. I read an account of a man who bought a farm in this way, borrowing the money from the federal reserve bank and giving them a first mortgage for the amount borrowed, the man from whom the place was bought taking a second mortgage. — Subscriber, Las Vegas, Nevada.

Presumably our subscriber wishes to know as to the federal farm loan bank as the federal reserve bank is unable to make long time loans. The best information about the operation of the farm loan bank may be had by writing Federal Farm Loan Bank, Berkeley, California, for printed matter describing operation of the system and giving information as to the nearest federal farm loan association. These associations have been formed in many of the counties of California and afford material aid in securing the loan. From that association the application blank may be had and this filled out with description of the property, location and other matters, will first be passed upon by the appraising committee of your local association. If this committee gives favorable decision the matter is referred to the bank and the official appraiser will as soon as possible pass upon the loan. The various steps required in securing these loans necessarily consume a lengthy period before the matter can be closed. If a buyer who thoroughly understands the farming game can find an owner who would sell under the plan outlined by our inquirer it is possible he could make good and pay for his farm, but unless one is a born and bred farmer he would find many difficulties, that is, unless his idea in starting without any payments is to have abundant working capital. The average value of farms in California is reported in the 1920 census at $26,122. This means farms and buildings. On top of that comes equipment and livestock. Therefore, it may be seen that farming in California requires a sizable investment.

Panic Grass

Please tell me the name of the grass inclosed.—Subscriber, Wasco.

This is a species of panicum or panic grass, of the millet tribe. Several species occur in all parts of the state. Some are annuals; some perennials. Only the roots could determine this. Some have simple stems; some branch. From the flowering tops sent we cannot say more than it is a panicum, for all species are variable, some so much so as to puzzle the best botanists. But we trust this answer is sufficient. If not, send part of entire plant, including roots.

Canadian Thistle

Note in today's Cultivator an item on the Canadian thistle. This is not as hard to get rid of as some think. One has only to plow about four inches and harrow and in six weeks repeat, and that will be the last of the thistle. Another way is to spud them out below the crown when they are one foot high before the ball or seed forms. A spud is a knife like the putty knife on the end of a hoe handle. This is slow but sure.—Subscriber, Redlands.

SAN FERNANDO VALLEY FAIR ENDORSED

The San Fernando Valley Fair to be held September 13-18 has been endorsed by the Los Angeles chamber of commerce as the county fair for Los Angeles. The San Fernando Valley communities have united in organizing a big fair, offering cash awards of $22,000. There will be a horse show every evening and a working tractor demonstration every afternoon. The official poultry show of the A. P. A. for California is expected to bring out a big exhibit.

The State Fair

By Chas. W. Paine

SINCE 1854 when the first state fair was held California's annual exposition has grown steadily through the years until today it has attained proportions that entitle it to rank among the larger fairs of the country. While the growth in the past few years has been marked there is little doubt but that this year's exposition and those of succeeding years will see continued development.

Some idea of the growth of the institution can readily be gained when attention is called to the fact that the first state fair was held at San Francisco with the meager appropriation from the state of $5,000. The total amount of premiums offered at that exposition was only $4,660.

In 1855 the fair was held in Sacramento, in 1856 in San Jose, 1857 in Stockton, 1858 in Marysville, 1859 in Sacramento, where it has been held thereafter each year with the exception of the year 1915 when no state fair was held because of the Panama Pacific International Exposition in San Francisco.

It is interesting to note that there were no races held in connection with the state fair until 1873, when the premiums amounted to $8,925, and the race purses totaled $14,200. Up to 1916 the amount of money offered for the purses exceeded that offered for premiums. During the incumbency of John M. Perry of Stockton as president of the state agricultural society the premiums offered were $41,536 and the purses totaled $16,500.

In 1920 the offering for premiums in livestock and other products amounted to $52,976. This amount, in addition to many more thousands of dollars offered as premiums in other departments, brought the total figure close to the $100,000 mark, which this year will be greatly increased.

These great strides have made the state fair the one big annual event by which to measure the development of the resources of California and the result has been that these annual expositions are among the most influential of the agencies employed toward practical education and advancement in the state.

The service the California state fair has rendered to the agricultural and livestock advancement can in no way be estimated. Year after year it has been the means for establishing standards, practices and types. Year after year it has offered inspiration and encouragement to thousands.

The fair is going to render a greater service to the farmers and the people generally of the state this year than during any previous period in its history. Farmers who attend this year's exposition will obtain more real, practical, solid ideas about farming, stock raising, marketing and similar problems which are vital, than can be gathered from any number of books or schools. And, what is more important, they will be ideas and suggestions which are up to the minute, designed to meet present day problems with present day methods.

For it must be remembered that the state fair is first of all an educational institution. It has back of it a serious purpose, that of providing object lessons in farm cultivation, farm home culture and in other lines of endeavor. While it presents many features of the lighter sort, amusing, entertaining, and diverting, the whole idea centers in the need for more definite knowledge of the growth of agricultural and mechanical science.

The tradition of the state fair for offering extremely liberal prizes for competitions between livestock, agricultural and vocational exhibitors is to be fully upheld this year and it is certain these important departments will more than live up to their mark of past years and record again the great progress California is constantly making in these fields of endeavor.

California is an agricultural and stock raising state in the strictest sense of the word. These two industries represent a great part of our productive wealth, therefore it is but natural that there should be the greatest competition among exhibitors in these departments when the gates of the state fair open in September.

The exposition this fall is to be so replete with exhibits and displays that it is almost impossible to ennumerate all. Prominent among these will be the "Power of the Farm" section in an eight acre space covered with the largest tents ever made. This exhibit will house every kind and make of power machines used on the farm. Every bolt and working part of every machine, from the power churn to the tractor, will be displayed and experts will be in attendance to point out the many advantages offered by these labor saving devices. The latest conveniences in household furnishings also will be shown and should prove of interest to the women fair visitors.

The vocational exhibits, contributed by the children of California's schools, will be the finest that have ever been shown at the fair. With the incentive of attractive prizes and urged by the educational advantages of such training, the schools of the state have advanced at a marvelous rate during the past few years and have taken a greater interest in placing competitive exhibits at the fair.

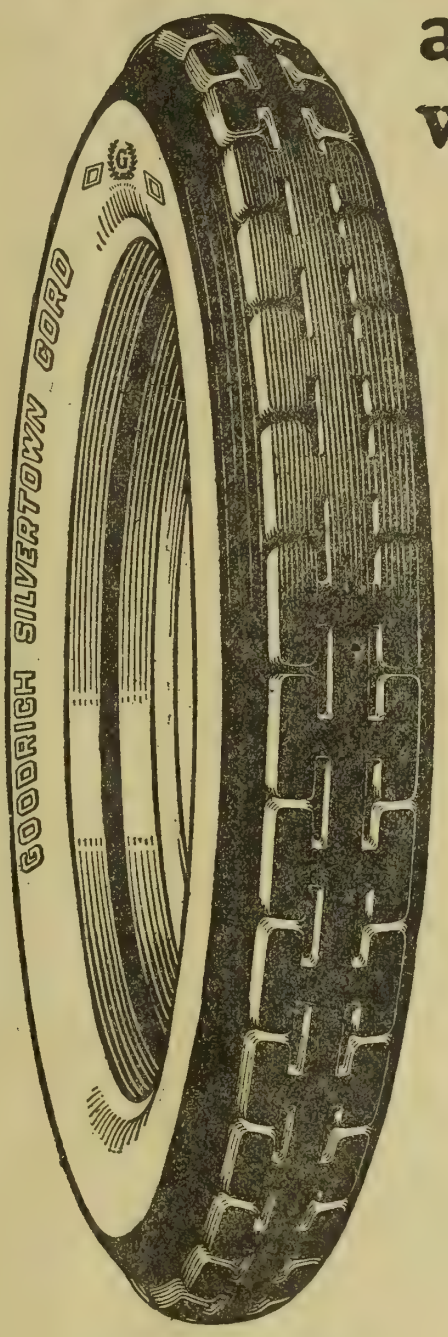
Every comfort and convenience will be installed for the women and babies. Nurses and physicians, playgrounds and clinics will care for the comfort and safety of mother and little ones. Nothing will be overlooked to make these features par excellence. Indian exhibits, music, the art gallery and the annual baby contest also will add to the attractiveness of this department.

Some berries and apples on Sonoma County ranches are reported burned by the recent hot weather.

INCENSE CEDAR

A tree common to all parts of California is the incense cedar (Libocedrus decurrens Torrey) of which the cut in California alone amounted to 16,587,000 board feet in 1916. The wood is chiefly valuable for its lasting qualities, and it is used for telegraph poles, ties, flume timbers, etc. Recently it has come more and more into use for pencil slats, as the supply of southern red cedar becomes exhausted. The commercial range of incense cedar is confined to the west slope of the Sierra Nevada and the mountains of northern California and southern Oregon, although the tree occurs throughout the mountains of the Pacific Coast from central Oregon to northern Mexico. It is found only in mixture with other species, chiefly yellow pine, sugar pine, Douglas fir and white fir, averaging in general about eight per cent of the stand.

Goodrich Tire Price Reduction applies to all sizes—without reservation



The anti-skid safety tread Silvertown Cord

The name of Goodrich on a tire means just one thing—quality. And that quality is always the highest that can be produced.

Each tire is specially designed for the service it must deliver. Goodrich Fabrics, in the popular sizes, have established themselves as unusual values from the standpoint of real economy. Silvertown Cords in their class have always held first place in the esteem of motorists, not only because of their symmetrical perfection of finish, but furthermore, by reason of their long life, complete dependability and satisfactory performance.

Your dealer will supply you at these fair prices:

SILVERTOWN CORDS

SIZE	Anti-Skid Safety Tread	TUBES
30x3½	$24.50	$2.55
32x3½	32.90	2.90
32x4	41.85	3.55
33x4	43.10	3.70
32x4½	47.30	4.50
33x4½	48.40	4.65
34x4½	49.65	4.75
33x5	58.90	5.55
35x5	61.90	5.80

FABRIC TIRES

Smooth	30x3	$12.00
Safety	30x3	13.45
Safety	30x3½	16.00

Safety	32x3½	$20.25
Safety	32x4	26.90
Safety	33x4	28.30

20% Lower Prices

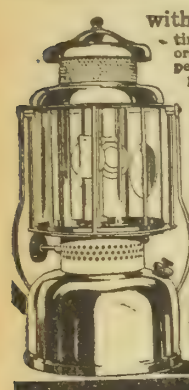
The Goodrich price reduction which took effect May 2nd was without reservation. It included Silvertowns together with Goodrich Fabric tires and Goodrich Red and Gray inner tubes.

THE B. F. GOODRICH RUBBER COMPANY
Akron, Ohio

300 Candle Power

GREATEST light for farm and general outdoor use. Don't confuse with ordinary gasoline lanterns. Lights with matches. Extinguishes by closing valve. The

Coleman Quick-Lite



with reflector, is twenty times brighter than the ordinary oil lantern. Burns perfectly in any wind and proves its worth in the wildest storm. Rain proof; Bug proof. Can't turn up too high. No wick, no smoke, dirt, grease or odor. No danger even if tipped over. Thousands in use everywhere. Gives perfect satisfaction. 15,000 dealers sell Coleman Quick-Lite Lanterns and Lamps. If yours can't supply address our nearest house. Dept. AH

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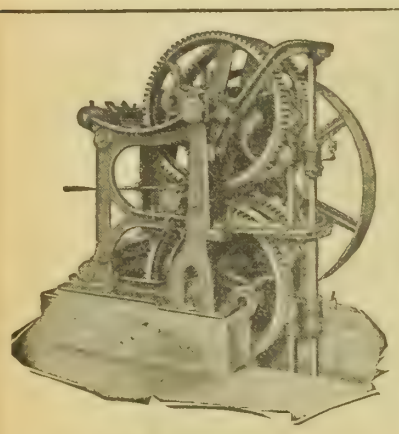
Wichita, St. Paul, Toledo, Dallas, Los Angeles, Atlanta, Chicago.



INSTALL POMONA Duplex Plunger Deep Well Pumps

and hold down the most important item of expense in your water supply, which is the power bill.

Printed Matter for the Asking

The Pomona Mfg. Co.

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Also Manufacturers of Pomona Irrigation Gates and Valves

Save 1-2 on Fuel

CHEAPEST HEAT YOU CAN BUY

The Sievert Oil Burner burns either distillate or kerosene oil in cook stoves, heaters, furnaces, pasteurizers, boilers, prune dippers, dairy sterilizers, etc. Absolutely safe, odorless, very convenient and low priced. MAKES HEAT AT HALF WHAT WOOD AND COAL COSTS. Install it yourself. Write for circular and prices on different sizes. Address Sievert Oil Burner Co., 710 North Main St., Los Angeles.

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One Man One Team

Have water on your own farm. In spare time make wells for your neighbors. It means $1000 extra in ordinary years, double that in dry years. No risk—no experience needed.

Outfits for Getting Water Anywhere

Earth augers, rock drills and combined machines. Engine or horse power. *Write for easy terms and free catalog.*

LISTER MFG. COMPANY
Box 716 Clarinda, Iowa

Household Department

THE OPTIMIST

For light and love and laughter,
For flowers and fun and play,
For dawn of day and sunset—
Father, our thanks this day.

For every thought that's noble,
For every aim that's right,
For strength and courage given
To aid us in the fight.

For friendship's priceless jewel,
For childhood's sunny smile,
For all the kindness spoken
To warm our hearts awhile.

For sorrows that have opened
Our eyes to higher things:
For everything that soothes us
And everything that sings.

For those we long have cherished,
For those we loved and lost,
Who wait somewhere to greet us
When we the Stream have crossed.

For sleep, when day is ended,
For dreams and high desires:
For all the soul's calm yearnings
And all the heart's high fires.

But above all the blessings
That bloom along the way,
For work and power to do it,
Father, our thanks this day.
—Leigh Mitchell Hodges.

HOME CANNING OF FRUITS

(Continued from Page 77.)

Soft fruits are brought to boiling in syrup or with sugar as described above and packed hot, enough of the syrup being added to cover the fruit.

Sealing Cans

If Sanitary cans are used they should be sealed immediately after filling the can with hot fruit.

If glass top jars are used place scalded rubbers and caps in place and place clamp on top. Do not pull down the side clamp. The lids of other jars should be screwed on loosely. Full directions for the use of these machines accompany them.

Sterilizing

The old wash boiler may be used as a sterilizer. Just place in it a false bottom made of wooden slats and set the jars on this rack. Wire racks are available at moderate cost.

The water in the boiler should come about half way up the sides of the jars or cans and should be about the same temperature as the jars in order to avoid breaking the glass.

Cover the boiler with a tight fitting lid. A large piece of cloth placed between the lid and boiler is sometimes desirable.

Heat to boiling and boil for the length of time given in the last paragraph, counting time after the water boils. Jars require longer than cans because they heat more slowly. The jars of fruit are removed as soon as the sterilization is completed and are sealed at once. If stood upside down leaks can be detected.

Cooling

Cans should be placed in cold water for about ten minutes after sterilization in order to check overcooking.

Botulism

Much worry in regard to the safety of home canned fruits has been caused by newspaper reports of cases of poisoning. People have been killed by home canned fruit but in every case the fruit was put up in the old fashioned manner by simply boiling it, packing it hot without additional sterilization in the jar. That is the vitally important step in canning.

Fruits canned and sterilized as directed in this article are safe.

Time Table for Canning Fruits

Time of sterilization at 212 degrees Fahrenheit:

Apples in cans 10 minutes, in jars 15 minutes (blanch 1½ minutes before canning).

Apricots in cans 10-12 minutes, in jars 20 minutes.

Blackberries in cans 8 minutes, in jars 15 minutes.

Cherries in cans 18 minutes, in jars 25 minutes.

Currants in cans 10 minutes, in jars 15 minutes (use only enameled cans or jars).

Figs in cans, 40 minutes, in jars 40 minutes (better preserved).

Grapes in cans 10 minutes, in jars 15 minutes (Muscat variety best).

Loganberries in cans 8 minutes, in jars 15 minutes (enameled cans or jars).

Peaches (free) in cans 15-18 minutes, in jars 25 minutes.

Peaches (cling) in cans 20-25 minutes, in jars 30-35 minutes.

Pears in cans 18-22 minutes, in jars 30 minutes.

Plums in cans 8-14 minutes, in jars 20 minutes (enameled cans or jars best).

Raspberries in cans 8 minutes, in jars 15 minutes (enameled cans or jars only).

Strawberries in cans 8 minutes, in jars 15 minutes (better preserved or as jams).

Caution: Count time after water begins to boil.

HINTS FROM HOUSEKEEPERS

Mixed and Fig Pickles, Breakfast Buns

In the Cultivator of July 2 there was a request for a recipe for mixed pickles. Am sending one which I have used for years and which we think excellent.

Mixed Pickles.—Three pints green beans, cooked; 1 pint onions, scalded in hot salt water and then chopped fine; 3 pints large cucumbers, chopped; 1 pint small cucumbers, whole; 2 pints green tomatoes, chopped; 3 bell peppers, chopped; 3 pints vinegar; 3 cups sugar; ¾ cup flour; 2 teaspoons celery seed; 2 tablespoons mustard seed; 1 tablespoon tumeric powder. Chop tomatoes, cucumbers and bell peppers and let stand over night in weak salt water, drain, mix all well, put on stove when hot. Have flour and tumeric powder mixed with water, pour over, stir gently. Cook ten minutes, then can.

Fig Pickles.—Also here is a recipe for fig pickles which is very good: To one pound of figs, three-fourths pound of sugar. Drop figs in the boiling syrup and let remain until you can penetrate them with a straw, then remove and place in jars in layers, between which sprinkle a few cloves and some cinnamon, then cover with syrup. For three mornings pour syrup off, bring to a boil; on the third morning add one cup of vinegar to each three cups of syrup, cover fruit and seal.

Here is a good recipe for hot breakfast buns: Two cups yeast sponge, 1 cup sugar, 1 cup lard, 1 cup warm water. Mix as for bread, let stand until bedtime, then roll one inch thick and cut as biscuits, let raise until morning and bake. — Mrs. Mary Hughes, Santa Ana.

Fruit as a Medicine

People with serious stomach trouble who can not eat any ripe or canned fruit can eat all dried fruits. Cook rolled oats, corn meal or cream of wheat with equal parts of any kind of dried fruits, especially seedless raisins.—O. H. Mack, Reno, Nevada.

HOUSEHOLD QUERIES

Olive Oil Pickles

Can you send me a recipe for olive oil pickles? I think I saw one in the household department a year ago.—Subscriber, Glendale.

These are exceptionally fine: Two dozen medium sized cucumbers sliced, 1 pint vinegar, ½ cup olive oil, ¼ cup salt, ¼ cup sugar, 2 ounces mustard seed, 1 tablespoon celery seed. Mix, let stand 2 hours, then can cold.

Oil Cucumber Pickles

Would the household please print a recipe for oil cucumber pickles (not olive).—Subscriber, Porterville.

Two dozen medium sized cucumbers sliced, 1 pint vinegar, ½ cup salad oil, ¼ cup salt, ¼ cup sugar, 2 ounces mustard seed, 1 tablespoon celery seed. Mix and let stand 2 hours, then can cold. These are exceptionally fine and very simply prepared.

Canning String Beans

Will string beans keep if put up in

The Cultivator Patterns

3672-3673. Ladies' Costume.—Waist 3672 cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Skirt 3673 cut in 7 sizes: 26, 28, 30, 32, 34, 36 and 38 inches waist measure. A medium size requires 3¼ yards of 40 inch material for the skirt and 3 yards of 36 inch material for the waist. The width of the skirt at the foot is about 2⅞ yards. TWO separate patterns, 10 cents FOR EACH pattern.

3682. Girl's Dress.—Cut in 4 sizes: 4, 6, 8 and 10 years. A 6 year size requires 3¼ yards of 24 inch material. Price 10 cents.

3145. A Simple Apron. Cut in 4 sizes: Small, 32-34; Medium, 36-38; Large, 40-42; and Extra Large, 44-46 inches bust measure. A Medium size will require 4 yards of 36 inch material. Price 10 cents.

3676. Boy's Shirt.—Cut in 5 sizes: 6, 8, 10, 12 and 14 years. A 12 year size requires 3¾ yards of 27 inch material. Price 10 cents.

3668. Misses' Dress.—Cut in 3 sizes: 16, 18 and 20 years. A 20 year size will require 4¾ yards of 38 inch material. The width of skirt at the foot is about 1⅞ yards. Price 10 cents.

3660. Girl's Dress.—Cut in 4 sizes: 6, 8, 10 and 12 years. Size 10 requires 3⅝ yards of 38 inch material. Price 10 cents.

3656. Ladies' House Dress.—Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size will require 5 yards of 36 inch material. The width of the skirt at the foot is 2 yards. Price 10 cents.

3674. A Comfortable Corset Substitute.—Cut in 4 sizes: Small, 34-36; Medium, 38-40; Large, 42-44 and Extra Large, 46-48 inches bust measure. A Medium size requires 1½ yards of 32 inch material. Price 10 cents.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH

How to Order Patterns

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cents) stamps for each number. In order to furnish our readers with the very best NEW YORK styles, all patterns ordered are filled in NEW YORK. Therefore, we promise to deliver all patterns ordered within TWO WEEKS; we guarantee safe delivery of all patterns

CATALOGUE NOTICE

Send 15c in silver or stamps for our Up To Date Spring and Summer 1921 Catalogue, containing over 500 designs of Ladies', Misses and Children's Patterns, a concise and comprehensive article on dressmaking, also some points for the needle (illustrating 30 of the various, simple stitches) all valuable to the home dressmaker.

PATTERN DEPARTMENT
California Cultivator
Los Angeles

jars? Please tell me how to obtain best results in putting them up.—Subscriber, McFarland.

String beans will keep if put up in jars with lemon juice or vinegar added to brine. If you have a steam pressure cooker or canner it will not be necessary to add the acid. Here are directions as given by W. V. Cruess of the state university in his book, "Home and Farm Food Preservation." Note the article on this page by Mr. Cruess on home canning of fruits. We will have another on canning vegetables next week or the week following.

Canning String or Wax Beans.—Use small tender pods only for best results. Grade into two sizes; the smaller will be more tender. String and break or cut in pieces as for table use. Large pods are better if cut in thin pieces lengthwise. Parboil or blanch in boiling water (3 minutes for small tender pods, 6 or more for tougher pods). This may conveniently be done by placing beans in cheesecloth bag in boiling water. Then chill by plunging in cold water. Remove immediately, take beans from sack and pack in jars. Add boiling hot brine made in proportion of 2 tablespoons salt to 8 tablespoons lemon juice or strong vinegar per gallon of water. Place caps and rubbers on jars loosely. Boil 2 hours in cooker as shown in article on canning fruits in this department. Remove jars and seal.

If pressure canner is used omit lemon juice or vinegar. Sterilize in cans 30 minutes under 10 pounds steam pressure 240 degrees Fahrenheit.

Pecan Pralines

Please can you tell me how pecan pralines are made?—G. S. H.

Two cups brown sugar, ¼ cup boiling water, cook 5 minutes, add 1 cup pecan meats and 2 tablespoons butter. Remove from stove, beat 1 minute, drop spoonfuls on buttered pan.

OUR READER CONTRIBUTORS

The Happy Family

I am a subscriber to your paper and we get lots of helpful hints from it. I am interested in child life. We have raised eight, so can speak from a true standpoint in behalf of the child. I am sending just a few thoughts on a happy home. It may reach some reader and be helpful in a small way.

* * *

I know a happy family that lives in the country. We'll say their name is Brown. They have two children, a boy and a girl, Jack aged 12 and Janet aged 10 years. Jack and Janet are good children and go to school and help with the chores around the home. Mr. and Mrs. Brown take great interest in their children and have won their love and confidence by being companions to them and joining them in the pleasures of child life. They always have music, play games, read and tell stories in turns. Sometimes they go to a show or have some of their friends in for an evening of fun. In this way they keep their children at home and a love for home in their minds.

"We must teach the children to learn how to manage and think for themselves," said Mr. Brown to his wife. "I know of no better way," Mrs. Brown answered, "than to give them something they can call their own, to let them care for and have the proceeds to start a little bank account. It will teach them to save and manage."

So they planned to give Jack two orange trees, he to take care of them, cultivate, prune, spray, fertilize, water, pick and find a market for his fruit. All this he could do himself, so the cost was small. Janet was given six White Rock hens, pure breds. A fine rooster went with them. She sold the eggs for hatching, thereby getting the top price for the eggs.

Jack and Janet are up early, helping with the duties of home. They now have a nice little bank account started and are happy and contented on the farm, have pure food for their thoughts and are not surrounded by the evil temptations of an idle brain.

I wish we could all plan some aim in life for our children to work up to. It would make better men and women and there would be better fathers and mothers and more happy homes.—Mrs. J. W. Dines, Rialto.

HOMEMADE CANDIES

Divinity

Boil together 3 cups sugar, 1 cup corn syrup and ½ cup water to crack stage (till it is snappy and brittle when dropped in cold water) or to 270 degrees Fahrenheit. Pour over beaten whites of three eggs and beat rapidly. As it thickens add 1 teaspoon vanilla and ½ cup chopped nuts, half cup chopped candied cherries.

Plum Pudding Candy

Two squares chocolate, 3 cups sugar, 1 cup sour cream, few grains cinnamon, 1 teaspoon vanilla, 1/3 cup glace cherries, 1/3 cup Sultana raisins, 1 cup walnut meats.

Put chocolate in saucepan and melt over hot water, add sugar and mix well, then add sour cream gradually, stirring it in carefully. Put saucepan on range, bring to boiling point and boil without stirring to 230 degrees Fahrenheit, or until it forms a very soft ball when tried in cold water. Pour out on slightly moistened marble slab or large platter and leave undisturbed until cool. Work with a broad spatula until candy gets stiff. Put in top of a double boiler set over boiling water until candy softens, stirring constantly, add cinnamon, vanilla, cherries cut in pieces, raisins and chopped walnut meats; mix well and pour into an oiled brick mold or deep pan. Let stand several days to ripen, remove from mold and cut in pieces. Serves 32.

A man may be crooked and yet be going straight to the devil.

AN EYE THAT SAW

"Early this morning Joe treed a plump little squirrel and I got a clean shot at it. When I got up to where the little beggar had fallen I found that it was still living. For some reason, I stopped and looked down at it for a minute. There was an almost human look in those eyes. It was reproach mingled with pain, and it cut me to the quick. I felt as though I had shot Joe and he was questioning why I, to whom he had done no harm, should be so cruel. As these thoughts went through my mind, the little creature reached out his paw and drew a large leaf toward him. I had shot to kill, but he seemed to have gained the victory. He seemed to say with his eyes: 'You poor specimen of a man, what do you understand?' He drew the leaf over his face and the little body quivered and was still. I was shut out from something. I was nothing but a killer and should not see. It was as if that little animal saw God, but I was not worthy. I took off my cap and there in the woods I made a vow that I should never again shoot one of God's creatures for pleasure. Joe seemed to understand, for he nosed my hand sympathetically. I dug a little grave and placed the squirrel in it. Then Joe and I wandered home again."—Dumb Animals.

HIS SMILE

He wasn't rich as dollars go,
He didn't have a pile of dough.
He didn't own a motor car,
He couldn't often travel far,
He couldn't dress in costly style—
He just possessed a kindly smile.

Knew how to work and how to play,
He had a happy sort of way,
And he respected women fair,
And dealt with men upon the square,
And people thought him much worth while
Because he had a kindly smile.
—Michigan Tradesman.

THEY ALWAYS DO

He worked by day,
He toiled by night,
He gave up play
And some delight.

Dry books he read,
New things to learn,
And forged ahead
Success to earn.

He plodded on
With faith and pluck,
And when he won,
Men called it luck.
—Detroit Free Press.

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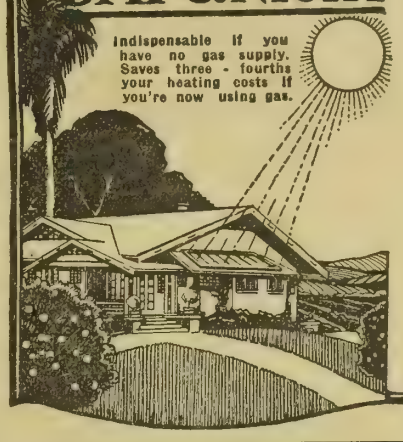
DAY & NIGHT



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As we will not exhibit at the fairs this fall, we offer for sale the entire show herd which we are now fitting as we consider it will be better business, both for us and the breed, to have these animals win in our customers hands.

They are without doubt the best hogs Diamond Bar ever fitted and should win at any show in the country.

Our prices are very reasonable, as we want these animals to be in the show rings this fall.

Herd consists of Aged Sows, two Senior Yearling Sows, ten Junior Yearling Sows, ten Under Year Sows, three Under Year Boars and three futurity litters.

Act at once if you want one or more of these great individuals to win for you this fall.

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SPADRA California — Los Angeles County

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Three Top Boars
Fannie's Orion King assisted by Uneeda Orion B, 2nd prize aged boar at State Fair, 1920, and grand champion at Glenn County Fair, 1919, and Valley View's Sensation, 3rd prize junior boar pig and litter mate to 1st prize and reserve champion at State Fair, 1920, and a wonderful string of prize winning sows and gilts, including Miss Sensation, 1st sow pig and reserve champion at State Fair
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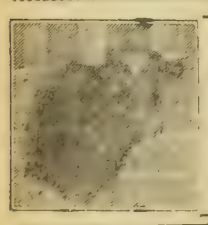

Quality is what they pay for at the markets. The Shorthorn furnishes both quality and weight. When the two are combined there's an extra check goes to the producer. Good breeding is the basis of both. Use a Shorthorn bull.
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Livestock News Notes

The H. G. Ranch at Santa Ynez writes: "We have just sold a pure bred Ayrshire bull calf to Charles Willoughby of Ventura, and we have been shipping many weanling Hampshire pigs to Northern California."

Senator Benj. F. Rush, veteran Shorthorn breeder of Suisun, has presented a junior Shorthorn heifer calf to the animal husbandry division of the University of California. The calf is a full sister to the heifer Mary Ann Rush presented to the college by Senator Rush last year and shown to the junior championship at the Pacific International.

Bullard Brothers, Woodland, report that their Rambouillets entered in the Del Rio, Texas, sheep sale topped the sale with an average of $80, and that they booked orders for additional heavy shipments.

At a meeting of the Pacific Coast Hereford Breeders Association held at Sacramento last week it was decided to hold a consignment sale of high class Herefords on Thursday, October 27, in connection with the California National Livestock Show at San Francisco.

One of the feature livestock events of the fall season will be the annual sale of Herefords from the J. H. Cazier and Sons herd of Wells, Nevada. The sale will be held at Sacramento, November 1 and will consist of 75 head of bred and open heifers and several herd bull prospects. The sale will naturally feature the service of the 1920 champion, Beau Blanchard 76th, on Harris Standard 2d heifers. The sale which will be managed by the California Breeders' Sales and Pedigree Company will be the second individual sale made from this herd. The first sale was held last fall and was the highest average Hereford sale held in the West.

J. W. Scudder, Escalon, reports the death of the well known Holstein bull, King Korndyke Pontiac, King Korndyke Pontiac, formerly at the head of the Jane Garden herd was the sire of the $12,000 King Korndyke Pontiac and therefore the grandsire of the $41,000 King Korndyke Pontiac Acme. He was sired by King of the Pontiacs and his dam, May Korndyke 2d was a daughter of Beauty Pietertje Prince.

The final figures for the new world record Holstein, Bella Pontiac, are 1,587.50 pounds of butter from 27,191 pounds of milk. The new champion completed her 365 days June 18 but as she was producing more at that time than at the beginning of the test she was carried on further, hence the increase noted over the figures announced in the Cultivator of July 2.

J. I. Cazier, Wells, Nevada, president of the Pacific Coast Hereford Cattle Breeders Association, states that his firm, the Nevada Hereford Ranch, will exhibit at the California state fair and also that it is certain that the Warm Creek Land and Livestock Company, Wells, will be represented at Sacramento with Shorthorns. Mr. Cazier reports the recent sale of a young bull, Sir Blanchard, a son of their champion Beau Blanchard 76th to R. T. Evans of Elko County.

One of the best sales of beef steers reported this summer was made when John A. Bunting of Mission San Jose sold two car loads for seven cents. The steers were Canadians a d have been running on grass for several months. Bunting will have out a strong Hereford show herd this fall.

It was announced last week that the Carleton College herd of Holsteins owned by the Carleton College Farm, Northfield, Minnesota, will be moved to this state in the near future and will be located on a large holding near Chowchilla. The herd in question is regarded as one of the high class herds of the Middle West and Manager F. F. Showers says that plans are under way which will at once place the herd in a forward position among Pacific Coast collections.

A. J. Harrell, a prominent stockman of Tehama County is establishing a herd of Hereford cattle on his ranch near Red Bluff and is expecting to receive a carload of registered heifers from Nebraska.

Alex. Wilson of the Italian Vineyard Company has sold 13 fine Berkshire gilts and a spring boar to T. H. Wright of Los Angeles for his ranch in Kern County. The gilts are bred to the great herd boars at the Guasti ranch and should make a fine foundation herd for Mr. Wright.

Carl P. Thompson of Clearwater, Oklahoma, member of the staff of the Oklahoma college of agriculture, will judge hogs at the Southern California Fair at Riverside. Mr. Thompson comes highly recommended by both the Berkshire and Duroc-Jersey Associations.

WOOL MARKETING PLANS DISCUSSED

Tentative wool grades formulated by the bureau of markets, together with the policies of the bureau and the American Farm Bureau Federation in regard to the regional and local county wool pools, were discussed at a conference recently held in Washington.

The farm bureau federation favors the plan of regional pools at points of large concentration, and is not convinced, it is said, of the practical value of the tentative wool grades. The conference resulted in a better understanding of the views of the farm bureau federation and of the bureau of markets regarding the points under discussion.

The meeting adjourned with the understanding that the bureau of markets would arrange for a later conference between representative wool growers, buyers, mills and organizations of farmers at a convenient date in order to promote a better understanding of the work of the bureau with respect to pooling, grading and marketing wool.

CALIFORNIA YEARLING AND TWO YEAR OLD JERSEY RECORDS BROKEN

Perfection of C. V.'s Pearl started test at 23 months of age and produced 8,375 pounds of milk yielding 525 pounds butter fat, entitling her to the honor of champion yearling Jersey in California.

King's Loretta D. of I. J. F. by producing 9,907 pounds of milk yielding 550 pounds of butter fat, exceeds the record for California Jerseys starting test as junior two year old. She began her record at two years and two months of age. Cows at her age are required to produce 256.9 pounds of butter fat to enter the register of merit. She more than doubled this. Her sire is King Mel Figgis 132899 and her dam is Financial Loretta D. of C. V. 304890. Bonnikson Brothers of Ferndale are the owners. The state class records for yearling, junior two and senior two year olds are now held by their cows.

NATIONAL SWINE SHOW

The recent session of the Illinois legislature appropriated $15,000 per year for two years to the National Swine Growers' Association, provided the National Swine Show is held in Illinois, $2,500 for managerial purposes and $12,500 for premiums. This makes it practically certain that the National Swine Show for 1921 will be held at Springfield.

IRIS ROOTS POISONOUS

Linnaeus was the first to record that irises are poisonous to cattle, but cases of such poisoning are rare. Some cases of human deaths are reported from eating the rhizomes of Iris versicolor, mistaking them for roots of sweet flag, Acorus Calamus. Several other species are considered poisonous. Last year there were noted in Canada three cases of death of calves, ranging from three to five months old, from eating iris roots lying on the ground.

State Register of Production for Grade Cows

By Professor F. W. Woll

The first certificate in the California state register of production for grade cows which was established last year by the college of agriculture was issued about a month ago to V. M. Del Ponte, a Del Norte dairy farmer, and a member of the Klamath River Cow Testing Association. His cow, Mouslie, a mature Jersey, produced during a lactation period of 243 days, 8,528 pounds of milk and 360.50 pounds of butter fat (average test 4.22 per cent). Certificates have since been issued to 18 other cows in this association and applications for admission to the register have been received for a considerable number of cows whose production is now being reported to the college of agriculture each month.

The production of the 19 cows at present admitted to the grade register range between 350 and 457 pounds of butter fat for the 10 month period, or an average of 384.3 pounds. This is very good for a beginning, especially in view of the fact that all these records were made outside of what is considered the best dairy sections of the state. The highest record so far made was that of a grade Jersey, 12 years old, owned by G. B. Von Alvensleben, of Del Norte County, which produced 8,486 pounds of milk and 457.08 pounds of butter fat (average test 5.38 per cent.)

The register of production for grade cows in this state is, therefore, now in full operation, and the college of agriculture is prepared to receive applications for admission to the register from California dairymen, whether members of cow testing associations or not, under the rules and regulations governing the register. Under the rules adopted, the record period is ten months. In order to qualify for a certificate, cows with first calf or more must produce over 350 pounds of butter fat during this period, and heifers with first calf and under three years of age at the time of freshening, must produce at least 300 pounds of butter fat. In addition, a cow must carry a calf at least five months during the 10 month period, and must be free from tuberculosis so far as is known. A further requirement is that the owner of cows to be entered must agree not to use or dispose of their male offspring for breeding purposes.

Up to January 1, 1924, cows will be accepted for first entry in the register, without regard to the breeding of their sire, but after that date, only cows sired by a pure bred registered dairy bull will be entered on the register.

There are no expenses connected with admission of cows to the register, and the certificates of production are issued free of charge to owners of cows that have met the requirements given above.

The register of production for grade cows was established by the college of agriculture with a view to improving the dairy herds of the state through establishing production records and giving distinction to cows that qualify for the register. The result will be that extra efforts will be made to have these cows do well and to develop their heifer calves into valuable future members of the herd. The latter point will be of increasing importance as dairy farming becomes a more specialized business and as farmers appreciate more the value of good dairy cows and learn that they cannot, as a rule, reach and maintain a high standard of production in the herd unless they take advantage of the progress made, and build up the herd from their best cows.

The California grade register is based upon the work of the cow testing associations in the state and is conducted in cooperation with these associations. Grade cows tested under the rules governing the system of semi-official tests of dairy cows in this state, are, however, also eligible for a certificate, and many such cows will doubtless be entered on the grade register in the future, as this becomes better known and appreciated by our own dairymen. The register is intended to do for owners of grade cows what various Advanced Registers are doing for pure breds and offers similar opportunities to all owners of grade cows in the state to win recognition for all high-producing cows that they may own.

Further information concerning the grade register, with rules, record blanks, etc., will be supplied upon request by the division of animal husbandry, University Farm, Davis, California.

BREEDING SEASONS OF DOMESTICATED ANIMALS

Among the wild animals the breeding season is fairly definite. This, however, according to investigators, is not true in the case of domesticated animals. The investigators inform us that "the breeding season has become much obscured or wholly lost in most of the domestic animals."

Of the domestic animals most of the breeds of sheep retain the definite breeding season by lambing in the spring as did their wild forbears.

More colts are foaled in the spring months of April, May and June after carrying the young a period of about 11 months from the time of conception to the period of birth. While it is true that more colts are born in the spring than at other times of the year a great number are born at other seasons.

It has been estimated that about 50 per cent of pigs and calves are born during the months of March, April and May and in both cases there is a secondary increase in the number of births in the fall. Many swine breeders recognize this fact and breed their sows at periods when it is possible to produce profitably two litters a year.

In the ewe a number of periods of heat occur during the fall breeding season provided fecundation does not occur early in the season. Each period of heat lasts two or three days and recurs at intervals of two or three weeks.

Normally, mares come in heat about nine days after foaling. Their period of heat lasts several days and through failure of coition or fecundation is again repeated at intervals of three or four weeks.

The period of heat in the cow occurs from six to eight weeks after calving if the young is suckled; otherwise, the period of heat begins three or four weeks after the calf is dropped. The heat period in the cow as a rule lasts only about one day and sometimes does not continue that long and recurrence of the period takes place normally about every three weeks.—State Department of Agriculture.

HOW TO COMBAT SCOURS

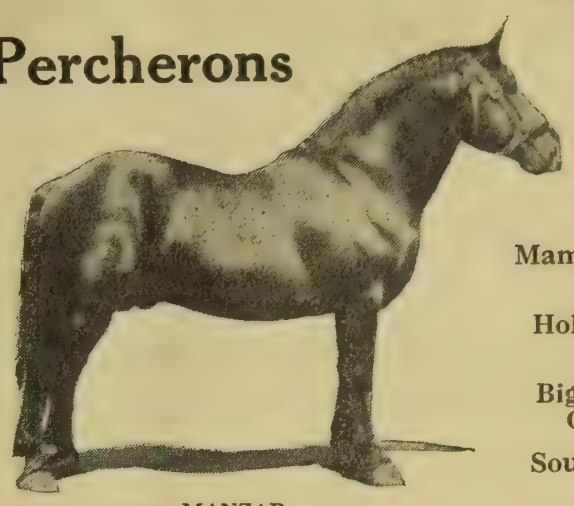
"Like all diseases of cattle," says M. H. Fohrman of the dairy husbandry division, university farm, "prevention is the best method of combating scours. Ordinarily scours, as distinguished from white scours or calf cholera, can usually be traced to overfeeding, irregular feeding, dirty pails, cold milk, sour milk, or old milk, and any one or all of these are due to carelessness on the part of the feeder.

"Constant vigilance is the price of healthy calves. As soon as trouble is detected, the feed of the calf should be reduced at least half. Administer a dose of castor oil in warm milk by means of a small drenching bottle. This will tend to remove all irritating substances from the bowels. Feed should then be gradually restored to the normal amount, and formaldehyde solution should be added to the milk at the rate of one teaspoon per pound of milk. This solution should be made up of one part of formalin (40 per cent solution of formaldehyde) to 31 parts of water. If prompt improvement does not follow this treatment, repeat the dose of oil and accompany it with another reduction in the feed.

"Calves are always greedy, and for this reason overfeeding should be avoided. This is true particularly when alfalfa is being fed, as it is exceedingly palatable and the animal is apt to gorge itself."

Santa Anita Rancho

Percherons



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The rancho has for sale three four-year-old, three two-year-old and three yearling stallions including Manzar and a two-year-old full brother. All are of exceptional size and quality, and were bred and developed on the rancho. All stock guaranteed.

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Masterpiece is out of Jessebel of Edgemoor whose record of 12,434.9 lbs. of milk and 748.3 lbs. of butter fat at two years of age makes her the best daughter of the great Ne Plus Ultra.

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What is the Matter With Hogs?

By R. P. Royce

ONE of the most persistent questions reaching this office is the query as to what is the matter with the hog business. So far as the writer has been able to discover the answer is that the trouble isn't so much with the hog business as with the hog owners, or, rather, the men who once raised hogs.

During the war period when the market price for pork soared to unheard of levels, the swine industry underwent wide expansion. Men entered the business with little or no knowledge of the problem of pork production; it was enough that the word had been sent out from Washington that the world needed pork and fats. The pork market was reflected in the values set for breeding stock and in many, many cases men of otherwise sound judgment began speculating in hogs. That many of our swine "breeders" went in on a high tide was clearly recognized, and when values began to recede a lot of these men were left high and dry, and in some cases financially impaired, on the wreckage of their ventures.

The mistake was made in allowing values for some breeding stock to get too far out of line with the actual market, and too many men engaged in the business as "breeders" instead of pork raisers and failed to keep their operations on a practical basis.

The mid-west was the center of the wildest orgy of speculation. With but few exceptions the business in this state was on a fairly sound basis, except for the fact that a number of our breeders attempted to follow the tactics of their Eastern contemporaries.

When the bottom dropped out of the pure bred swine business in the East, Californians got scared and made a dash for cover that stands out as one of the most "ignominious retreats" in the history of our livestock development. They threw up the sponge, declared themselves disgusted, put on blue—very blue—spectacles, and either got out of the business as best they could or have been conducting their activities on a basis that could not possibly attract custom.

Now what is the real situation in the hog business of California?

At the present time, and for the past several months, California has had the best market in the country.

Under present feed and labor charges and markets there is the widest margin between production costs and selling prices we have enjoyed for years.

For the past six months and at the present time, California pork packers have found it necessary to buy a large per cent of their supply in Eastern states. Hundreds of carloads of hogs have been shipped into San Francisco, Los Angeles and other coast markets.

California is not producing enough pork to fill local demand and, census figures notwithstanding, there is a smaller number of swine on farms in this state than for several years past.

Our grain and feed markets are at levels permitting an actual profit in feeding operations and such markets are likely to stay at such levels. And finally, there is scarcely a ranch in the state that can not carry a few hogs if only to utilize waste feed.

The hog business is as sound as any other business that can be called to mind if conducted on sane lines.

There is an economic need for more hogs and more hog raisers. We don't particularly need more "breeders." We do, however, need more men to raise good hogs, men who are willing to keep their operations on a basis where their hogs are making them a profit as a pork proposition and who are satisfied to sell carefully grown and selected breeding material at prices based on sound values. We haven't an outlet for five, ten or fifteen thousand dollar boars and sows, but there is an unlimited outlet for boars and sows at prices ranging from $30 for pigs up to $65, $75 and even $150, occasionally, for older stuff.

The hog when properly handled has always been a profit maker and will continue to pay off mortgages.

Don't worry about a few speculators who got pinched. Ask J. I. Thompson, for years with the college of agriculture and now managing a large farm, what he thinks of the hog business, or put the same query to Mark Bassett at Hanford, A. B. Humphrey at Escalon, Harvey Berglund at Dixon, or any of the men who have kept their feet on the ground. They have raised hogs for years and are raising them today—and as far as we know they continue in good standing with their bankers—pretty strong evidence, say we, just now.

Hundreds of Cultivator readers will find it quite profitable to raise a few hogs, and there never was a better time to buy than now. Remember, the time to go into a business is at low tide.

PACIFIC COAST JERSEYS WIN HIGH HONORS

In a recently compiled report of the medal awards for 1920, issued by the American Jersey Cattle Club, 71 Jersey cows in the United States qualified for medals under the rules of the club. Of the ten highest records made in the year, six were made by Pacific Coast cows with an average production of 887.21 pounds of fat.

Ten cows, by reason of superior performance, won more than one medal each, and of these seven were Pacific Coast Jerseys. Nineteen states are represented in the awards made. Oregon ranks first with 18 gold, three silver and one bronze; Ohio, second with eight gold and one bronze; Maine, third with seven gold and two bronze; Massachusetts, fourth with five gold and one silver; and Washington, fifth with five gold medals.

Heading the list of breeders of medal winners is J. M. Dickson & Son of Shedd, Oregon, with seven, followed by G. G. Hewitt, another Oregon breeder, with four, and Hood Farm of Massachusetts in third place. In the list of sires represented by medal winning daughters, Valentine's Ashburn Baronet ranks first, credited with five, followed in order by four other Oregon bulls.

California is represented in the list of medal winning cows by Noble's Sayda Polo 307199, owned and tested by J. W. Coppini of Ferndale. Her record is 750.61 pounds fat. Bonnikson Bros., also of Ferndale, were awarded a silver medal on Bonnie's Financial Loretta 397486 in the class for cows over two and one-half years and under three. She produced 655.18 pounds fat.

The territory embracing the Pacific Coast states, with only nine per cent of the registered Jerseys for the year, won 42½ per cent of all medals awarded.

This places the Pacific Coast states in the foremost position in the United States for high producing Jersey cattle.

CONTEST FOR CLUB BOYS

Probably the greatest gathering of boys in the history of club work will take place at Atlanta, Georgia, October 19 to 21, 1921, when club boys representing practically every section of the United States will take part in an International Club Judging Contest. The seven winners in this contest will be given a trip to the English Royal Stock Show, and hundreds of dollars will be distributed as additional prizes. This contest is under the supervision of club leaders representing the state agricultural colleges and the United States department of agriculture.

Even though the contest is several months off many club leaders and members are showing an interest in it and have expressed their willingness to send judging teams. The team from Texas, which defeated the entire field last year, is now completing preparations for the trip to Europe. That state will be represented again at the contest in Atlanta, but this year there will be more competition. for teams from Mississippi, Louisiana, Virginia, Oklahoma, Florida, Arkansas, Alabama, Kentucky, North Carolina and South Carolina are preparing to enter. Several other states in the North and West have signified their willingness to send teams to the contest if suitable arrangements can be made.

CARE OF HORSES' SHOULDERS

By G. E. Gordon

As warm weather approaches and the work on the farm increases there is a resulting increase in the number of sore shoulders found on work stock. This is due in many instances to poorly fitted collars and is also aggravated by excessive sweating, which without proper care tends to make the horses' shoulders very tender and causes them to gall. As is the case with many other troubles, it is more satisfactory to prevent than to cure them. It is extremely important to have the collar well fitted to the horse. It is also important to have the hames fit the collar properly. If this is not done, even though the collar may fit properly, the hames exert an undue pressure at certain points, causing the collar to become misshapen and fit improperly.

It is often desirable to have sweat pads on the collar, although they hold the heat and often cause excessive sweating. The collar or pad should be cleaned every night and should be kept soft and pliable. It is also desirable to wash the horses' shoulders off each night with fresh, cool water or water in which a little powdered alum has been dissolved, which will tend to toughen the skin. If the shoulders are galled it is especially desirable to wash them well every night, after which they can be treated with one of several different things. Powdered sulphur mixed with powdered alum is sometimes used with good results. Boracic acid is also healing.

A very satisfactory solution to apply on sore shoulders is White Lotion, which is made as follows: Lead acetate 1 ounce, zinc sulphate ½ ounce, water 1 quart. This should be applied every evening as soon as the collar is removed. It is also desirable at times to remove the collar at noon and wash shoulders in fresh, cool water before putting the horse to work in the afternoon.

Venadera Herd
Offers some excellent young bulls ready for service. Sired by Japs Perfection Owl. Out of cows with Register of Merit records. Also a few heifer calves.
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Route 1 - Modesto, Cal.

USE SHIRE HORSES
Breed your mares to Shire Stallions, good Shire Geldings are in demand. Get some registered Shire Mares.
Shire owners, record colts young, fees are double after one year old. Prepare Shires for fall shows, premiums are very liberal this year. For information on Shires write
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For Profitable Durocs
As we have sold out of bred sows and gilts, we are now offering big growthy fall pigs, either sex, at attractive prices.
D. G. Cummins & Son
Route 1 Visalia, Cal.

Selecting a Good Dairy Sire

SOME very practical advice is offered to guide in the selection of a dairy bull by a writer in the Indiana Farmer's Guide. This writer points out that in the selection of the dairy sire there are various conditions to be taken into consideration. There is an old saying that the sire is half the herd, and some have gone so far as to say that he is the whole herd. This last statement is especially true if it happens to be a scrub bull at the head of a herd of good dairy cows. Instead of raising the dairy qualities in the offspring over that of the dam he is lowering them, and for this reason the scrub sire with or without a pedigree is worse than none at all.

The ideal animal is one that will transmit the dairy qualities of his ancestors with uniformity to his offspring. To do this the sire must first of all have a line of ancestors that have been heavy producers. The more generations this line of ancestors dates back the greater will be the probability of his transmitting these desirable qualities to his offspring. Each animal inherits 50 per cent of its blood from its parents, 25 per cent from its grandparents and 12½ per cent from the third generation. The relative value of the ancestors can be reckoned accordingly, and in taking this into consideration a fair estimate of the value of the pedigree can be made. When studying the pedigree it is well to remember that official records mean more than private records.

After giving the pedigree due consideration the next thing to do is to look over the animal carefully. Of course, he should be attractive looking, for we always think more of things that look good to us. No bull should be placed at the head of a herd if he is not a strong, vigorous animal true to breed type. A dairy bull that is fine boned and has a feminine appearance is very undesirable and is less likely to transmit his dairy qualities together with a rugged constitution which is so much needed by a high producing dairy cow, as is a good, strong, vigorous bull with a masculine appearance. There are some who refuse to use a bull from a phenomenal record making cow for fear the vitality of the calf will be weakened. The majority of breeders, however, want the dam to have the highest record possible, other things being equal.

There is one type of animal that is meeting with disfavor among progressive dairymen and that is the animal with the sloping rump. A cow with a drooping tail head is always short between the hook and pin bones and short in the quarter. This gives an udder that is long and pendulous and usually lacking in the fore quarters. While there are some good cows that have this fault, all our highest record making cows have good straight top lines and well balanced udders.

Some dairymen will not keep an old bull because he is too heavy or they do not wish to be bothered keeping him from year to year after he is about four years old. It is at this age when a bull will prove his value. When buying a bull an aged animal that has proven his worth should always be preferred to a calf, as there is no certainty what a calf will develop into.

Some seem to think that a pedigree and an official record carry with them something frightful and they are afraid to tackle an animal that has any such thing or is related to animals that have recorded ancestors or that have been tested for capabilities and productiveness. If they would consider the matter a little they would see that ancestral influence is a matter of extreme importance. The fact should be kept in mind that it is the cows of certain lines of breeding that are the descendants of good producing animals that make the phenomenal records and that such cows are held and sold at very high prices. It is much cheaper and better to raise the good cows than to take chances of buying them. If the sire has a good constitution and great strength of character along the lines of heavy productiveness then we may expect to see him stamp his impress on the herd and prove of great value. If the cows in the herd are not as strongly bred as the sire then we may anticipate great improvement, and in point of value as a breeder the bull is more than half the herd.

No one has a good excuse for selecting or using a bull of second rate or ordinary breeding for good, pure bred sires can be easily obtained and at a satisfactory price. If all the dairymen and dairy farmers in this country were to give the proper attention to selecting dairy sires, millions of dollars would be added to the dairy herds, and the profits on the dairy products of the country would be increased by millions. While no dairyman should consider a few dollars when buying a bull, a fancy price is not always an indication of the true worth or merit of an animal.

BOVINE LAMINITIS

In sections of the country where it is difficult to procure transportation for animals it is not uncommon to find cattle which are driven long distances over hard or rough roads suffering from an inflammation of one or more feet, known as laminitis.

Other conditions such as the consumption of food high in protein or compelling the animal to stand for a long time, especially on a hard surface, may sometimes produce the disease. Breed is also said to exercise an influence on the disease. Some observers have noted that cattle reared in a flat country are more frequently affected than those in mountainous districts. The reason advanced is that the space between the toes (digits) is wider in the former than in the latter.

Many stockmen with an inquiring turn of mind have observed this condition in cattle and the state department of agriculture finds that a number of them are able to diagnose the disease quite readily. When the condition is noted in the standing animal the symptoms will be similar to those seen in the horse so affected. The inflammation under the horny tissue induces the animal to stand or walk on the heels as much as possible. During the development of laminitis there is a loss of appetite, a marked thirst, the muzzle is dry, and there is usually a considerable rise in temperature, sometimes reaching 105 to 106 degrees Fahrenheit. The treatment of the affection in cattle is the same as applied to the horse so affected, which consists in applying or administering agents that will remove the congestion of the tissues underlying the horny wall.—O'Toole.

A 30 POUNDER

Manager Cash of the Sierra Vista Stock Ranch at Perris reports some fine seven day records made by Sierra Vista producers. For instance, Dorothy Pontiac, junior four year old, has a record of 527 pounds milk and 30.04 pounds butter under official test. Other producers are: Juliana Canary Mercedes, junior three year old, milk 640 pounds, butter 27.59 pounds. Rosamaines Nancy Spofford, junior two year old, milk 404 pounds, butter 19.98 pounds. Juliana Nancy, senior two year old, milk 430 pounds, butter 16.18 pounds. Juliana Hartog Walker Hengerveld, senior two year old, milk 405 pounds, butter 20.57 pounds. Rosamaines Novena Netherlands, junior two year old, milk 481 pounds, butter 22.51 pounds; Juliana Hengerveld Pietertje, senior two year old, milk 419 pounds, butter 16 pounds.

CONTROL OF STABLE FLY

The numbers of stable flies can be kept down by caring properly for stable refuse and by properly stacking or otherwise disposing of straw in a way that will not make it attractive as a breeding place for the flies. Flies cause much distress among animals and at times heavy losses. Control measures are described by the United States department of agriculture in Farmers Bulletin 1097, "The Stable Fly; How to Prevent Its Annoyance and Its Losses to Livestock."

MOLASSES

"..on test as well as the milking herd"

says Mr. Hartsook, Lankershim, Cal.

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KING HENGERVELD HONRIETTE
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Order Chicks Now for delivery any time after Aug. 1st. Broilers pay, pullets make good layers. R. I. Reds, White Leghorns, Barred Rocks. Safe arrival guaranteed. Write for circular. Stubbe Poultry Ranch & Hatchery, P. O. Box 67, Palo Alto, California.

Baby Chicks from my carefully selected, heavy laying strain of pure bred S. C. White Leghorns. Am booking orders now for August and September delivery. Write for prices. J. R. Heinrich Poultry Yards, Arroyo Grande, Cal.

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Barred Plymouth Rocks — "Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Vodden, Los Gatos, California.

Cockerels from trapnested S. C. White Leghorn hens with records from 230 to 282 eggs, $5.00 each and up; trapnested 17 years. Bonnie Brae Farm, Burbank, California.

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Success in business is attained by experience and knowledge. The poultry business can be made to pay by following the teachings and information contained in POULTRY FOR PROFIT, $1.00 postpaid. Cultivator Publishing Company, Los Angeles, California.

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Agricultural College Graduate, single, white, healthy, twenty-eight, experienced with general farming and running tractors and modern farm machinery, wants permanent position where he can learn the orange business and where there is a change for advancement. Write O. S. Kyes, 4517 W. 16th Street, Los Angeles, California.

Farm Wanted — Wanted to hear from owner of a farm or good land for sale for FALL delivery. L. Jones, Box 168, Olney, Illinois.

Wanted—Second hand Compton or other make, 6 or 7 foot, one-man power scraper. C .E. Davis, Redlands, California.

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Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

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For Sale—$26,000.00 equity in 185 acre well improved Imperial Valley farm. Will consider trade. C. C. Gillespie, El Centro, California.

For Sale — Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

CATTLE

Auction Sale—17 high grade dairy cows, mostly Jerseys and nearly all young; 9 high grade dairy heifers, sired by a registered Holstein bull; 18 bred sows and gilts; 50 weaned pigs; one registered Duroc Jersey boar; one mule; complete ranch equipment, wagons, mowers, rakes, beehouses, separator, Calf Way Milker, and a large assortment of small tools. Sale will be held 2½ miles west of Woodland, Yolo County, Tuesday, July 26, at 1 p. m. Terms of sale, cash. F. M. Buck, Owner, Woodland, California. Ben A. Rhoades, Auctioneer; C. L. Hughes, Sales Manager.

For Sale—Purebreds at grade prices. My entire herd of purebred and registered Guernseys, consisting of one Imp. bull, one extra fine three year old bull, 7 cows, 5 with calves by side, 4 yearling and two year old heifers and 3 young bulls of serviceable age; 21 head all told; entire bunch goes for $2500. If interested write J. H. Bowles, Box 644, Merced, California.

Guernseys — Grape Wild Farms—Berkshires—Young bulls, from calf age up to 16 months old, of May Rose breeding and out of A. R. cows. Bred sows and gilts, service boars and pigs of both sexes for sale. Grape Wild Farms, Escalon, California. A. B. Humphrey, Proprietor.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome. Information cheerfully given. T. T. Miller, Hollister, California.

Berylwood Stock Farm—Breeders of registered Holstein cattle and Duroc-Jersey swine. Every cow an A. R. O. and T. B. tested. Bulls and females for sale. J. W. Snodgrass, Hueneme, California.

Yearly Record Holsteins—Bulls from 500 to 1,000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

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Some Choice registered Holstein heifers and bulls of serviceable age for sale. J. W. Scudder. Escalon, California.

Three Cows and Two Heifers registered Jerseys $750. Terms. J. R. Carhart, Fullerton, California.

Winsor Ranch Jerseys—Bull calves with production behind them, at reasonable prices. BONITA, CALIFORNIA.

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For Sale—12 inch Krogh Cent. Pump, 25 H. P. Gas Engine, Pipe and Fittings, 16 inch Jackson, Double Suction with Pipe and Fittings. Lisle-Powers Well Drilling and Boring Outfit complete, all in fine condition. Must sell. Ada V. Barr, 735 4th Street, Woodland, California.

For Sale 40 rebuilt windmills, tanks, pumps, steel towers, cylinders, rods. Special new 1,000-gallon galv. tanks, $39.25; 2,000, $53.25; 3-in. irrigating pipe, $14.75; 4-in., $18.75; also used pipe. Why pay more? Demmitt, 120 N. Main, L. A.

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Toggenburg Buck Kid, three months old, son of grand champion prize winner of Pasadena goat show and five quart Toggenburg doe, a beauty. For sale very reasonable. H. L. Huston, Encanto, California.

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Large Number of Choice Bronze Toms and hens, also geese and herding Collie Dogs. Shipped from St. Helena and San Miguel. John G. Mee, San Miguel.

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Avocados—I have a limited number of fine trees nicely balled and well established from two to six feet in height which I am offering for from two to three and a half dollars each. Fuerte, Linda, Puebla, Sharpless, Ganter and No. 2. Yearling Valencia trees 75c balled and guaranteed. A. R. Rideout, Rideout Heights, Whittier, California.

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Avocado Trees—Get your orders in now. Mathers Avocado Nursery, Ventura and Rose Streets, Pasadena, P. O. Box 585. Phone Colorado 6044.

For Sale—5000 Avocado Seedlings. Dr. Stonebrook's Avocado Nursery, 15 N. Raymond Ave., Pasadena, California.

Citrus Nurseries, Murphy Oil Company, East Whittier California. Selected stock for sale; inspection invited.

DUROC-JERSEYS

Weanling Boars and Gilts by Pathfinder Wonder (Great Wonder I Am ex an 800 lb. Pathfinder sow) for $10 each. Bred sows and gilts. Derryfield Farm, Capital National Bank Bldg., Sacramento, California

Greenwood Farm Durocs — Moderate prices on bred gilts and weanling boars. Select individuals. Most popular breeding. H. C. Witherow, Mgr., Live Oak, Sutter County, California.

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Winsor Ranch Durocs—The best of stock at reasonable prices. BONITA, CALIFORNIA.

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Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Calac Orchards, Martinez, California.

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Lendorris Ranch Polands — Big type Poland Chinas of all ages for sale. The kind that makes weight quickly. Weanling boars and gilts sired by Lendorris Liberator out of Lendorris Liberty Bond sows. Now ready for delivery. W. L. Haag & Son, Hanford, California.

Registered Poland Chinas. 40 tried brood sows; 40 gilts. Some choice young boars all at reduced prices to move at once. These Polands are as good as can be had anywhere at any price. W. D. Trewhitt, Route B Box 47, Hanford, Calif.

Big Boned Poland Chinas—Bred gilts and young boars priced to sell at once. Young stock, either sex, for sale at all times, Bassett Bros., Hanford, California.

Bred Poland-China Gilts sired by California Gerstdale and bred to Some Price. $75.00 and up. J. A. Crawshaw, Hanford, California

RABBITS

Pedigreed Flemish Giants — No fancy prices. Maud Beeching, 1578 W. 46th St., Los Angeles.

Guinea Pigs Wanted—Highest price paid. Smith, Route 1, Box 139, Pasadena.

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Shorthorns, Shropshires, Berkshires, Shetland Ponies, Bronze Turkeys. W. P. Rocks, Butte City Ranch, Box C, Butte City, Glenn County, California

PAINT PRESERVES AND BEAUTIFIES

(Continued from Page 77.)

boots soon wear off the paint. What is the best and cheapest covering which will stand the wear and how should it be applied?"

2. "My living room floor was 'oiled' some years ago but is now worn to the wood. How may I restore it? I wish natural wood finish. Where wood is worn down to grain should I use filler in order to make the wearing coat last longer?"

3. "Where old floor is now too dark is there any way of lightening it other than to paint? That is, is it possible to lighten a natural wood finish?"

4. "Should a different paint be used for outside porch floor and steps than for inside floors?"

5. "Where floor has opened up with wide cracks is its restoration from the use of paint or filler possible or must it be relaid?"

Chicago Varnish Works Answers

1. There is nothing that we know of except to keep on repainting the floor of the back porch unless you put linoleum or some metal over the wood.

2. Remove all finish with paint and varnish remover. Bleach out the dark spots with oxalic acid and be sure that you remove the oxalic acid after the wood is bleached, with clean water. When wood is thoroughly dry, fill with natural paste wood filler and apply two or three coats of good floor varnish. (Paste fillers to be used on open grain hardwoods only; closed grain woods require no filler.)

3. Same process to apply on this question as on No. 2.

4. Many manufacturers make porch and steps paint especially adapted for outside work and also have an inside floor paint. Inside floor paint dries much quicker than the outside.

5. Manufacturers make a crack and crevice sealer which dries very hard. Depends entirely on how wide the cracks are as to whether this material can be used successfully. The wider the crack, the less successful you will be in having this matter stay in place.

The Sherwin-Williams Company

1. S.-W. porch and deck paint is the product we recommend for porch floors subjected to rough usage. The surface to be painted should be free from grease and soot, and perfectly dry. If the job has been previously painted and is peeling, scaling off or cracking, burn or scrape off all the old paint. If this is not done the new paint cannot adhere.

2. If the "oiled" floor has been worn down to the wood, it can be thoroughly scrubbed first. Then a stain in the color desired should be applied and if the wood is open grain, a paste filler should follow. An oil stain should be used in this instance. After the filler has thoroughly dried, follow with two or three coats of a good floor varnish.

3. There are two ways in which a floor may be made lighter. You can either have it scraped and finished as for a new floor, that is, stained, filled if open grain wood, and varnished. The simpler method would be to apply two coats of ground color and then follow with a varnish stain such as our Floorlac.

4. Porch and deck paint is recommended for outside porch floors and steps. Floorlac or S.-W. inside floor paint should be used for inside floors.

5. S.-W. crack and seam filler will satisfactorily take care of wide cracks in a floor which is to be painted.

National Lead Company

1. Ordinary paint is not sufficiently hard for the finishing coat for the floors of rooms and porches which are subjected to excessive wear caused by people continually walking on them. Paint for priming and undercoats for this purpose may be made the same as for regular wood painting, but the finishing coat must be specially prepared. Excellent results may be obtained by first applying a finishing coat of paint made with white lead in oil thinned down with Dutch Boy Flatting Oil or turpentine instead of linseed oil, and then covering it with a coat of floor or porch varnish after the white lead paint has dried. The finishing coat may also be made by adding some floor or porch varnish to the white lead paint. An excellent formula for this purpose would be as follows: 100 pounds white lead in oil, 1 gallon raw linseed oil, ½ gallon floor varnish, 1½ gallons turpentine, ½ pint drier. Such a paint will dry quite hard and resist wear, but we would offer the caution that only the best floor varnish should be used. This formula may, of course, be tinted to any desired color by adding the proper tinting materials.

2. The method of restoration of an old wood floor, which has been oiled, depends on whether the wood is soft or hard. If the wood is soft and is old and soiled, it must first be washed

clean with soap and water, and if badly discolored should then be bleached by applying a dilute solution of oxalic acid in water to the discolored spots. After the wood has been bleached it should again be washed to remove the oxalic acid, and when dry should be sandpapered until it is smooth. A coat of shellac should then be applied to fill up the uneven places, and after the shellac is dry the surface should again be sandpapered. If a stain is desired it may then be put on over the shellac, and when the stain is dry, from one to three coats of floor varnish will give the finish. If the floor is hard wood, it should be cleaned and bleached, as already described, and after being sandpapered should first have a coat of regular wood filler applied. The filler is prepared by thinning down the paste filler with turpentine. This should be well brushed into all of the pores of the wood, and if a stain is desired, it may be added to the filler. After the filler is dry a coat of shellac should be applied and then the coats of finishing varnish.

3. This question has already been answered under No. 2, except to say that if the floor is discolored all over or is darker than desired, all of the old varnish should first be removed with a strong solution of soda in water. The soda solution is applied to the varnish and the loose varnish and soda are then thoroughly washed off. When perfectly dry any dark spots may be bleached with oxalic acid and the floor may then be finished as described in the reply to question No. 2.

4. Porch floors which are to be exposed to the weather must withstand the elements as well as the wear. The recommendations made in the reply to question No. 1 also apply to this question. Where varnishes are used it may be found that some of them which withstand the wear and give excellent results will not be suitable for porches. Only the best floor or deck varnishes should be used for the outside work.

5. Cracks which have opened in an old floor may often be filled with putty. The floor should first be cleaned thoroughly with soap and water. When the floor is dry a thin coat of priming paint should be applied to the cracks, and they should then be filled with putty. The best putty for this purpose is made by adding a small amount of Japan drier and a small amount of rubbing varnish to paste white lead, and then stiffening the paste with dry whiting to thick putty consistency. This putty should be rubbed well into the cracks until they are completely filled. After the putty is dry and hard it should be sandpapered off smooth, the entire floor being gone over until the surface is in good condition. After the floor has been sandpapered, paint may be applied in the usual manner.

Demanding Justice in Freight Rates

URGENT and persistent appeals for relief from the oppressive and prohibitive freight rates on California vegetables continue unabated from all vegetable growing sections of the state. Growers are unable to bear the extortionate charges now made in shipping their products to their usual destinations and the excessive rates so restrict the marketing territory where the California products find their outlet that returns commensurate with the cost of production are not secured.

The grave situation which now exists is causing widespread anxiety and demanding the attention of extensive growers, growers organizations, farm bureaus, marketing agencies, chambers of commerce, banking institutions, agricultural periodicals and daily newspapers from the Mexican boundary northward. Protests in telegrams and letters have been sent to Washington and Chicago in great numbers. Resolutions have been adopted denouncing the imposition of these onerous rates by the interstate commerce commission and the greed of the carriers in exacting them. Facts, figures and competent testimony have been fully presented to demonstrate conclusively that growers have sustained heavy losses shipping under these rates. The governor of the state has telegraphed the president of the United States at length, emphatically requesting the assistance of the chief executive in this urgent matter. Men prominent in the industry have made transcontinental trips to present the subject personally before the proper officials. Meetings are being held in the northern, central and southern parts of the state to discuss the question by growers. In fact, nothing is being left undone which may tend to bring relief from the appalling situation, and these efforts must continue unceasingly until results are obtained.

The consequences of the high freight rates are truly alarming. Already the acreage of cantaloupes in this portion of the state has been reduced more than 50 per cent. There have also been big reductions in the acreage of onions and celery in the Delta, amounting to 20 per cent and 33 per cent, respectively. And these are only the beginning. Much greater reductions in these acreages are threatened and unless material cuts in rates are made the acreage of cabbage, spinach, early onions and early potatoes will probably be only a shadow of what it was formerly. Action must be had promptly to save these industries. Millions of dollars worth of crops and property of still greater value are involved.

The importance of the matter to the general public of the state cannot be overestimated. Between 40,000 and 50,000 cars of vegetables are the normal annual shipments of the state. Some of the richest and most intensively cultivated lands in the state are devoted to the culture of these products, and in some sections entire communities are dependent largely upon the revenue which they return. That the question of freight rates at this critical juncture has a far reaching effect upon the general prosperity cannot be denied.

At a meeting in Los Angeles, July 5, of members and directors of the San Fernando Valley Potato Growers Association, San Gabriel Valley Potato Growers Association, San Bernardino Valley Potato Growers Association and Shafter Potato Growers Association, the following resolution was unanimously adopted:

Whereas, the interstate commerce commission placed in effect last August a horizontal increase of 33 1/3 per cent in freight rates on transcontinental business, which established a prohibitive rate on California vegetables and has already caused enormous losses to the vegetable growers of this state, and

Whereas, horizontal increases in freight rates are unsound and fundamentally wrong in principle, and especially disastrous in their effect on bulky and low priced commodities such as vegetables, particularly in the case of California vegetables which are shipped over long distances, and

Whereas, entire crops of California vegetables have, during the present season, been sold below cost of production, and our potato crop is now being sold below cost of production, due to unfair and prohibitive freight rates which unduly restrict our available marketing territory, and

Whereas, to the losses sustained by California vegetable growers must be added the much greater losses involved in depreciation of value of lands used for vegetable production throughout the state, which losses are directly due to the same cause, and

Whereas, the truly appalling condition outlined has been brought to the attention of the interstate commerce commission and the carriers, and no relief obtained except a slight reduction in rates on our products shipped to territory east of Chicago, effective only to December 31, which, besides being inadequate, is confined almost exclusively to cantaloupes, there being practically no vegetable shipments from California points to said territory at present, nor will there be for several months, which is well known to the carriers and the interstate commerce commission, and

Whereas, the interstate commerce commission in the face of overwhelming evidence of losses sustained and being sustained by California vegetable growers, takes the position it cannot grant any relief except through the interminable delays of formal proceedings, and at the same time intimates in a letter dated June 24 last, that vegetables are being sold at a profit to growers, which is absolutely false, as far as California vegetables are concerned, and

Whereas, our appeal to the carriers through the California Vegetable Growers Association, for relief in rates on potatoes shipped to territory west of Chicago was denied last week, although supported by indisputable evidence that these potatoes are being sold below cost of production, and

Whereas, the reason given by the carriers for denying our appeal is that their total revenues are not sufficient to cover operating expenses, and to provide earnings authorized by congress, and

Whereas, the California vegetable industry is compelled by the exaction of these prohibitive rates, to pay an undue proportion of the total revenue of carriers, in order to make up for the deficit caused by reduction of tonnage of other commodities, and

Whereas, carriers, through published statements of their executives and other propaganda, are endeavoring to create the impression that increased sihpments of California vegetables indicate a prosperous condition of their industry, although knowing at the same time that it is not true, but on the contrary, that these vegetables have been and are being sold below cost of production, and that these shipments are made because they offered some margin as between market price and cost of harvesting and shipping, and thereby to a slight extent tend to reduce the growers' loss on production cost; therefore be it

Resolved: That we denounce the action of the interstate commerce commission in imposing these rates on this industry, which are destructive and are not only clearly wrongful to California vegetable growers, but are also contrary to constitutional limitation of the interstate commerce commission or other regulatory bodies, which are prohibited under the constitution from imposing rates which tend to confiscate private property, the result of these rates being confiscatory in its effect on the property of said growers; and be it further

Resolved: That we denounce the greed of carriers in holding on to the advantage given them by the interstate commerce commission through an improper use of its authority by the imposition of these prohibitive rates on this industry, while all the time carriers have positive knowledge that while they are exacting payment of these rates by growers, the latter are selling their products at a loss, and also that to this loss must be added the depreciation of value of vegetable lands throughout California, also directly chargeable to these unfair rates, thereby involving the welfare of the state, and be it further

Resolved: That we demand that the interstate commerce commission and carriers, who jointly are responsible for these deplorable conditions, take immediate action to suspend the horizontal increase in rates on California vegetables placed in effect last August, because such increase was fundamentally wrong and contrary to constitutional limitation, and because this industry having already suffered irretrievable losses, cannot wait on the slow process of formal proceedings to obtain relief from the intolerable and gross injustice perpetrated against it, which relief has already been too long delayed; and be it further

Resolved: That after the suspension of the horizontal increase complained of an investigation should be made of the question of freight rates on California vegetables, with a view to determining what rates are fair and equitable to carriers and growers, and that such rates should then be established. In other words, instead of the haphazard method of a horizontal increase in these rates, with its inevitable train of disasters, the method of establishing rates should be guided by fairness and intelligence, both of which characteristics are entirely lacking in the present rate structure.

VEGETATION IN HOT CLIMATES

Soil productiveness in southern Italy is a question of climate which is particularly hostile, through its inconstancy, to green crops, rather than a matter of soil fertility which sometimes is all that could be desired. Generous manuring. which in the northern Italian districts largely increases the yield, may cause a decrease in the south in a dry year. The application of fertilizers containing nitrogen in a mineral form may in certain years aggravate the consequences of drouth and of excessive heat, etc., by causing the drooping and drying up of the aerial organs of the plant ("wilt" of the American agriculturists).

The practices which have brought wealth to the northern Italian districts cannot be generalized in the south where such unfavorable and uncertain conditions prevail; the question is to find out new and suitable methods, but the problem is not yet solved and in the majority of cases no initiative has yet been taken.—International Review, Rome.

Thirty cents an hour with ten hour day and maximum of ten cents a box for piece work were established as wage scale for farm and field labor in Alameda County at a meeting of representative agriculturists last week.

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Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Alien Poll Tax

Are aliens who have taken out their first papers required to register under the alien poll tax act?—Subscriber, Fresno.

Undoubtedly such persons are not only required to register but to pay the tax. They are aliens until by the judgment of the court they may be admitted to citizenship. It may be that the application for naturalization may for some reason be rejected.

Hours and Wages for Farm Labor

How many hours per day or week may a rancher require his men to work? Is there any minimum wage for the argicultural workman?—Subscriber, Fresno.

The law has seemed to consider that the man can take care of himself in the making of a contract for labor and has therefore confined itself in the regulation of hours of labor and minimum wage to women and children.

Option to Purchase

An agent procured a written option for 30 days for the purchase of a piece of real property. He has raised the price and turned the property over to another agent to sell. Did he have a right to do this?—Subscriber, Burbank.

An option to purchase property is a contract made for a consideration whereby the owner agrees to sell the property at a certain price at any time during the period of the option to the party procuring such option, or his assignee. There is an absence of any requirement to pay that distinguishes this contract from one for the purchase of the property. If the party who has procured the option decides to take advantage of it and complies with its terms within the period, the owner may be compelled by an action in specific performance to comply with his agreement. It matters not, of course, what, if any, additional price the holder of the option may be able to obtain from some third party. If the bargain which the owner made with the holder is performed, such owner should be satisfied.

Estate to Wife and Child

A few years ago I deeded land to my son. Later he married and died, leaving a wife and child. To how much of this land is the wife entitled? How much should go to the son? Have I any right to it?—Subscriber, Turlock.

If the decedent leaves a surviving wife and one child the separate property goes in equal parts to them.

Contract

My married son started to purchase land on contract, but at the time of his death he had not made any of the payments on the principal and only a portion on the interest and taxes. Can his widow compel me to proceed with the contract?—Subscriber, Turlock.

The death of the son makes no difference with respect to the rights of the vendor. If the terms of the contract have not been fulfilled and by such terms forfeiture is provided in case of non-fulfillment the vendor can justly refuse to complete the contract. If the contract is recorded he would be entitled to bring suit against the administrator of the estate and to rescind the contract and quiet title to the land.

Wife's Property

At my husband's death in the east I was left certain property. I have since married. If I purchase land in California and have the deed made in my name only what happens to the land at my death? I have children by a first marriage; so has my husband; none by the present marriage.—Subscriber, San Diego.

This property would be the separate property of the wife and in case the title is held in her sole name there is a presumption that it is her separate property, so that she can sell or encumber this property without the signature of the husband and can by will convey it as she sees fit in case of death. If, however, the wife die without will, the husband would be entitled to one-third in case she has more than one child or one-half in case she has one child.

Alley Vacated

An alley running north of my place has been vacated. The parties who own the property on the other side of the street claim that the alley is all theirs. Is this correct?—Subscriber, Los Angeles.

An alley or street is usually a mere easement over property granted for purposes of travel. In case of vacation of the alley the public releases to the original owner the right acquired for alley purposes. If the alley was originally made entirely over the property of one party, then upon its vacation it would return to that party, so that it would be necessary to look up the record to ascertain whether the contention of the parties in this case is correct or not. Usually, where lands are sold, bounded by a street, and there is no other description, in case of a vacation of a street the law presumes that the property owner takes to the center of the street, but if the street was taken from one single individual then the whole of the street would return to the party from whom the property was taken.

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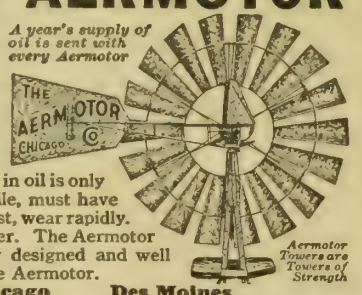

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Don't Slaughter the Innocents

By Jean A. Koethen

DEAR HELEN: I had to laugh, and I almost cried, too, over your letter. I laughed because your experience was so exactly like my own first try at raising 50 chicks without a mother. I could have cried because it is all so tragic. When you have once watched a thrifty little flock drop off by ones and twos, rushing out every morning in a panic to see what new devastation the night has wrought, and putting them away at night with dark misgivings, you don't forget the pain and disappointment of it.

I suppose every successful poultrywoman has some such experience to start with, but that doesn't make it less tragic. We have to learn, and we don't learn easily, but once the lesson is learned it is learned for good and all. You will never again try to raise fifty chicks and lose them all, I promise you that.

The beginner is quite apt to start out with the idea that chicks are predisposed to bowel trouble. We read about white darrhoea and coccidiosis till we get the idea they are real bogies hanging around our chick yard ready to grab our chicks. As a matter of fact, raising chicks is very like driving a car. If anything happens it is your fault. Just write that on a slip of paper and stick it in your mirror. "If my chicks die, I am to blame."

What did you do? Well, for one thing, you did not feed them properly. Rolled oats, bran and buttermilk are all right for the first day or so, but the chick's digestive apparatus is made for grinding hard grain, and if it is given no hard grain to grind, the muscles remain as soft and flabby as they were the day it came from the shell. The best feeders now begin with grain; little seeds like millet cracked wheat, steel cut oats, and such things as a chick can pick up easily. After it has learned to pick up these little seeds, it is given a little bran, either mixed with the grain or in a separate tray or trough, and after the sixth or seventh day a regular chick mash. The grain, which at first was fed on a tray, is now thrown in the litter of dry alfalfa leaves, and the chicks have a busy time digging it out.

But lack of proper feed was the smallest item in your list of mistakes, as it was in mine. Do you remember, when your baby came, what great pains the nurse took to bundle it up and keep the cold air from striking even its little head? "It's used to 99 degrees of heat, "she said, "and we must acclimate it gradually." The chick that is just out of the shell is used to 103 degrees of heat, and if you put it in a temperature 10 or 15 degrees colder there is bound to be trouble. You never thought of that, did you? Neither did I, when I bought my first 50 chicks and put them in a fireless brooder big enough to hold 200, right out in the wind on an open hillside. Chicks have to get used to the air, and they can't do it in a minute. It takes four days at best, and a good deal longer if they are brooder raised.

Your letter did not say how you hovered your chicks, but I know just as well as if I had seen them that you did not keep them warm enough, and that those chicks died of chill. Chicks that are not warm cannot digest their food, and where there is indigestion, with little chicks, there is darrhoea. If a human baby is chilled it has colic. When a chick is chilled it has diarrhoea.

There are all sorts of ways of keeping baby chicks warm. If you have a brooder it is easy, though you must watch the temperature very closely. The fact that the thermometer says 99 doesn't prove that the chicks are comfortable. You can only tell by watching them. If they look perfectly comfortable, lying quietly on the floor of the brooder, you may know they are all right. If they stand around leaning against one another, or keep up a dismal peeping they are cold. The first two days they should be kept under the hover just about all the time

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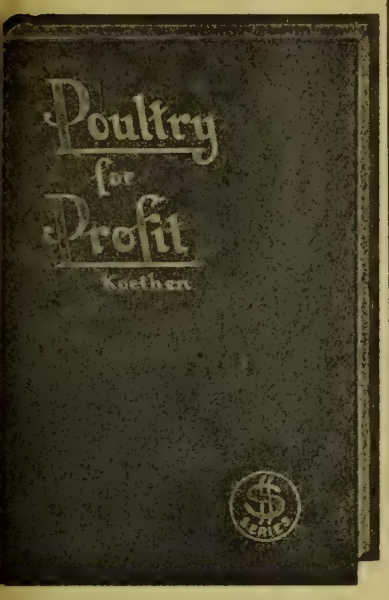

Making use of information gathered from experienced poultry writers who have been guided by their practical experiences will always result in profit from poultry.

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except when they are eating. Like a human baby, the baby chick requires first of all rest and warmth.

Oh, there are so many ways in which a chick and a baby are alike! They must be kept warm, they must have simple food and enough of it. By the way, don't let anybody scare you into not feeding your chicks all they want. Now and then somebody bobs up and says overfeeding kills baby chicks. I don't believe it. Chicks have more sense than to overeat. In this they are different from babies. I have always kept mash and chick feed before mine after they learned to eat, and they never die of anything but accidents. When they have had enough they stop eating. You might kill them by feeding too soon after hatching, or by feeding too much beef scrap or corn meal in the beginning, but you won't kill them by overfeeding.

Then a chick is like a baby in its need of exercise. The first four days warmth is its first imperative need. After that time it must get out and run. Fresh air it must have night and day. A clean brooder to sleep in, clean ground to run on, clean litter to scratch in, clean water to drink.

One more word about keeping chicks warm and I am through. If you have no brooder you can do it with a jug or jar of hot water, or with a brick, or just with sunshine alone. Fifty chicks in a box 18 inches square will keep one another warm very nicely if they are in a room that is kept fairly warm by sun or stove. Just keep your mind on it and you will always be able to devise some way of heating even if you do lack the common conveniences. I have known of women who kept them in the kitchen the first week, and that's about the hardest way there is. When you really understand the need, there's always a way of working things out.

I hope you will do better next time, and I know you will. With all kinds of love.—Aunt Susie.

Poultry Queries

(Conducted by Jean A. Koethen)

Price of Eggs

Can you tell me the average wholesale quotation on eggs from 1913 to 1920; also the average cost of a hen per year for the same period?—Subscriber, Modesto.

According to the Poultry Producers' statistical table, which begins with 1915, the average price of eggs for 1915 was 28.97 cents; 1916, 31.20; 1917, 35.06; 1918, 51.61; 1919, 54.64; 1920, 55.83. The cost of a hen per year for 1915 was $2.80; 1916, $2.86; 1917, no figures given; 1918, $3.80; 1919, $3.93; 1920, $4.23. I do not know where the figures can be found for 1913 and 1914.

Sick Turkeys

When my little turkeys are about three weeks old they become droopy, do not eat, and soon lie down and die. Some have convulsions, some, but not all, have foamy droppings. On dissecting them I find liver and intestines normal. They have no lice. I have been starting them on egg and changing to curd in four or five days. They also have a mash, charcoal, grit and alfalfa range.—Subscriber, Brawley.

The best nursery ration for poults is a mixture of hard boiled egg, stale bread or rolled oats and fine cut alfalfa or onion. Make the greens half the mixture and the cereal and egg in equal parts the other half, and sprinkle fine sand or chick grit over each meal for the first three weeks. The most successful breeders continue this ration, without much change, for five or six weeks, feeding three or four times a day, then change to bran or mash and barley. Possibly feeding egg alone at the start upset the digestion of your birds; possibly they were chilled; possibly you overfed or underfed. The digestion of a very young turkey is so easily disturbed it is very hard to strike the happy mean. When poults die as suddenly and as early as this chill is most likely to be the cause.

CALIFORNIA FARM BUREAU EGG LAYING CONTEST

Santa Cruz: Report for ten days ending July 10, 1921:

The flock production for the ten days averaged 60.8 per cent. Alex. Stewart's pen led with a score for his ten White Leghorns of 81 eggs. This establishes a new record for July laying. The high pens were as follows: Alex. Stewart, Santa Cruz, 81 eggs; W. J. Neef, Santa Cruz, 78; Geo. Gray, Santa Cruz, 77; S. L. Gibson, Santa Cruz, 76; C. E. Hyde, Seabright, 76; Geo. Wood, Santa Cruz, 75; W. A. Ford, Umatilla, Oregon, 73; Mrs. H. C. Kleinsmith, Hoff, Oregon, 73; D. B. Walls, Petaluma, 73; Gibson, 73; Walls, 72; Warren Wood, Santa Cruz, 72; J. S. Conrado, Santa Cruz, 72.

All pens above are single comb White Leghorns except Mrs. Kleinsmith's which are Barred Rocks.

STATE FAIR PREMIUM LIST

Director Mitchell of the poultry division of the state fair to be held in Sacramento, September 3-11, is mailing the Poultry, Pigeon and Pet Stock Premium List. Judges announced are, in the poultry classes: Robert V. Moore and Charles G. Hinds; pigeons, Wm. J. Head and Robert V. Moore; pet stock, Lewis H. Salisbury. Assistants will be Arthur J. Dixon in poultry; J. G. Mee, turkeys and water fowls; F. M. Washburn, pigeons; Irwin Weisner, rabbits.

CLEANING AND WASHING EGGS

J. H. Barber of the Poultry Producers of Central California writes:

"Eggs with only small spots of dirt on them may be cleaned very effectively by rubbing with steel wool or emery cloth of medium grade. This dry cleaning is preferable to washing. In washing eggs they should not be left soaking in water any longer than is necessary to soften hard dirt. Some use washing powder or sal soda, and there is no objection to this if the eggs are not left soaking in it, and if they are thoroughly rinsed after washing. Ordinary baking soda is better still and will remove light stains quite effectively if rubbed on dry with a damp cloth. We use this in washing on a large scale at our Petaluma warehouse. One of the most important things about washing eggs is to change the water frequently and to rinse all eggs in clear cold water until all trace of the washing water has been removed from them. Do not use hot water either for washing or rinsing, as it will coagulate the albumen of the eggs and make them grade as 'baker eggs.'

"The things that most of all cause washed eggs to spoil are leaving them to soak in dirty water and neglecting to rinse off the washing water. Remember that the shell of an egg is porous, and especially so after the albuminous covering has been removed by washing. If dirty water is allowed to soak through the shell of an egg it will quickly infect it with decay germs which will cause it to spoil rapidly.

Keep Eggs Clean

"Please remember also that washed eggs, when there are many of them on the market, have to be sold for a lower price than unwashed eggs of the same grade. Therefore, while the association will return the same average price on all clean eggs, whether washed or unwashed, if we have many washed eggs they will bring down the average price on the entire grade. The best thing is to have as few eggs to wash as possible, which means to give careful attention to the matter of clean nests and clean floors so as to have very few soiled eggs that will have to be washed.

Pack Washed Eggs Separately

"If you have not enough to fill a case they can be packed in one-half of the case, or if there is less than 15 dozen pack them in the top fillers in one side of a case. Mark them with a separate inside tag so that there will be no mistake about them; also specify them on the outside case tag.

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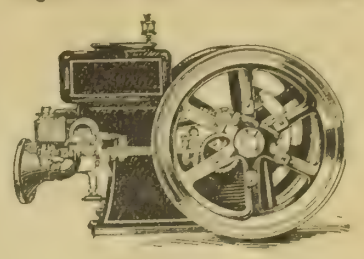

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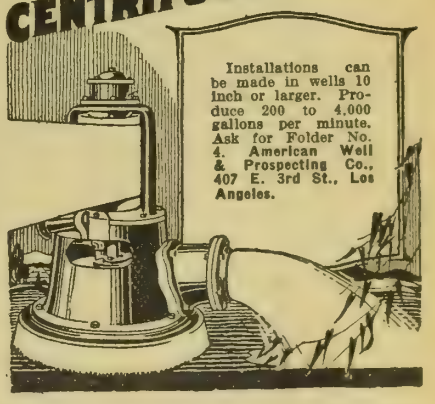

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Coulson Co.
PETALUMA, CAL.

Los Angeles Markets

Los Angeles, July 20, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price 44 cents.

July	13	14	15	16	18	19
'21 ...	43	..	44	..	44	44

CHEESE

Brokers' prices:
California flats, 22@24.

EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 37; case count, 35; pullets, 32; pewee pullets, 22.

July	13	14	15	16	18	19
'21 ...	36	..	37	..	37	37

POULTRY

Price to producers: Hens, 13@22; colored, 32; broilers, 25@27; roasters, 38; old roosters, 12; fryers, 30; ducks, old, 23; ducklings, Pekin, 3½ up, 30; others, 25; geese, 25; turkeys, live, young tom, 50; dr., 55; old, live, 40; dr., 44; hens, live 40; dr., 44; squabs, 45@47.
Belgian hares, live, 12@16; old 8.

LIVESTOCK

Los Angeles, July 19. — Weighed and delivered off cars without food or water:
Hogs, hard grain fed, 125 to 175 lbs., 11.00; 175 to 225 lbs., 11.50.
Cattle, on foot, gross weight, steers, good, 7; medium, 6½. Cows, good, 5½; medium, 5. Bulls and stags, 3@3½; calves, 125 to 150 lbs., 9.00; 175 to 225 lbs., 8.00.
Sheep: Ewes, 5.00@5.50; lambs, 8.50@9.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock July 19, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.
Potatoes: Supplies heavy, market steady. New stock: Wide range in prices, mostly 45@50; poorer, 35@40 per lug; No. 1 sacked per cwt. mostly 1.25@1.40; poorer, 1.00@1.10; bakers, 2.00@2.25 Sweets: Supplies increasing, market weaker. Locals: 12@14 per lb.
Onions: Supplies moderate, movement slow. Stocktons: Australian Browns, 90@1.00 sacked per cwt. Local: Whites, 80@85 per lug.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock July 19, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.
Beans: Supplies liberal, market weak. Kentucky Wonder mostly 3½@4; jobbing 3; Limas: Supplies light, market steady, 13@14, fancy 15, poorer 10 per lb.
Beets: Doz., 30@35; few 40.
Cabbage: Field crate mostly 2.50@2.75; poorer 2.25.
Carrots: Doz., mostly 30@35; few 40.
Celery: Supplies liberal, market steady, cr. 6.00@6.25; poorer, 5.50@5.75.
Corn: Supplies heavy, market weaker, local mostly 40@50; poorer, 30.
Cucumbers: Supplies liberal, market steady. Local: Lugs mostly 50@60.
Lettuce: Local field crate mostly 1.00; few best, 1.25; poorer, 75@90.
Peppers: Supplies moderate; market weak. Imperial Valley: Bells mostly 15@18; Chili 15@16; poorer 12@13.
Radishes: Supplies moderate, market steady, mostly 15 per dozen bunches.
Tomatoes: Supplies moderate, market weak. Local, 1.75; cr.; per lug 2.00@2.50, few 2.75; No. 2, 1.00@1.25; No. 3, 50@75.
Turnips: 30@35 per doz. bunches.

FRESH FRUITS

Apples: New stock: Supplies liberal, market steady, mostly 3@4, few fancy 5 per lb.; by the lug 1.00@1.25. Crabapples mostly 50@60; few 75 per lug.
Apricots: Supplies light, market firm, 4@6 per lb.
Blackberries: Supplies limited, market strong, 30 pint crate mostly 4.00@4.50.
Cantaloupes: Demand and movement light, market weaker, prices lower. Wide range in quality and condition. Standards mostly 2.00@2.50. Jobbing: Standards 1.75@1.85, few fancy 2.00, poorer 1.50. Casabas: Supplies liberal. Demand moderate, market weaker 2@2½ lb. Jobbing: 35.00 per ton.
Figs: Supplies moderate, market weaker. Northern: Flats Black Spanish mostly 90@1.00. Imperial Valley: San Pedros flats mostly 60@70. Locals: 15@20 lb.
Grapes: Supplies light, market weak. Per lb., Thompson Seedless and Malagas mostly 10@11.
Peaches: Supplies moderate, market steady, wide range in quality and condition. Lugs, various varieties, best 1.50@2.00; poorer 1.00; Early Rose, 1.25@2.00; few fy., 2.00@2.50; Strawberry Freestones, 1.25@1.50.
Plums: Supplies liberal, market steady. Santa Rosas mostly 4@5. Prunes: 4@5 per lb. Satsumas and Climax 4@4½ per pound.
Raspberries: Supplies light, market stronger. Cuthberts 3.75@4.00.
Strawberries: Supplies light, market steady. Per crate No. 1, 3.50@4.00, No. 2, 2.75@3.00.
Watermelons: Supplies liberal. Demand good, market stronger. Mostly 2½, few 3, poorer 1¾@2 per lb. Jobbing: Klondikes 50.00@55.00; other varieties 35.00@45.00 per ton; poorer, 25.00@30.00.

CITRUS FRUITS

Grapefruit: Supplies liberal, market firm. Local: per box, market pack 2.25@2.50, ordinary 2.00, special packed brands 3.00@4.00.
Lemons: Supplies light, market firm, demand good. Local: Packed box mostly 8.00, loose per box 4.00@5.00, lug boxes 1.25@1.50.
Oranges: Supplies liberal, market steady. Valencias, best brands, all sizes, 4.00, few 4.50; ordinary 2.50@3.50; loose pack 1.00@1.50.

HONEY

As reported by the Bureau of Markets:
Los Angeles: Supplies of White Sage, White Orange and Light Alfalfa, heavy. Light wire inquiry. Movement very slow, market steady, little change in prices. Carloads f. o. b. usual terms at loading points: White Orange new crop 12@12½; old crop 10@11; Light Amber Alfalfa old crop 5@6, new crop 5½@6½; White Sage 12@12½. Hawaiian, no sales reported. Beeswax: Market weak, very light demand. Dealers asking 30@33 for light and 24@26 for dark. Estimate of crop unchanged from last report. Sage and Orange crop very uneven, some places normal, others practically none. Exchange expects stronger market but other brokers expect weak and dull market.

GRAIN AND FEEDS

Grain Exch. price bid July 19:
Corn: Bulk No. 2, Yellow 1.62½.
Milo: Eastern bulk, 1.62½.
Barley: Carloads, 1.25.

HAY

Alfalfa Growers of California report prevailing prices f. o. b., Los Angeles:
No. 1 Dairy 19.00
Standard 15.00
Receipts in central markets showed further falling off for the week. Receipts of grain hay show same tendency; most of these deliveries represent shipments made on previous sales. Survey of supplies in hands of users in several of the principal dairy centers near the city shows average stock sufficient only for about a week's feeding. A small number of dealers and users in the central marketing districts have commenced laying in their winter supply, but the large majority are still buying for current wants only. The low prices of alfalfa will undoubtedly cut down the production during the balance of the season, especially in the districts where the high cost of water or transportation forces growers to restrict production.
Present ruinously low prices are not justified, considered from the standpoint of underlying conditions of production and consumption for the year, and still less so from the standpoint of cost of production; it is the present marketing situation, created partly by the general business conditions but mostly by lack of coordinated marketing on the part of unorganized growers, which is responsible for the present price situation.
Receipts light; no improvement in price or tone. Some dealers and users have commenced to stock up for fall and winter. Prices so low that growers in some sections would get practically nothing for their hay, after paying freight, baling, hauling, etc., if they were to sell in the central markets at present prices.
Quotations by Nichols - Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:
Tame Oats .....18.00@26.00
Barley .....16.00@24.00
Alfalfa, No. 1 Dairy 18.00
Standard 16.00
Straw .....10.00@13.00

San Francisco Markets

San Francisco, July 20, 1921.

Quotations made daily by San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

BUTTER

Dairy Exchange quotations July 19:
Extras Choice 37½
Dairy Exchange prices extras this week and year ago:

July	13	14	15	16	18	19
'21 ...	41½	41½	42½	..	42½	37½

Receipts week ending July 19, 2,373 centals.

CHEESE

Dairy Exchange quotations:
Jack, full cream, street prices....14½@16
Oregon Trips 20
Oregon, Y. A. 34
Oregon Trips 32
Cal. Flats 25
Cal. Y. A. 23

EGGS

The prices paid by wholesalers to producers are eight per cent less.
Dairy Exchange quotations, dozen including cases, July 19:
Extras 39½
Extra Firsts 40
Dirties No. 1 36
Extra Pullets 25
Undersized 24½

July	13	14	15	16	18	19
'21 ...	39	41½	42½	..	43½	39½

Receipts week ending July 19, 435,576 dozen.

POULTRY

Wholesale prices are:
Young chickens: Leghorns, 1 to 1¼ lbs., 28@30; 1½ to 1¾ lbs., 30; 2 lbs. and up, 38; heavy breeds, 1½ to 1¾ lbs., 30@33; 2 lbs. and up, 48@50. Staggy roosters, 20@25; old roosters, Leghorns, 15; do, heavy breeds, 18. Hens: Leghorns, large, 20; do, small to medium, 17@20; heavy breeds, 30@32.
Ducks: Young, 35 per lb., old, 25; geese, 25 per lb; turkeys live, 35; dressed, 45@50; Belgian hares live, 13@14; dressed, 18@20; squabs fancy, 45@48; do, common, 3.50 per doz.

LIVESTOCK

Western Meat Company prices are:
Cattle: Steers, No. 1, 6@6½; do, second quality, 5½@6.
Cows and Heifers: No. 1, 4½@5; do, second quality, 4@4½.
Calves: Light weight, 7@7½; heavy 5@6.
Sheep: Wethers, 3½@4; ewes, 2½@3.
Lambs: Milk, 6½@7.
Hogs: Hard, fat, grain-fed, weighing 125 to 200 lbs., 11; do, 200 to 250 lbs., 10; do, 250-350 lbs., 9; light sows, 9; heavy sows, 8.

California Farm Bureau Association reports:
1,500 cases foreign eggs, frozen.

No. Hogs	Ave. Wt.	Dock	Price
Tulare, July 12			
84	192	...	$10.60
90	178	...	10.55
91	170	...	10.40
88	173	...	10.30
26	229	...	10.10
41	147	50	10.10
4	317	20	9.10
11	104	...	9.10
6	378	110	7.10
Five cars, 35 consignors, $8,147.19.			
Visalia, July 13			
92	173	30	10.55
29	238	...	9.90
6	283	80	7.90
2	105	...	9.00
Two cars, 9 consignors, $2,514.01.			
Hanford, July 14			
80 Feeders	116	...	11.10
102	154	...	10.90
91	164	...	10.65
92	166	...	10.55
40	213	30	10.50
95	163	30	10.25
11	350	130	8.00
1	430	170	4.30

Six cars, 36 consignors, $8,743.84.
Total for the week, 13 cars, 80 consignors, $19,405.04.
These prices are net to the farmer, while the prices as quoted in the papers of other markets are f. o. b. the packers' yards.

POTATOES AND ONIONS

Wholesale prices:
Potatoes: Street prices: Old crop 1.25@2.00. New, Garnets, 1.25@1.50 per 100 lbs.; do, White, 1.50@1.75.
Onions: Australian brown, 35@50 per bag; new red, 75@1.00 bag; green, 1.50@1.75 bag.
Garlic: New, 6-8.

VEGETABLES

Wholesale selling price:
Artichokes: Crate, 3.00@12.00.
Beets: 1.75@2.00 per sack.
Beans: String, 6@9; poor quality, 1.00 sack.
Carrots: Sk., 1.25@1.50.
Celery: New, 8.00@9.00 cr.
Corn: Alameda, 6.25@7.50 per crate of about 9 dozen ears; 5.25@6.00 per sack.
Cucumbers: 25@50 lug; English 2.00.
Eggplant: Lb., 10.
Okra: 8@12½ lb.
Peas: Lb., 5@7; fcy., 7; sk., 1.00.
Peppers: Bells, 10@13; Chili, 15@20.
Squash: Lug, 1.50@2.50.
Spinach: Lb., 2@4.
Tomatoes: Merced, 1.25@1.50 box, 2.50 lug; No. 2, do, as low as 1.00; Los Angeles, 2.50@3.00; Stockton, 2.50@3.00 lug; No. 2, 1.00@1.50.

FRESH FRUITS

Apples: New crop white Astrakhans, 50@75 per small lug; do, reds, 50@75 per lug box; fancy Gravenstein, 75@1.50.
Apricots: 1.00@1.25 per 4 basket cr.; 60@1.00 per lug; 3@5 lb.; fancy 6.
Avocados: California, doz., 3.00@6.00.
Bananas: Lb., 8½@10.
Cantaloupes: Standard, 1.75@2.25; do, Turlock, 2.75@3.00; ponies, 1.50@1.90; do, Turlock, 1.75@2.00; flats, 50@75; Honey Dew, 1.25@1.50 per crate; flats, 75@1.00; casabas, 1.75@2.50.
Cherries: Tartarians, bulk, 5@7 per lb., 1.00@1.25 per drawer; soft black, 4@6 per lb.; Bings, 17½@20 per lb.; Santa Cruz, 11@12; Royal Anne, 7@10 lb., 75@1.25 drawer.
Currants: 1.15@1.30 per drawer; 8.00@9.00 per chest.
Figs: Black, single layer, 40@65; double, 75@1.00.
Gooseberries: 7@8 lb.; English, 15 lb.
Huckleberries: 20@25 lb.
Loganberries: Red, 7.00 per chest; 35 per drawer; do, black, 20@30.
Loquats: 6@7.
Peaches: 1.00@1.75 cr.; 2.00@2.25 lug; extra fancy, 4.00.
Pears: Bartlett, 75@1.00.
Plums: 1.50@2.00; fcy., 2.25.
Raspberries: 60@75 per drawer; 12.00 chest.
Strawberries: Peninsula and Watsonville, 50@70, some higher; Salinas, 1.20@1.60 per crate; Watsonville, 1.00@1.25 crate, according to quality.
Watermelons: 2@3 per lb.

CITRUS

Valencias, 3.50@4.75 box. Lemons, 8.00@9.50 per box; Lemonettes, 3.00@4.25; grapefruit, 2.50@4.00.

BEANS

Below California Bean Growers Association shippers prices choice recleaned:
Large Whites 3.70
Small Whites 3.70
Pinks 6.50
Mexican Reds 8.00
Red Kidney 9 75
Henderson Bush 4.30
Cranberries 5.90
Bayos 10.75
Blackeyes 8.00

HAY AND FEED

Alfalfa Growers of California state that prevailing prices f. o. b. S. F. are:
No. 1 Dairy.....16.00
Standard 14.00
Under date of July 16, A. W. Scott Co. says:
Receipts at San Francisco, 1,539 tons. Demand has been better; several large transactions in the interior reported. Prices, however, have been so disappointing and low that it seems as though the bottom reached. The government bought here a large export order during the week, but the competition of Oregon and Washington and their immense surplus of hay forced California dealers to sell at prices far below the cost of production. Alfalfa is dragging, with practically no turnover. Mill feeds of all kinds have been advanced.
We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers charges of switching, cartage, commission and handling expenses must be added according to conditions).
Wheat Hay, fancy.....15.00@18.0
Wheat Hay, fair grade.....13.00@15.0
Tame Oat Hay .....12.00@15.0
Wild Oat Hay, new crop.....10.00@12.0
Barley Hay .....10.00@12.0
Alfalfa Hay, new 2nd cutting 12.00@14.0
Alfalfa Hay, new first cutting 9.00@11.0
Stock Hay .....8.00@10.0
Barley, Ground .....31.00@33.0
Barley, Rolled .....27.00@28.0
Oats, Rolled Feed.....32.00@35.0
Bran and Millrun .....33.00@35.0
Middlings .....46.00@49.0
Linseed Meal .....36.00@38.0
Coco Meal .....22.00@25.0
Alfalfa Meal .....22.00@24.0
Cottonseed Meal .....35.00@40.0
Sugar Beet Pulp..... 32.0
Molasses, Tanks 21.0
Molasses, Bbl. 25.0
Milo .....40.00@45.0
Corn Meal and Cracked Corn..40.00@43.0
Scratch Feed .....46.00@48.0

GRAIN

Wheat: Milling, 1.90@2.00; feed, 1.90@2.00.
Barley: Feed, 1.15@1.25; shipping, 1.30@1.40.
Oats: Red Feed, 1.25@1.35.
Corn: California yellow, 1.55@1.60 white Egyptian, 2.20@2.30 per cental; California red milo, 2.00@2.10; Eastern red milo, 1.85@1.95; Eastern kafir, 1.75@1.80.

Citrus Markets

Los Angeles, July 20, 1921.

Many growers are anxious for a cleanup and shipments of oranges have been rather heavy. This has resulted in a rather easy tone of the market. About 100 carloads daily are going forward at this time. Orchards are now safely by the June drop and promise is made for exceptionally good production.
Lemons are still commanding at least occasional spectacular prices. The weather has been favorable to heavy sales. F. o. b. quotations are now around $8. Foreigns in sight are still above the 100,000 box mark.

Shipments

Shipments of citrus fruits to date since November 1, 1920, Southern California: Oranges, 31,391 cars; lemons, 8,887; total, 40,278. To same date last season: Oranges, 25,133; lemons, 6,317; total, 31,450. From Central California to date this season: Oranges, 6,632; lemons, 211; total, 6,843. To same date last season: Oranges, 5,376; lemons, 289; total, 5,664. From Central California to date this season: Oranges, 305; lemons, 5; total, 310. To same date last season: Oranges, 261; lemons, 22; total, 283.

AT THE AUCTIONS

July 13
New York: 33 or., 1 grapefruit, 2 mixed, 2 lem. Val. 2.60-7.00, grapefruit 2.95-4.05, lem. 6.70-11.50.
Cleveland: 7 or., 8 lem. Val. 3.05-5.65, lem. 4.35-8.55.
Cincinnati: 4 or., 6 lem. Val. 4.00-4.70, lem. 3.55-9.55.
Pittsburg: 5 or.,, 3 lem. Val. 2.90-4.25, lem. 7.95-11.20.
St. Louis: 4 or., 3 lem. Val. 3.65-5.30, lem. 6.95-11.00.
Boston: 14 or., 3 lem. Val. 2.85-5.70, grapefruit 4.25-5.25, lem. 7.50-11.45.
Philadelphia: 9 or., 1 grapefruit, 2 lem. Val. 2.90-5.75, grapefruit 3.80-4.15, Mikes. 3.20-4.10, lem. 9.15-11.70.

July 15
New York: 16 or., 3 lem. Val. 2.75-6.30, Mikes. 2.65-2.70, Seedless grapefruit halves 2.50, lem. 10.65-11.65.
Cincinnati: 3 or., 5 lem. Val. 4.00-4.75, lem. 2.80-9.85.
Philadelphia: 4 or. Val. 2.45-4.75, grapefruit 2.65.
Pittsburg: 3 or., 4 lem. Val. 2.15-4.35, lem. 5.90-9.80.
St. Louis: 4 or., 4 lem. Val. 4.13-5.15, lem. 4.17-8.45.
Cleveland: 7 or., 5 lem. Val. 2.10-4.80, lem. 3.55-8.85.
Boston: 12 or., 4 lem. Val. 3.15-5.00, seedless grapefruit 2.95-4.80, lem. 5.45-13.00.

July 18
Pittsburg: 10 or., 5 lem. Val. 2.25-4.75, lem. 8.60-10.25.
Cleveland: 7 or., 4 lem. Val. 3.05-5.05, lem. 4.20-7.80.
Cincinnati: 4 or., 3 lem. Val. 3.55-4.90, lem. 5.45-10.75.
New York: 47 or., 5 mixed, 25 lem. Val. 2.65-6.70, grapefruit 2.35-3.85, lem. 6.20-12.20.
Boston: 20 or., 5 lem. Val. 3.10-4.95, grapefruit 2.65-3.75, lem. 4.00-12.60.
Philadelphia: 8 or., 1 lem. Val. 3.30-5.80, grapefruit 3.15, lem. 10.05-12.35.
St. Louis: 7 or., 3 lem. Val. 3.07-5.45, grapefruit 1.50-2.65, lem. 5.13-11.70.

July 19
New York: 25 or., 1 grapefruit, 2 mixed. Val. 3.40-6.70, grapefruit 3.35, halves 1.25-2.80.
St. Louis: 4 or., 2 lem. Val. 2.65-5.05, lem. 10.70-11.25.
Boston: 14 or., 1 lem. Val. 3.00-4.80, grapefruit 3.10-3.75, lem. 5.70-10.10.
Philadelphia: 6 or., 2 lem. Val. 4.05-5.35, lem. 7.05-12.45.
Pittsburg: 2 or., 4 lem. Val. 3.05-4.50, lem. 4.90-10.95.

REPORT OF CATTLEMEN'S MARKETING COMMITTEE

July 15, 1921.—The fresh and frozen meat in coolers in the United States is less by 109,000,000 pounds than it has been for five years at this date. Prices in Portland and Chicago have gone up in the last week approximately one-half cent per pound. A number of sales of good steers have been reported from various parts of the state at 6½ f. o. b. shipping points. Good cows have sold for an average of 5 cents f. o. b. shipping points. Cattle are moving freely to mar-

ket at prevailing prices. The fat beef cattle are moving steadily to market and it is believed that the available supply of fat cattle will have been exhausted before the run of mountain and Nevada cattle begins. The following list shows the number of cattle sent to market from 22 counties thus far this year:

Amador, 3,545; Butte, 755; Calaveras, 3,022; Colusa, 1,524; Contra Costa, 2,962; El Dorado, 192; Fresno, 11,936; Glenn, 1,860; Humboldt, 120; Imperial, 7,790; Inyo, 923; Kern, 8,378; Kings, 1,410; Los Angeles, 582; Madera, 1,970; Merced, 17,159; Monterey, 4,470; Napa, 333; San Luis Obispo, 3.481; Stanislaus, 21,637; Tehama, 469; Tulare, 18,519.

Do not ship on consignment under any circumstances and do not offer half fat cattle for sale.

TARIFF AND TRUTH IN FABRIC BILLS NOW BEFORE CONGRESS

Active debate on the tariff is now on in the house of representatives. Hearings on the French-Capper truth in fabric bill have just been completed before subcommittee of the interstate and foreign commerce committee of the senate. The representative of the National Sheep and Wool Bureau protested the 35 per cent ad valorem limitation clause in the wool schedule. The wool schedule provides a direct duty of 25 cents a pound on the clean content, but the National Sheep and Wool Bureau points out that with this 35 per cent ad valorem limitation clause on the lighter shrinking wools, the actual protection would only amount to about 6 cents per grease pound and in some instances less.

As an illustration of some of the conditions the wool growers are now contending with, Mr. Secretary Wilson of the National Sheep and Wool Bureau of America cited the instance of an Arizona wood grower who on June 1 and June 15 marketed 1,017 lambs in Chicago, and after paying the feed bill, freight, yardage, commission and other charges, was out of pocket $1,445.41. Farm organizations and the wool growers are uniting in their effort to get adequate tariff protection, and at the hearings just held on the truth in fabric bill not only all the farm organizations and wool growers' organizations, but also prominent retailers and thousands of women and civic organizations, through their representatives as well as representatives of various other organizations, united in their appeal for immediate enactment of the truth in fabric bill. Herman C. Ritter, a well known retailer of Youngstown, Ohio, and ex-president of the National Retail Clothiers Association, presented a telegram from the Ohio Federation of Women's Clubs, with a membership of 100,000, in which it was stated that the women of this club were unanimously in favor of the French-Capper truth in fabric bill.

SALT TOLERANCE OF PLANTS

Salt tolerance of plants is of considerable interest to those who live in low coastal districts and interior plains somewhat alkaline. A bulletin has been published in Italy on this subject, by Dr. E. O. Fenzi, now living in Italian colonial territory in North Africa, but formerly residing for many years in Los Angeles and Santa Barbara, and known as Dr. Franchesci. As an expert in California botany and horticulture his plant lists should have a special value for Californians.

In soils formerly free from salt but afterward impregnated with one and a half per cent of salt it was found that among agricultural crops, cotton, corn, sorghum and tobacco grew well; in vegetables, artichoke, bean, beet, carrot, cabbage, chicory, lettuce, pepper, onion, leek, garlic, pea, tomato and watermelon; in fruit trees, almond, apricot, pear, plum, olive, quince; in ornamental plants and flowers, ageratum, antirrhinum, coreopsis, dahlia, datura, eschscholtzia, calendula, gaillardia, gazania, geranium, pelargonium, iris, sunflower, four-o'clock, lippia, mesembryanthemum, poppy, petunia and zinnia. In trees these did fairly well: Laurus nobilis, Acia eburnea (horrida), Buddleia Madagascariensis, Casuarina species, Cestrum species, Duranta Plumieri, locust and pepper tree.

In plants capable of thriving in soils containing not more than five per cent of chlorides, even if impregnated with water containing three per cent, we have the following list: Aberia Caffra, Acacia cyanophylla, A. cyclopsis, A. Farnesiana and several other species; Ailanthus glandulosa, locust tree, carob, several cypress and eucalypts, Pittosporum species, pistachios, parkinsonia, Pinus Halepensis and pomegranate.

In soils having five per cent of salt and also watered with a five per cent solution, the following species throve—a severe test: Agave Americana and other "century plants," several Atriplex (salt bushes), two species of juniper, several melaleucas and other "bottlebrushes," Myoporum, many cacti, Phoenix Canariensis and the date of commerce, Pircunia dioica, Pinus pinaster and Pinus pinea, and several palms, among them Sabal The latter is our native California fan palm.

GETTING RID OF WEEDS

The University of Wisconsin has published Circular 48 on how to rid farms of weeds, in the summary of which is packed the following information:

The loss from weeds in enormous; fully 25 per cent of the earning capacity of some farms in certain sections is being lost. Millions of dollars can be saved annually by the use of a few simple methods of weed control.

Successful destruction of weeds depends upon a knowledge of the life periods and habits of the plant and the application of this knowledge in the fight against them. Annual and biennial weeds may, for purposes of eradication, be treated alike.

Scattered weeds are best eradicated by cutting or pulling up by the roots while in full bloom. Where they occur in large patches cultivation, rotation of crops and chemical sprays should be employed. The main object is to prevent plants from going to seed.

Perennial weeds offer the greatest resistance and require more thorough and persistent effort. Two of the most troublesome weeds are quack grass and Canada thistle.

Fallowing or cultivation without a crop is the most certain method of eradication on large areas, and may be used to good advantage except on sandy soils and those continuously wet or very porous. Success depends upon the depth of plowing and frequent cultivation. The preventing of all leaf growth in weeds means their certain death.

Small areas may be freed of perennial weeds by covering with paper or by close cultivation.

Special methods for eradicating thistles are the growing of alfalfa, the seeding down of fields to perennial grasses, salting the plants, or applying gasoline or carbolic acid.

Concerted action is necessary. The most noxious weeds can be eradicated, and farmers should cooperate with each other, with the legislature and the experiment stations to rid the state of these enemies to profitable and pleasurable farming.

COMING EVENTS

Eden Township Farm Products Show, Hayward, August 11-14.
North of Bay Counties Fair, Santa Rosa, August 24-28.
Downey Community Fair, Downey, August 25-27.
Yuba County Agricultural Fair, Browns Valley, Aug. 29-31.
California State Fair, Sacramento, Sept. 3-11.
Fall River Fair, McArthur, September 7-9.
San Joaquin County Fair, Stockton, September 12-17.
Tulare County Livestock and Agricultural Show, Tulare, Sept. 13-17.
Humboldt County Fair, Ferndale, Sept. 13-17.
San Fernando Valley Fair and Market, San Fernando, Sept. 13-18.
Glenn County Fair, Orland, Sept. 19-24.
Kings County Fair, Hanford, Sept. 19-24.
San Diego County Fair, San Diego, Sept. 21-24.
Fresno District Fair, Fresno, Sept. 26-Oct. 1.
Arbuckle Almond Show, Arbuckle, Sept. 28-Oct. 2.
National Swine Show, Springfield, Illinois, Oct. 3-8.
Ventura County Fair, Ventura, Oct. 5-8.
Shasta County Farm Bureau Fair, Anderson, October 6-8.
Southern California Fair, Riverside, Oct. 11-16.
California Association of Nurserymen Annual Convention, Exposition Park, Los Angeles, Oct. 20-22.
Date Festival, Coachella Valley, Oct. 21-23.
California National Livestock Show, San Francisco, Oct. 22-30.
California Horse Breeders Association, Los Angeles, Oct. 30-Nov. 5.
Pacific International Livestock Exposition, Portland, Oregon, Nov. 5-12.
Stanislaus County Poultrymen's Association Show, Winter Garden, Dec. 4-7.

WALNUT CROP

From a trade circular issued by the California Walnut Growers Association we learn that spot walnuts of 1919 and 1920 crops have long since been exhausted. Prospects for foreign crop are that it will be exceptionally short. Of course, no hint of future prices can be given this early, but regarding total output the circular says:

"Our early prospects were for by far the largest crop of California walnuts ever produced. In fact, our early predictions were for a 60 million pound crop, but late in April frosts played havoc in some of the heaviest producing sections, entirely wiping out the crop on some groves and cutting many others down between 20 and 50 per cent of their original setting. However, as the walnut producing sections of California are scattered over a very large area, some districts escaped with little or no frost damage. A complete check-up of the situation leads us to believe that the total frost damage will not exceed 35 to 40 per cent which will develop a total production of between 90 and 100 per cent of last year's short crop. In other words, the state will probably produce 36 to 40 million pounds.

"It will be remembered that last year there was a considerable carryover of old crop goods, both in the hands of the association and in the hands of the trade, which came into competition with the new crop. This year the situation is entirely different and there will be no such competition. Also, there was a considerable stock of imported goods available for distribution last fall which will not be available this season.

"The maturity of the California crop will probably average a week to ten days earlier this year than last. The average size of the walnuts will probably be a shade smaller than last year, although sizes will average much larger than they did in 1919. So far, since April, climatic conditions have been quite satisfactory, and barring the possibility of an extreme heat wave during the balance of July or August, the cracking quality of the nuts should be exceptionally good. The meats should average plump and light colored."

FARMERS ARE ASKED TO COOPERATE WITH FEDERATION

The California Farm Bureau Elevator Corporation, which has taken over the great grain elevator at Oakland, and which is constructing elevators at several inland points, declares that if bulk handling of grain is to be a great success this year farmers must cooperate. It is said that the terminal elevator is equipped with every labor saving device, that machinery and gravity eliminate costly warehousing and stevedore charges. Farmers are asked to equip with modern facilities in order to complete the chain for the economical handling of grain.

Sack grain will be received at the terminal eltvator, dumped into the bins and the sacks returned. But this method is a temporary one. Farmers are expected to ship in bulk as quickly as they can provide facilities.

Where the farm bureau has built no elevators, farmers are urged to erect loading stations on railroad sidings. It is claimed that such miniature elevators cost but little and that farmers can cooperate in building them. The bulk grain can then be shipped directly to the terminal warehouse where it can be weighed, cleaned and stored. The weights will be made under the supervision of state or government weighmasters.

WANTON DESTRUCTION

Every Sunday during this season of each year, and to a lesser extent on week days, our hillsides are robbed of many spikes of yuccas which, to paraphrase Shakespeare, not enriches the plucker but makes the landscape poor indeed. It is indeed a glorious sight to see a great hillside covered with hundreds of the gigantic creamy-white plumes—there never were too many present for the beauty of the scene.

The only way by which the numbers may be increased is from seeds. But one in a hundred germinate, probably a far less per cent. Every spike of flowers removes from one to many hundreds of seeds. We choose to believe that children and newcomers are largely responsible for this vandalism. It is hard to conceive that adult Californians can be so thoughtless, so destructive of a plant so typically and exclusively Californian, one that lends to our state's reputation as a land of rare beauty and many wonders. If this wanton destruction is pursued at the present rate for but a few years these beautiful yuccas will pass from the commonplace to extreme rarity.—E. B.

COOPERATIVE TRACTOR UNITS

J. A. Dennis of the "Mutual Tractor Unit" at San Dimas, Los Angeles County, thus sums up the advantages to be derived from a cooperative tractor unit under the oversight of careful, efficient men:

A large equipment with a small investment cost per acre.

A low operation cost per acre per unit of operation.

A higher type of work than usually given on small holdings or by commercial tractors.

Elimination of trouble and worry to the individual grower, as to care of outfit.

Insurance of regular, efficient operation of work, without the personal supervision of the grove owner.

Especially adapted to handle the work on groves where the owner is too far away to handle.

ROSE DISEASES

A great deal of damage is annually caused to rose gardens in the island of Trinidad, West Indies, by several diseases. Two of these are very common wherever roses are grown and are due to the fungi Diplocarpon Rosae and Sphaerotheca pannosa. Various fungicides have been used in the control of these diseases, but the best results have been obtained by dusting the plants with a mixture consisting of 1 pound arsenate of lead and 9 pound flowers of sulphur.

WEATHER REPORT

San Francisco, Cal., July 16, 1921.

Stations	Rainfall Wk.	Season	Norm.	Temp. Max.	Min.
Eureka	.00	.00	.11	58	50
Red Bluff	.00	.00	.00	104	66
Sacramento	.00	.00	.00	98	52
San Francisco	.00	.00	.01	64	51
San Jose	.00	.00	.00	80	50
Fresno	.00	.00	.00	106	66
San Luis Obispo	.00	.00	.01	80	52
Los Angeles	.00	.00	.00	84	60
San Diego	T	T	.00	71	64

Dairymen Attention

8 Can Sterilizer Only $17.00

Buy direct from manufacturer—standard gauge material and expert workmanship guaranteed.

Note these Prices F. O. B. Los Angeles

8 crate sterilizers	$14.50
12 gallon oval milk tank	4.75
12 gallon round milk tank	4.50
30 gallon round milk tank	5.75
50 gallon round milk tank	7.75

Prices cheerfully submitted on all sheet metal, copper and brass work.

We specialize in dairy utensils.

Bassler & Bernstein

General Sheet Metal Works

806 Maple Ave, Los Angeles, Cal.

What I have learned about Baking Cake

MRS. DE GRAF *enjoys a wide reputation as an authority on home cooking and baking. In this article she discusses a topic that appeals to both the palate and the purse. It is well worth reading — and saving!*

—EDITOR.

CAKE comes on the list of luxuries right now, so the utmost care should be taken both in the method of preparation and in the quality of material used. Good flour is absolutely essential for good results.

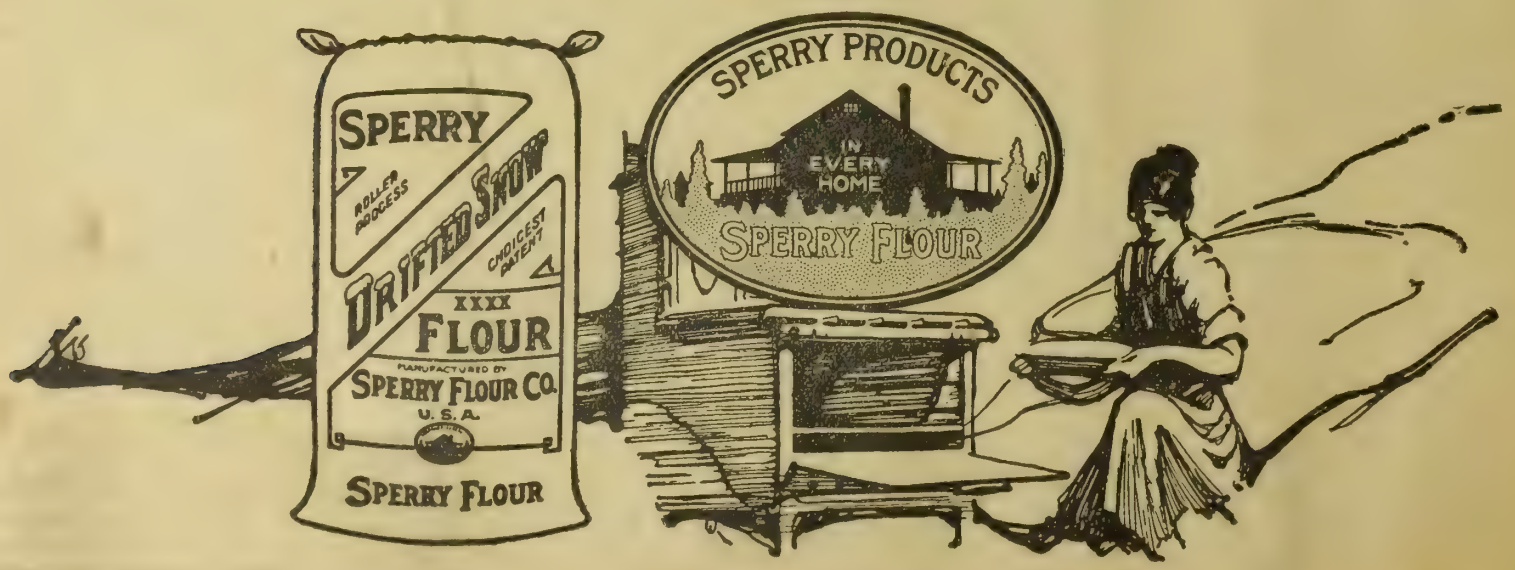
Take, for example, Sperry Drifted Snow Flour. It is an "all purpose" family flour—equally satisfactory for yeast breads, biscuits and cakes. It will produce the delicate Angel Cake as well as the standard plain cakes.

The best results and flavor will always be obtained from butter, but because of the high cost at the present time, butter substitutes are being used with satisfactory results. The mixing and baking of cake require both skill and judgment. The baking needs more study and care than the mixing, for no matter how well you have put the cake batter together, if the oven is not right the cake may be a failure.

There are two classes of cakes—those which contain butter or other shortening, and sponge cakes in which the butter is omitted.

The more the cake is beaten before the egg whites are added, the firmer its texture will be. Separating and beating the eggs gives a light, fluffy cake. The eggs can be added to the creamed sugar and shortening mixtures one at a time, unbeaten, but beating each egg vigorously when adding to the batter will produce a cake that is moist and fine grained, and that will keep in good condition for some time.

Director
Sperry
Domestic
Science
Department



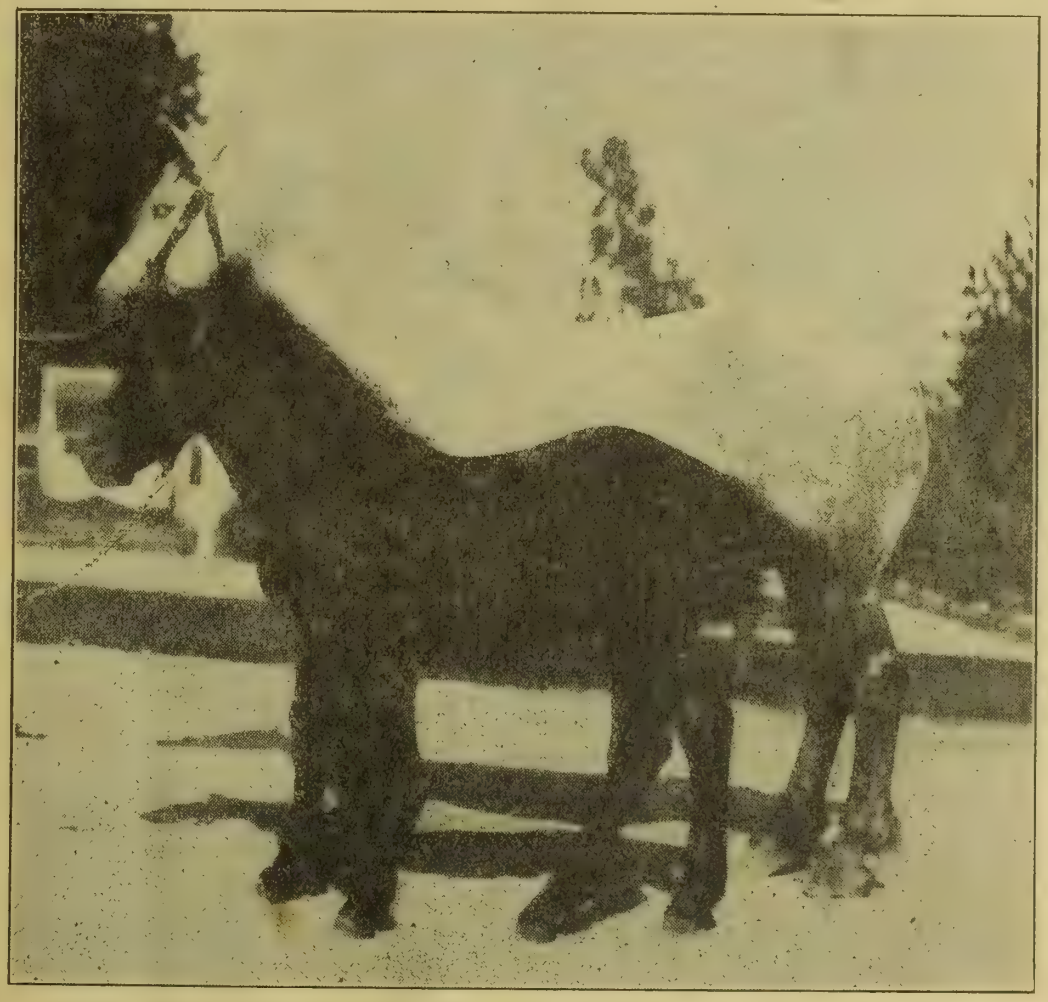
CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LVII — July 30, 1921 — No. 5

Mother and Son at Santa Anita Rancho



Established 1877 Forty-fourth Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877
Combined with California Cultivator 1914
Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

Vol. LVII No. 5

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Saturday, July 30, 1921

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

If any of the 40,000 Cultivator subscribers fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

EDITORIALETTES

The cover gives us a look at Incomparable and her colt. Incomparable is owned by Santa Anita Rancho and is one of the many fine Percherons which are producing workers and breeders to add to the efficiency of California's farms.

* * *

Recently grain dealers, elevator operators and others interested in the purchase of the grains of the farms of the Middle West met in Cincinnati, passed the hat and raised a fund of a quarter of a million dollars, which it is charged is to be used to "actively combat the activities of the U. S. Grain Growers, Inc., and of county agents." Now the U. S. Grain Growers, Inc.," happens to be made up of the great American farmer, and the great American farmer is saying to himself and to everybody else: "I am not going to be farmed any longer than I have to." So it has come to a show down, and a real fight is on between the producers of the grain and the men who in the past have made the profits from the grain.

Manager Tucker of the California Almond Growers Exchange writes in appreciation of the work of the Cultivator in aid of the tariff on almonds. Mr. Tucker adds: "Our battle is not yet over. The importers, who at the present time monopolize the shelled almond market of this country, are waging a terrific fight. We intend to carry the campaign right into the senate, with a view of not losing that which we have gained, but also obtaining the minimum asked by our growers of five cents on unshelled and 15 cents on shelled almonds."

* * *

Dr. Mead of the land settlement board announces that a parcel of land at Delhi in Merced County has been divided into 50 poultry ranch allotments, that is, small parcels ranging from two to ten acres and at a valuation of around $200 per acre including the water right. These parcels will be open to allotment about the first of September. This will really mean a great increase in the population of Delhi.

* * *

Tulare County is one of the pomegranate growing centers of the state. The pomegranate is one of the most attractive of fruits and yet seems to fail in commanding great demand in the open market. Now Tulare County papers announce that the juice of the pomegranate has wonderful possibilities as a dye and in making dyes fast.

* * *

Bronte A. Reynolds, for the past two years editor of the publications of the California department of agriculture, has tendered his resignation and accepted a position along similar lines with the Pennsylvania department of agriculture. Mr. Reynolds will leave for the East August 1. W. S. Killingsworth, assistant to Director Hecke, will have charge of the editorial work of the department for the time being.

* * *

We regret that the address on "Liquid Gas, Cyanofumer or Pots—Which Shall It Be?" used on page 75 last week, was not credited as being from "an address by R. S. Woglum before Fumigation and Pest Control School held at Whittier." That school, under direction of the Los Angeles County farm bureau, brought together a vast fund of information which is needed at this time. For more than a third of a century we have been fumigating citrus trees in California and have learned a great deal as to hydrocyanic acid gas and its capabilities, but there are still so many questions confronting the grower, questions yet unsolved and which sometimes seem almost unsolvable, that a gathering of practical and scientific people such as that at Whittier proves of great value.

LAND SETTLEMENT COURSE

Land settlement possibilities, land settlement needs, methods, opportunities for the individual and for the state, and, in fact, land settlement from all angles, is to be discussed in a short course to be held at Berkeley September 5-18. Dr. Mead and other members of the commission have a great fund of information and are filled with enthusiasm as to what state land settlement plans mean for California. But they wish a wider circle of enthusiastic supporters of land settlement plans. They wish for themselves and for these other supporters a greater fund of information made necessary by the problems brought out in the two land settlement schemes already under way, so they have called the Berkeley meeting, or rather arranged for a regular short course covering nearly two weeks, and in those two weeks every angle of California land settlement problems will be discussed.

WHO'S TO BLAME

Dispatch from Darwin J. Smith at Turlock to Sacramento Bee:

"Ten years ago there was one Japanese family in the Turlock district. Today Japanese lease half the cantaloupe acreage there and Japanese labor has replaced that of white hands."

And these few words give one a good start in understanding the "Mob Rule at Turlock," "Japs Deported," "White Farmers Driven to Wall," etc., which have appeared in headlines for the past few days.

The few white farmers remaining are forced to employ the cheapest labor or quit the game. Whether it's I. W. W. disturbers or other labor angered at Orientals taking their jobs matters little. The big problem for California, or rather for the United States, is that a "friendly nation" is violating its "Gentlemen's Agreement"; it is pouring into this country laborers who are depriving white men of jobs, and a race problem must be solved and by some other means than by simply shutting our eyes and everlastingly shouting: "There is no race problem."

GRABBING

The grabbing habit seems to be approaching the epidemic stage. The human race has rather encouraged the habit for many years, and the columns of the California Cultivator have been filled with suggestions that in this great grabbing game there be a reasonable degree of cooperation on the part of the producers of the land that they may stand an even show with great aggregations of capital, often termed "the interests."

Some years ago the citizens of Los Angeles appreciated the necessity of cooperation in securing water. They went 250 miles into the Sierra Nevada and at an expense which has aggregated close to $40,000,000, secured by heavy taxation of the cooperators, brought to the city a great supply of water. Their wisdom is shown by the fact that when this movement was first started there were far less than 200,000 people to be served by the water, while now there are perhaps three-quarters of a million users of that water who also are consumers of California potatoes and other farm products.

One feature of this movement for conservation and use of water was the development of hydro-electric power. Since then producers of the state have been loking to the same mountains and asking as to how other waters could be developed or conserved and used both for power and for watering the land. Engineers of the geological survey, of our state engineering force, and of the large hydro-electric corporations have made investigations. Concerted effort has been made, as in the case of the Marshall plan, and the principal result thus far has been a feverish rush toward the mountains without organization looking to the best interests of the people as a whole.

The Marshall plan could not be sufficiently extensive to protect the interests of all the people of all the state, and yet it was so extensive in scope that many were frightened by its talk of hundreds of millions of dollars required to make it effective, so cooperation has been cast to the winds, and the grab has started. Amongst the first in the effort to secure rights in the mountains to the power which will last forever were the larger hydro-electrics.

Noting the wonderful blessings which had been secured by her former effort Los Angeles has advanced along the same line and endeavored to secure rights alongside of other large corporations. This has been resented, and farmers have been appealed to in the fight against the municipal corporation. One of the reasons given in the opposition to the great city securing this power was that it carried it to the city and sold it at prices under those charged by the hydro-electric companies in the smaller cities. The fight is not confined to the districts south of Tehachapi; it is state wide. In fact, the large company which is securing the support of many farmers south of Tehachapi is being opposed in the courts by farmers of Inyo County. There the irrigators united in defending themselves against the demands of the comany and won complete victory.

As a rule the papers of the state outside of the cities of San Francisco and Los Angeles have made most caustic criticism of Los Angeles' effort to save the power and give it over to the use of the people without dividing the large profits of such a movement with any private interest. However, one paper, the Modesto Herald, calls attention to the wonderful wealth of the mountains and appeals for cooperative effort on the part of the producers and real workers of the state and urges effort to secure by the people and for the people the same advantages, and then adds:

"What Los Angeles has done every county tributary to water and power sites could have done had they had the same foresight and the same 'intestinal fortitude.' To some the opportunity is still open—the Modesto and Turlock irrigation districts are an example. To the state the opportunity is still at hand to save much of the water and power resources of the Sierras for the benefit of the whole people. Will the state do it? Unless other municipalities take action, who should berate Los Angeles for her 'porcine proclivities'?

"The way to checkmate Los Angeles is to get busy profiting by her example."

There is nothing to be gained by calling names and scratching and pulling hair. California needs more cooperative spirit, more getting together and working together. That cannot be secured by following the present movement of trying to stop everybody else from getting what we, the people, are refusing to reach forth and take possession of.

What farmers need is more and cheaper water and power. They may get it through the state; they should see to it that they do get it through cooperation with the state. As we go to press a movement is started to initiate and secure enactment by the people of "A California Water and Power Act." May careful study of it prove its worth, then may we get behind it and push.

Horticultural Commissioner Brosius of Sacramento County says grasshoppers are doing serious damage in several sections.

California Cultivator

Vol. LVII, No. 5 | Los Angeles, July 30, 1921 | One Dollar Yearly

Potato Growers Addressed by Governor Stephens

THE potato growers' section of the Los Angeles County farm bureau is holding a meeting today at Van Nuys in the San Fernando Valley and discussing standardization, especially the (new to California) U. S. standard, and also to an extent cultural methods. San Fernando Valley is becoming one of California's potato producing centers. This session is especially honored by the presence of Governor Stephens. Governor Stephens' address is largely devoted to enactments of the recent legislature which are favorable to agriculture. No other legislature has ever given so much attention to and no other governor ever signed so many enactments favorable to agriculture.

Nearly all of these enactments have been referred to in a series of articles written by R. N. Wilson for Cultivator readers, so we will not quote that portion of the governor's address touching upon the specific laws. In part the governor said:

GOVERNOR STEPHENS

"We are continuously reminded of the gigantic power of the earth to replenish. Nature's storehouse not only contains the grains that overflow the barns, but from it can be drawn, and is continually drawn, the wisdom and the strength that leads to the building of cities, the spanning of the waters, and the triumph of righteous endeavor in war and peace.

"The task has been laid upon us to fructify the land, to make it laugh a harvest, to go on ever struggling to make the world good and better, as was intended by the Creator. He reserved creation for Himself, and gave us re-creation as our God-blessed privilege. That is indeed a privilege, as you who labor in this wondrous garden of nature will testify.

"We have a profound responsibility in the development of this state of California. But it cannot be adequately developed by the placing of bricks, one upon another, nor by merely promoting education and educational institutions. We cannot safeguard it by prohibiting and inhibiting with laws alone. But we can lay the foundation for great and glorious cities, for wide highways that are the arteries of trade, for the institutions of learning, if we labor intelligently and reverently first and always with the problems of the soil. The soil is foundational, and from it emerges all progress, even as has been said in those first beginnings before man realized his heritage and his destiny."

Touching upon California's opportunities, the governor said:

State's Potentiality

"My investigation shows me that the total irrigable acreage of the state for which water can be available is 9,699,600, or close to ten millions of acres. Of this amount, 3,500,000 acres, or 36 per cent, of the total was irrigated in January, 1915. An additional 636,000 acres since the initiation of the water commission act in this state shows the progress we have made, a seven per cent increase, but there remain 5,563,000 acres yet to be put under irrigation for which water can be made available. Applications for irrigation received during the 18 months ending in July, 1920, cover an area of approximately 5,000,000 acres, and the total of all applications at present adds another million acres to this sum.

"The careful analyses of the power possibilities from our mountain streams show that the state can produce 9,250,000 theoretical horse power. At the time that the state organized the water commission there was a total of 910,000 horsepower developed in all this great state. That has been increased by 236,000 horsepower. While this shows that a remarkable program of power development is under way, it also points to the huge potentiality, and it is the potential possibilities of this state with which you and I must deal intelligently. And I shall say to you here today and to every gathering wherever it is appropriate, that I intend to foster this program of potential development in every way that is feasible and just and indicative of sane progress, for there can be no greater project in this marvelous state of possibilities than that of conserving, retaining and applying the unused and wasted water and power of the people for the people.

"As tillers of the soil I know that you must be and are interested in these tremendous projects which your water commission and your governor are engaged in adjudicating. In this semi-arid country there can be little progress in the tilling of the land until the land has been adequately supplied with water, and not only must this water be conserved to the last drop in this scheme of progress, but it must be distributed on an equitable basis. That is the problem of your public officers, a problem in which I ask you to share to the extent of your interest and study and suggestion. You must give your state more power to carry out the projects that have been found to be feasible, and in doing so you will increase the productivity of this state a thousand fold, yes, a thousand thousand fold.

"The defining and clearing up of water right titles for use in irrigation is one of the great tasks confronting California, but it is not an insurmountable task. As your governor I aided in passing and afterwards was glad to sign three bills which have to do with the program to make water titles as clear in this state as land titles. Without water much of our land is worthless for agriculture, and unless water titles are as definite as deeds to land we cannot offer a good investment in those lands to the thousands of future Californians whom I picture in my mind as coming in an ever increasing company to share in the prosperity of this great commonwealth.

"What we desire in this state is intense agriculture. The world cannot afford to allow its lands to be grazed on the old plan of ten acres to the meat animal unless the land utilized for this purpose cannot be reclaimed by the application of water. The American does not want to waste his substance in this manner, and the nation and the state cannot afford to longer continue such a practice.

"Therefore, I am working to the best of my ability to place men and women on the land with opportunity for production actually confronting them. I am deeply anxious to remove that mirage of the desert which has blasted so many fond hopes, which is the dry homestead. The dry homestead belongs to the old and careless and care free days. Today we are confronted by serious conditions, and development depends upon our care in the handling of these conditions.

"Out of this desire to give actual opportunity we have evolved the state land settlement act, which is familiar to most of you, but in brief combines all the essentials of opportunity by placing in the hands of men and women anxious to work them, lands with sufficient amount of water already developed by the state. Following up this step this settlement act provides for the financing to a certain extent of these state homesteaders, the amortization of payments, easy stages of acquiring the lands over a maximum period of 40 years, and the further provision of small allotments to farmer laborers. So far as this act has been in operation it is a splendid success. It is the true way, I believe, of building up the agriculture of this state from out the efforts of people who really wish to succeed and make a home.

For the Soldiers

"And then, finally, I want to speak just briefly of a group of legislative acts pertaining to the soil, which are similar to the state land settlement act, indeed, patterned somewhat after that act—the veterans' welfare act, and the creation of the veterans' welfare board. No legislation has been closer to my heart than this legislation, which I had the profound satisfaction of urging and eventually signing.

"In order to make this great program of soldier legislation a reality, the people are asked under another act to vote ten millions in bonds one year from next November at the general election. This money will go into a revolving fund which, as the soldiers pay off their indebtedness, will be returned to the state treasury."

Early Tractor Owners Still Use Mechanical Power

OF MORE than 1,200 farmers in the corn belt and northern great plains states who purchased tractors four or more years ago 81 per cent still use their first machines or others which they have since purchased. Nearly half of those who have bought their second machines have changed their opinions as to the best size for their purposes, as indicated by the sizes of the machines purchased. The men who had sold their first machines kept them for an average period of a little more than three years and sold them for an average of $490, approximately half the first cost.

These facts are brought out by the replies to several thousand letters sent out by the bureau of public roads to tractor owners in North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa, Missouri, Wisconsin, Illinois, Indiana, Michigan and Ohio who had furnished reports on their machines in 1917 and 1918.

A summary of the replies from 1,219 men who are still operating the same farms or similar farms in the same locality showed that in 1920, 534, or 44 per cent, still owned their first machines and used them for field work; 446, or 37 per cent, had replaced their old tractors with new ones which were used for field work; and 239, or 19 per cent, did not use tractors for field work. Seventy-one of the 239 still used their old tractors for belt work.

About one-half of the machines purchased in 1916 and 1917, one-third of those purchased in 1914 and 1915, and one-fourth of those purchased in 1913 or earlier, were still being used for field work. Of 808 men who purchased their machines in 1916 and 1917, 410 still owned the same machines and used them for field work; 25 of them had purchased other tractors and used both for field work; 275 had replaced their old tractors with new ones which they used for field work; of these, 227 had sold their first tractors and 48 still had them; 13 of the latter used their old tractors for belt work only, and 35 did not use them at all; 123 did not use tractors for field work; of these, 123 had disposed of their tractors, 35 used them for belt work only, and 21 still owned the old tractors but used them for neither field nor belt work.

Of 331 men who purchased their machines in 1914 and 1915, 105 still owned and used them for field work in 1920; of this number, 105 had purchased other tractors and used both for field work; 133 had replaced their old tractors with new ones which they used for field work; of these, 99 had disposed of their first tractors and 34 still had them; of the latter group 10 used their old tractors for belt work only and 24 did not use them at all; 93 did not use tractors for field work, 46 of whom had disposed of their trac-

(Continued on Page 114.)

Agricultural News Notes of the Pacific Coast

Northern California

The Sebastopol apple district reports about two-thirds crop of Gravensteins.

The Point Reyes cow testing unit of Marin County has employed a new tester.

In the first week of July San Francisco shipped 35,800 dozen eggs to Hawaii.

Alameda County farmers have decided to establish a free market in Oakland.

Deciduous fruit shipments are almost twice what they were last year at same date.

Sutter County supervisors have awarded contract for building the long bridge over Butte Slough.

The Eden Township Fair to be held at Hayward is expected to show exhibit of over 1,500 pigeons.

The Knightsen and Lone Tree farm centers of Contra Costa County are planning erection of center club houses.

The Poultry Producers of Central California reports production of eggs during May as only two per cent less than in April.

Poultrymen of northern Sacramento Valley are making a net profit of $1.25 to $2 a hen, according to the Petaluma Poultry Journal.

California Almond Growers Association is enlisting all the agricultural interests in the state in the fight for increased tariff on its product.

Several suits have been filed by the supervisors of Glenn County to enjoin rice growers from allowing waste water to overflow county roads.

Napa County supervisors have awarded contracts for construction of three miles of paved highway from Braggs Hill to the foot of Napa Mountains.

The supervisors of Sutter County have given up consideration for the present of construction of bridge across the Sacramento River at Grimes.

Dairymen of the Galt farm center of Sacramento County hold a big meeting tonight to which milk producers from the Franklin, Consumnes, Sacramento and San Joaquin districts are invited.

The berry crop of the Paradise Ridge in Butte County is about 75 per cent of normal. Fruits generally are giving light crop but heavier than at first estimated. Grapes are yielding large tonnage.

A stringent quarantine was issued July 5 against materials which may introduce alfalfa weevil from infested territory in Utah, Idaho, Wyoming and certain counties of Colorado, Nevada and Oregon.

The Sacramento County farm bureau and the Sacramento city and county chambers of commerce are putting their heads together to evolve some kind of a market plan that will give justice to the small grower.

Peach growers of Sutter County are shipping their clings to the plant of the Virden Packing Company at Emeryville where they will pack on a cooperative basis. This action is said to have induced canners to raise their offer from $35 to $38 per ton.

Central California

Modesto milk price delivered, 12 cents per quart beginning July 1.

Work is progressing rapidly on preliminary work on the Don Pedro dam.

Visalia peach growers are protesting the $35 a ton price offered by canners.

Over 1,300 cows were tested by the Stanislaus County association during the month of June.

Fires in the Sequoia national forest have been brought under control after burning over 3,000 acres.

The Nevada-California road club is making repairs on the Mt. Montgomery road between Tonopah and Bishop.

The farm home department of the San Joaquin County farm bureau will take active part in the county fair.

Grasshoppers are reported as doing serious damage to young orchard trees in the Gilroy district of Santa Clara County.

The Livingston farm center of Merced County is planning a basket picnic on the river the last Saturday in July.

Farm home department meetings in Kern County at Weed Patch, July 19; Inyokern, 22; Kern Delta, 26, Wasco, 28; Edison-Fairfax, 29.

Twelve thousand people attended the Tulare County picnic at Mooney Park, July 7. Actual count showed that 2,400 automobiles entered the park.

Inyo County farm centers are planning a county fair at Bishop the latter part of September. Other organizations are taking up the project.

Prizes of $50, $30 and $20 are offered by the management of the Patterson fair for the best exhibit of any farm center of Stanislaus County.

Poultry Specialist Easson will begin a series of poultry demonstrations in San Joaquin County, August 19, at the home of Mrs. J. C. Baker, near Ripon.

Farm bureau meetings will be held in Kern County at Mountain View, July 18; Pond, 20; Inyokern, 21; Rosedale, 22; Shafter, 27; Arvin, 29; directors, 30.

The California Cooperative Canneries has received a loan of $2,000,000 through the war finance board. The company operates canneries at San Jose, Modesto, Visalia and Tulare.

Farm bureau meetings for San Joaquin County are scheduled for Acampo, August 2; Ripon, 3; Nile Garden, 5; directors, Stockton, 6; joint directors, Galt, 13; Escalon, 15; Summer Home, 18; Lathrop, 22; Calla, 26.

The Fruit News says: "A survey of the situation in canning activities in Santa Clara Valley shows about one-third of the canneries idle; one-third working on quarter time; the other third at about half the usual pack.

Farm home department meetings will be held in San Joaquin County at Farmington, August 2; Bruella, 4; Manteca, 5; French Camp, 9; Douglas, 10; Escalon, 12; Linden, 16; Ripon, 17; Summer Home, 19; Lafayette, 24.

The veal calf department of the Tri-County Marketing Exchange has headquarters at Modesto. Calves are shipped the first four days of the week, leaving Modesto by truck at 4 a. m., reaching the Bay cities before the heat of the day.

Southern California

Riverside is now getting 13 cent milk.

Avocado association field meet at Puente today, July 30.

Pupils of the Banning Indian school are cutting apricots at Banning.

Orange County fair will be held at Huntington Beach, September 28-October 1.

Carpinteria Valley reports beans making sturdy growth in spite of their late start.

The annual Iowa picnic will be held at Bixby Park, Long Beach, all day, August 13.

The Orange County farm bureau is considering advisability of appointing a secretary-manager.

The drop of oranges was not as serious as in former years and promise now is for a large crop.

Shipments of white potatoes from Southern California are some 500 cars heavier than last season.

A new correspondence course in walnut culture is being prepared by the state college of agriculture.

Santa Barbara County is considering purchase of a 1,000 acre tract around Nojaqui Falls to be set apart as a park.

Brawley, Imperial County, has finished cantaloupe shipments. Honeydews and watermelons are now going forward.

The acreage of chili peppers in the Garden Grove district of Orange County is reported fully 35 per cent under last year's.

Representatives of farm bureaus of the San Gabriel Valley spent two days last week inspecting site of the San Gabriel dam.

Strikers in Orange County packing houses have returned to work at the same wages, 5½ cents per box for packing oranges.

Walnuts will be smaller than last year and probably about 10 days earlier harvesting. The total production will be about 40,000,000 pounds.

The Santa Ana Sugar Company's plant at Dyer will start slicing beets August 1. Huntington Beach factory will probably start the same day.

The California Peach and Fig Growers Association has named opening prices on a basis of about nine cents on peaches, seven to nine cents on figs.

The walnut output will be far below normal. The crop is exceptionally spotted; some sections show loss of 100 per cent, while others are even above normal.

Contract prices to growers on chili peppers are still under 15 cents, but it is hoped they will go higher before picking time. Last year's beginning price was 20 cents.

The California Honey Producers Cooperative Exchange has moved into new quarters at 1275 East Sixth Street, Los Angeles, where storage accommodations are available.

Plant No. 20 of the California Prune and Apricot Growers, at Santa Paula, has just closed its pit cracking season after a run of nearly three months. The 1921 crop will soon be coming in.

The Coast and General

The Washington state fair will be held at Yakima, September 19-24.

The Farmers Finance Corporation is the fiscal department of the U. S. Grain Growers, Inc.

The Arizona Cattle Growers Association held its summer meeting at Flagstaff July 8 and 9.

Chas. B. Fowler, former sheriff of Santa Cruz County, Arizona, has been appointed collector of the port of Nogales.

Inspection of Arizona milk for the month of June indicates that the general quality of milk over the state is improving.

Receipts of the state land department of Arizona for the six months ending June 30 totaled more than a quarter million dollars.

Salaries of livestock inspectors in Arizona have been reduced 20 per cent. This is due largely to the fact that few cattle are being shipped at the present time.

Oregon's apple crop will be larger than last year, according to estimate of Statistician Kent of the U. S. bureau of markets; Hood River about the same as last year; Rogue River, 25 per cent increase.

About ten per cent of the cows in the Pima County, Arizona, cow testing association produced 40 pounds or more of butter fat in June. The highest production reported was 73.9 pounds of butter fat.

Cantaloupe shipments from the Salt River Valley of Arizona have not been quite so heavy as at first anticipated, but the quality is said to be unusually good, and generally Arizona cantaloupes have topped the markets in the east.

Fire destroyed two stacks of grain for a Salt River Valley, Arizona, farmer the first of the month, one stack contained the grain from 80 acres of oats and the other the grain from 20 acres of barley. Evidence points to incendiarism.

The number of farms in the United States on January 1, 1920, was 6,448,366. Of these, 261,553, or 4.1 per cent, were operated by women. Texas has the largest number of women farmers, 16,128. California has 5,774, of whom 5,406 own the farms they are operating.

Representatives of 12 state public utilities commissions met in Chicago, July 20, to outline evidence to be presented before the interstate commerce commission looking toward a reduction of railroad rates for grain, grain products and hay. A committee was appointed to appear before Commissioner E. I. Lewis in Washington on August 15.

Estimates of the bureau of markets and crop estimates July 9 indicate a crop of 35,000 bales of Pima cotton and 12,000 bales short staple for Arizona this present season. Other crops are: Wheat, 958,000 bushels; barley, 860,000 bushels; corn, 754,000 bushels; grain sorghums, 1,415,000 bushels; oats, 777,000 bushels; beans, 70,000 bushels; potatoes, 464,000 bushels; and hay, 422,000 tons. This is an increase in all crops except cotton which will show a considerable decrease.

Humus

By C. A. Nidever

MANY farmers do not fully appreciate the value of humus. If there were such a thing as a cure-all for the soil it would be humus. There may be locked up in the soil all the minerals necessary for plant growth, but on account of the lack of humus the soil is dead, run out, farmed to death, or any other of the various names given to that type of soil with which every farmer is familiar.

The great lack of most soils is not mineral matter, as most soils contain all of the mineral matter needed. The trouble lies in the fact that the minerals are not available for plant life. Nature was generous in supplying California soils with minerals, and the amount consumed by plants is relatively small.

A graphic showing of the amount of mineral in vegetable matter is secured by burning a quantity of leaves or grass and noting small amount of ash left. The ash represents the mineral matter.

Humus is nature's laboratory wherein the mineral and other potential plant food is worked over by the soil bacteria and made available for the plants to digest.

Humus is organic matter in the soil, such as decayed vegetation and animal manures of different kinds.

In studying the history of plant life we find that plants have survived because they have adapted themselves to conditions as they are in their natural state. In this natural state the leaves, roots and grasses were mixed with the soil and decayed, thereby forming rich humus for the succeeding generations of plants. Decayed vegetation is nature's way of keeping the soil in fertility.

In most cases new land is rich with humus, and under cultivation we must follow these laws of nature by adding organic matter if we expect to keep the soil fertile. In applying our knowledge of the natural state of the plant to farming conditions we must remember that all of the vegetable matter went back into the soil, while under cultivation most of this vegetable matter is taken off as crops. Year after year of robbing the soil of its natural means of keeping its fertility will result in stunted vegetation and loss of revenue. When vegetation is put back into the soil it decays and forms humus.

It is this decayed vegetation mixed with the soil that increases water holding capacity. Soil moisture serves not only as food for the tree or plant, but creates conditions favorable to work of soil bacteria in adding nitrogen and changing mineral elements from an unavailable to an available form for plant food. Most soil bacteria are dormant when the ground is dry.

In the natural state practically no green vegetation is put back into the soil. The leaves that fall and make mould and the dead grasses and roots are always dry matter. Reasoning it out from that standpoint the best form of organic matter to make humus is dry material. It is the tough, fibrous part of the dry vegetation that has the capacity of holding moisture. Dig out a cornstalk that has been plowed under and see how it has stored up and held the moisture. This water holding capacity continues after the fiber has decayed and forms part of the soil.

In observing a field that had been farmed to grain for over 30 years, it was seen that a heavy crop always grew under a large white oak tree that stood in the field. The rest of the grain was small and thin. The leaves that dropped from this tree were sufficient to keep the land fertile and raise a crop every year. There was a distinct line showing how far down the slope the leaves had been carried on the lower side of the tree.

Barley Used as Cover Crop

Paso Robles high school agricultural students studying soil management in a local orchard.

Where it is practical to do so, dry matter should always be put on as a humus builder. One objection to putting on dry material is its slowness to decay. Great care must be used in not getting on too much at a time. Where irrigation is practiced more can be rotted than in an unirrigated section. All should be put on that can be handled with the water that is available. Each farmer's field is his own problem. He knows best how much moisture he has to work with and can act accordingly. The legumes make the best humus builders, but any of the grain straws are good. Where livestock is kept it is a good plan to stack grain straw in the yards where the stock can have access to it all winter. In feeding much of the straw is scattered and rotted, while the animal manure is mixed into it. A year's supply of dressing, which is partially rotted, can be kept ahead in this manner, thereby allowing more to be put on the land at a time. There is a straw spreader attachment that fits on a manure spreader wagon that will save time in spreading and make a more uniform dressing.

Where animal manure is obtainable it ranks among the best humus builders. It contains much available plant food that vegetation has not. It is in itself organic matter partially broken down by animal digestion and incorporates with the soil rapidly, making a very favorable condition for the soil bacteria to work in.

Green Manures

Where it is not practical to give a dressing of dry matter a cover crop should be used. The legumes are the best but any vegetation is good. As to amount to plow under, the same rule holds as to dry matter—all that can be well rotted with the moisture that is available. On irrigated lands with plenty of water the cover crop can be allowed to get more mature, thereby increasing its value as a humus builder. Under irrigation it is a good plan to start the cover crop early in the fall before cold weather begins, which gives a longer growing season. In California districts depending on rainfall all vegetation should be turned under not later than March.

The building up of the soil should be part of the yearly work, the same as plowing and harvesting. No soil will continue to be profitable if cropped every year without some return to keep up its fertility. Fertilizing is not a big problem. Nearly every farmer has cheap material that will make first class humus builders close at hand. The idea of fertilizing is not necessarily to put in this or that mineral, but to build up a porous, friable, live soil. With proper cultivation such a soil will hold moisture and the soil bacteria will develop and do their work.

In brief, cultivate soil bacteria and the plant or tree will take care of itself.

The Way of the Farmer-Breeder

By R. P. Royce

THE idea seems to exist in the minds of many that the ownership of well bred livestock is for the man of means rather than the man in moderate circumstances. Doubtless that impression is gained through the publicity given the more spectacular performances and accomplishments recorded in the activities of the different breeds. As a matter of fact, notwithstanding that many wealthy men have been attracted to the business of producing pure bred livestock and many such men have rendered most valuable contributions to the upbuilding of the breeds, the real ownership and destiny of the improved breeds remains, as always, in the hands of the more progressive farmer-stockmen.

Scarcely a week goes by or a show is recorded, that does not disclose some marked accomplishment on the part of a man who might be regarded as a small operator. It is also true that investigation of the history of men who have come to be regarded as leaders in the livestock world shows that they are in reality but "small breeders grown large."

Authentic instances to substantiate the contention that no monopoly exists in the production of the highest type livestock are not difficult to cite. Take, for example, the development of the new world champion Holstein, Bella Pontiac. Bella Pontiac was purchased as a three year old at public auction by Thomas A. Barron, a 28 year old Canadian farmer. The price paid was $170 and it is recorded that the purchase price took about all the spare money Barron had. Can there be doubt but that there are many men owning Holsteins who are able and would be willing to spend thousands to accomplish what this young man has done with a very modest investment?

It is not necessary to go out of California to find other examples almost as interesting. From one end of the state to the other there are dozens of modest, hard working dairymen-farmers who are continually "putting one over" on their wealthy contemporaries. The most distinguished breeding establishment in California has been developed by A. W. Morris and Sons of Woodland, men who have reached the pinnacle of Holstein achievement from a start as tenant farmers and grade cow owners. Call the roll of California Holstein breeders and it will be found that the majority of the best herds are owned by men who made modest beginnings and who depend on their cows for their yearly income.

Inquire into the Jersey situation in California and it will be found that 90 per cent of the best Jerseys have been developed and are owned by men who are practical dairymen. Every Jersey champion at Sacramento for the past several years has been owned by men of comparatively small means.

The Guernsey affairs are following the trend of the other breeds.

As the beef breeds expand in this state we will record similar achievements from small collections.

With very few exceptions the different breeds of swine in California are in the hands of men who are living on their own farms, doing most of their own feeding and developing.

In Oregon, where the Jersey breed has made such a sensational record as to entitle that state to be placed in the front rank, investigation will show that 95 per cent of the notable herds are in the hands of farmer-breeders.

Rather than working under a handicap as compared with the wealthy owners, the man who is depending on his herd for a living and whose entire interest is centered in the care and development of his herd has certain definite advantages over the fancier.

The small operator by force of circumstances is compelled to be in constant contact with his herd. He has ample time and opportunity to study the individuals making up his herd, whereas the man whose breeding operations are but a hobby misses that close acquaintance and understanding

(Continued on Page 111.)

Problems of Southwestern Alfalfa Shippers

THE irrigated areas of the southwestern United States can produce a high market grade of alfalfa hay, but there are several difficult problems that must be solved in order profitably to market the hay, say specialists of the bureau of markets, United States department of agriculture.

Method of Baling

The first step which has a direct bearing upon the marketing of alfalfa is baling. The rainfall in the Southwest is exceedingly light during the hay making season, and for this reason much of the hay is baled out of the windrow or cock.

When hay is baled from the windrow in sufficiently green state to save all the leaves it can not be pressed tightly because of the danger of heating, and shippers therefore frequently experience considerable difficulty in loading cars with the minimum weight for which they pay charges. Hay which has been stacked and allowed to dry can be baled more compactly, but in baling stack hay many of the leaves shatter because of the dryness. According to the application by many inspectors of the present grade rules this hay is of a lower grade than when the leaves cling to the stems, notwithstanding the fact that the leaves may be contained in the bale.

Bleached Hay and Weeds

Bleached hay, together with weeds, causes considerable trouble in marketing alfalfa. It is well known that alfalfa hay bleaches quickly when exposed to bright sunlight, but there is a wide difference of opinion as to just the amount of nutrient that is lost in bleaching.

Commercial grade rules, however, are based in part upon this factor. Producers and shippers in these sections contend that too much weight is given the color factor in the present commercial grades for alfalfa and not sufficient weight to its feeding value.

From investigations recently made by the bureau of markets it appears that when the present grading rules are rigidly and technically applied, as is frequently the case on declining markets, it is impossible under the most ideal conditions to produce "choice" grade alfalfa.

The presence of a weed, a blade of grass or of a bleached stem will prevent a bale from grading "choice" and it is practically impossible to obtain hay which is entirely clear of any of these things. Considerable hay is bought and sold on this grade, however, but the use of it, and sometimes also of the grade No. 1, causes the shipper a heavy loss.

The specialists believe that commercial grades for any kind of hay should be made so that physical limitations in production and preparation will be properly recognized, and that such grades should be uniformly applied, and not influenced whatever by the state of the market.

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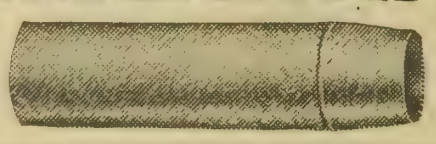


LIME AND FERTILITY

The following is the summary and conclusions of experiments conducted by Messrs. J. W. Paterson, B.Sc., Ph.D., and P. Scott, chemist for agriculture (Victoria), regarding the relation of lime to soil fertility:

1. Lime tends to leave the surface soil through various channels, and fresh applications become necessary to maintain fertility.
2. Carbonate of lime is the best form of lime for the soil.
3. Burnt and slaked lime are rapidly changed to carbonate when they are applied to land.
4. The rate at which lime acts depends on its fineness of division.
5. Lime, but especially hot lime, has a good effect upon the mechanical condition of stiff clays.
6. Gypsum also coagulates clay, but it has not the beneficial action of lime in other directions.
7. Lime greatly hastens the production of nitrates.
8. It has a good effect in liberating potash and phosphoric acid, especially when the later is combined with iron or alumina.
9. Where required by soil, lime produces larger crops.
10. It produces root crops, which are of greater feeding value.
11. It may often be a profitable application to grass land.
12. Lime kills sorrel, docks, and other acid loving weeds.
13. It is specially stimulating to lucerne, clovers and leguminous plants.
14. Lime will not act if phosphates are deficient.
15. It increases the need, everywhere present, of plowing in green manure or stubbles.
16. It facilitates this operation.
17. The surest method of determining the need for lime is to dress trial strips and await results.—Fruit World of Australasia.

POISONED BEET PULP FOR GRASSHOPPERS

A new use for dried molasses pulp, as a substitute for bran in a poison mixture for grasshoppers, is reported from the Sterling, Colorado, district.

As with many other innovations by farmers this season, economy was the father of the idea. The dried beet pulp was cheaper than the bran. The farmers who were fighting the hoppers discovered that the dried pulp absorbed and held moisture better than the bran and that the hoppers liked the pulp better. As the pulp went farther and was cheaper than the bran the experiment was considered a success, and under similar circumstances the farmers will use the dried molasses beet pulp instead of the bran in the future.

The pulp was used in the same proportions as the bran in the regular poison mixture recommended by the state entomologist at the agricultural college, for use against grasshoppers. But the pulp, dried and sprinkled with molasses at a Great Western Sugar company factory, cost only one dollar a hundred pounds, against bran at $1.20 a hundredweight on the Sterling market. The hopper invasion was stopped.

GARDEN AVOCADOS

Over all the world are gardens of great interest and in no country or part of a country is this more true than of California, especially in the way of fruits. This state fairly teems with home grounds containing fruits in abundance that stretch over the longest possible season. In the colder parts this season is about two-thirds of the year. In the warmer parts it is never ending.

Into one of the latter class the writer recently wandered. It is situated at Hollywood, in Los Angeles City, and belongs to Mr. and Mrs. E. E. Hamilton. Trees here of various kinds are budded or grafted, that is, "topworked" to every kind and variety possible. Both Mr. and Mrs. Hamilton bud and graft, but he says: "My wife is the better workman; women are more careful than men, so she does most of the budding. The later grafting is mine." The number of varieties of avocados represented in parts of trees are many, but the trees are 18 in number, one of each leading variety common in the markets. One seedling, Isabella, named for a granddaughter, is new to the public but may yet become common. Mr. Hamilton has found out, as have many others, that one must not judge of an avocado in its first year of fruiting. This seedling first bore when several years old. Its fruit was "not much." It was decided to topwork it. Much of it was cut away and the stubs budded or grafted. The seedling fruits next year were larger and better. This last year improvement continued, and now it is "Isabella." This is the history of nearly all seedlings; the fruits improve with age of tree. Do not condemn the arboreal youth.

Several cherimoyas planted from seeds of high class fruit have given satisfaction. Named varieties of feijoas, or Paraguay guavas, are mingled with numbered jujubes of varieties distributed by the agricultural department at Washington. There are also eugenias and a considerable number of other tropical fruits, Queensland and other nuts, with citrus, stone fruits and all that go to make up a full home supply. Such home gardens should everywhere abound. Pay no attention to distances; tractors nor horses nor gang plows ever reach such cherished spots. Stick in trees thickly, taking care to have the larger to the north of the smaller, so all may have sunshine. You may soon have a miniature garden of paradise, without danger of being driven out if you partake of the fruits thereof.—E. B.

ORNAMENTAL AND ECONOMIC

A flowering broom has been grown and sold in California for a dozen years as Genista palmensis. While used as an ornamental, in its native Canary Islands it is considered only as a stock food. It is a small shrub of weakly, pendulous habit, few leaves and an abundance of white flowers. From Teneriffe, Canary Islands, comes this description: "This is a splendid forage plant and very drouth resistant. Horses and cattle have to learn to eat it but relish it ever after. In the Island of Palma, where it is native, it has been used from time immemorial and with the greatest success. It is quite as nutritious as alfalfa and does not require irrigation. I know of nothing that will fatten cattle and horses so much." While it has been listed as Cytisus palmensis and Cytisus profliferus palmensis, its correct name is Cytisus filipes. It is not a genista.

MONOTONOUS GREENSWARD

In cities especially, where fashion dictates more than in rural districts, we find block after block and mile upon mile of open, plain, unadorned lawn, all tamely uninteresting, but far better than some aberrant treatment occasionally given by an eccentric owner. Yet when one comes to a real front yard garden properly treated it is so interesting, so attractive, that we realize at once and without meditation that the monotonous stretches of "fashionable" greensward are quite insufficient, far from satisfying or attracting! One passes by miles of them without even noting their presence. Moral: Grow rather than mow.

OBJECTIONS TO INJECTIONS

We have always rebelled at serious consideration of introducing "dope" of any kind into the sap circulation of trees for any purpose whatsoever. But now comes Dr. M. Calvino, director of the agricultural station at Santiago de las Vegas, Cuba, and former director of the Central Agricultural Station of Mexico, with a published account of experiments carried out at intervals since 1912, that appear to have greatly benefited fruit trees through heavy injections of chemical fertilizers in solution.

Two old pear trees were chosen in 1912 that had always blossomed but had never borne fruit. One was treated, the other left for a check. A hole was bored in the trunk a little above the ground, and deep enough to go through the sap wood. Into this was introduced a glass tube so sealed on the outside or around it that no leaks could occur. To this glass tube was connected a rubber tube which was attached to a vessel five or six feet above the ground and which contained the liquid. This nutrient solution was composed of about four gallons of water in which had been dissolved about two-thirds ounce sulphate of iron and one-third ounce nitrate of soda. (Five gallons of water with an ounce of the iron and a half ounce of soda would be simpler.—Ed.) The tree absorbed the four gallons in three days. "The following month the leaves were larger and brighter in color than those of the untreated trees about it, numerous fruits set and developed well, while the untreated trees bore none."

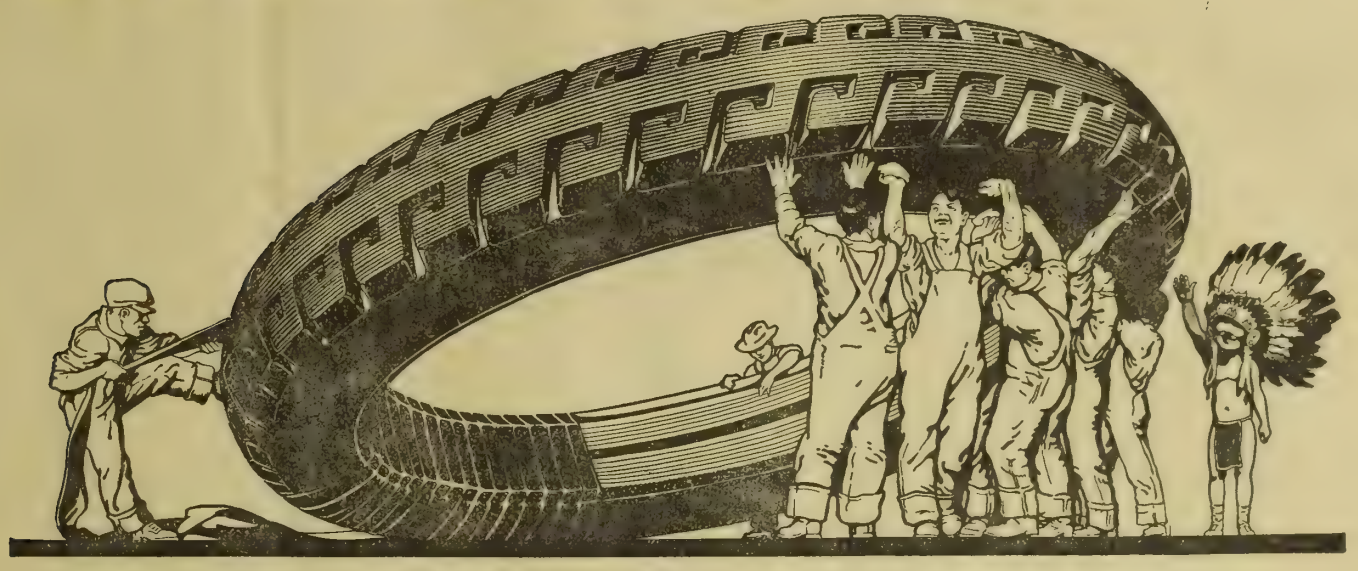
"In 1913 the writer made another experiment on a sterile pear tree. He used: water 20 liters (about four and a half gallons) and five grams (about one-sixth ounce) of each of the following: superphosphate, sulphate of potash, nitrate of soda, and sulphate of iron. The tree absorbed more than 50 liters (about 11 gallons) of this solution just before flowering. It flowered profusely and bore fruit. A lilac was treated in the same manner and produced a larger number of finer flowers."

CONTRABAND COTTON FROM JAPAN

State quarantine officers have found cheap imitation baseballs "stuffed" with "cotton seed hulls." These baseballs, manufactured in Japan, are being sold through Japanese merchants in Bakersfield.

Cottonseed huls are contraband, being proscribed by both the federal and California law, due to the great danger of carrying the eggs, worms, or adults of the dreaded boll weevil or the pink bollworm. In the case of the "baseballs" the eggs of either of these destructive pests could easily be introduced and cause untold losses to the cotton industry of the state.

THE NEW SAVAGE CORD



A BIG, HUSKY TIRE

FOR THE FARM

Nowhere is a good tire, a dependable tire, an economical tire, a wiser investment than on the farm. The practical farmer of today realizes that he needs the best tires on the market.

You will naturally expect unusual performance from Savage Cords, and will get it. The mighty Savage Cord has the strength for resisting severe wear and tear of country usage.

BECAUSE

There are very good reasons for this—

Greater strength is built into them by using only the very best materials and providing from one to two more plies of cords than is the general practice in most makes of tires.

WEAR-RESISTING

The Savage Cord Tread is ideal—it is non-skid, firmly grips the road, delivers the engine's full power without loss of speed. It is tough and wear-resisting.

The Savage Cord has a bead that holds the tire firmly to the rim, preventing rim cutting, tube pinching and other common troubles.

EXTRA THICK

The side walls are extra thick so that rut wear will not destroy the tire prematurely on rough roads.

And Savage Cords are handsome. This attractive appearance is not incidental; it is an outward expression of inbuilt quality.

SAVAGE CORDS

give unusual service because unusual materials and methods are used in their construction. Hand built to the smallest detail, they carry two extra plies of special fabric, absolutely pure gum friction cushion and side stock, and a tough, elastic tread.

We guarantee that not an ounce of shoddy or adulterants is used in either casing or tube.

The mighty Savage Cord is more than a big, husky tire. It is better than a merely good tire. It is greater than a tough tire. It is finer than only a handsome tire. It is Built to Excel and embodies all of these. It is considered by many experts the foremost tire in the Cord Tire world.

ASK YOUR LOCAL DEALER

BUILT TO EXCEL

THE SPRECKELS "SAVAGE" TIRE CO. SAN DIEGO, CALIFORNIA.

OUR BEST ASSET IS THE SATISFIED CUSTOMER

TEAGUE TREES

THE STANDARD FOR QUALITY

They Give Satisfaction Wherever Planted

CITRUS TREES

Grown from selected buds on sour orange root. They are the best that money can buy.

AVOCADOS

All of the recommended varieties budded on hardy Mexican Seedlings.

FEIJOAS

Grafted trees from the best large fruiting varieties.

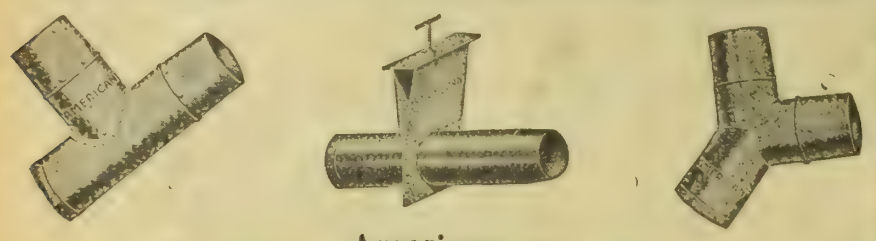
Send for our descriptive price list and let us figure on your requirements whether it be for one tree or a thousand.

ADDRESS

The R. M. Teague Nurseries

Box A San Dimas, California

Founded in 1889 by R. M. Teague



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Double Lock Seam Surface Pipe

Is the Most Durable Pipe Made

Write for Price Lists of Our Well Casing
Galvanized Tanks and Double Dipped Pipe

AMERICAN STEEL PIPE AND TANK CO.

354 Pacific Electric Bldg. LOS ANGELES, CAL.

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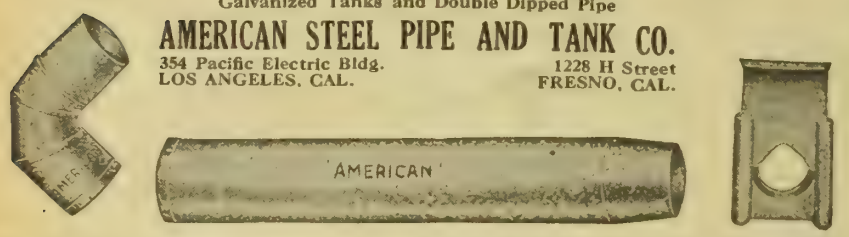


TORO BRAND AGRICULTURAL SULPHUR

Improves alkali soil, transforms potash and phosphorous into plant food. Prevents wire worms, smutty grain and potato scab.

220 lbs. per acre has increased crops up to 500%.

Write for circulars 6, 7 and 8, price list and samples.

DIAMOND "S" BRAND for Lime-Sulphur Solution. ANCHOR BRAND for dry dusting. CARBON BISULPHIDE for rodent control.

SAN FRANCISCO SULPHUR CO.

624 California St., San Francisco, Cal.

Plant Winter Rhubarb

FOR PROFIT

Growers netted this year $1000 per acre. This is the best time to plant for full crop next winter and spring. We can supply plants—all sorts for large fields. Write for price list.

J. B. WAGNER

Rhubarb and Berry Specialist, Pasadena, California.

FRESNO DUST SPRAYER

Latest Type Efficient
Durable Reliable

Write

Cushman Motor Works
844 E. Main St., Stockton

SEEDS

SEND FOR OUR CATALOG

Aggeler & Musser Seed Company

620 So. Spring Los Angeles, Cal.

ADAMS PIPE WORKS

New and second hand pipe and casings. Riveted steel pipe, valves and fittings. Mail orders given prompt attention. Write, phone or call.

2025 Bay St., Los Angeles, Cal.

TREES

Of All Kinds

Deciduous

Citrus

And Ornamental

Vines & Roses

Let us have your name and address and we will mail new Price List when printed

Geo. C. Roeding, Pres.

Fancher Creek Nurseries

Fresno, Cal.

When Writing Advertisers Mention California Cultivator.

Protect Walnuts

THAT Bret Harte was right when he declared, "We are ruined by Chinese cheap labor," is indicated by the fact that the Orient is selling walnut meats in New York and San Francisco for exactly the cost of shelling and packing them in Southern California.

This vital point is brought out by Carlyle Thorpe, general manager of the California Walnut Growers Association, in backing his protest against the walnut tariff established by the ways and means committee in the Fordney emergency tariff bill. Mr. Thorpe contends that unless the bill is amended in such a way as to afford the walnut growers of this state adequate protection from foreign competition the $100,000,000 walnut industry of California will face destruction.

As established in the Fordney bill, the tariff for shelled walnuts would be five cents per pound, with two and one-half cents tariff on unshelled walnuts. This tariff, Mr. Thorpe insists, is not sufficient to offset the advantage enjoyed by Orientals and Europeans in the matter of producing walnuts. In Southern California walnuts are intensely cultivated on valuable land. In China, Manchuria, Italy and France they grow on hillsides, in back yards or along roadsides. The cost of harvesting them in the Far East is ridiculously low.

According to economists who have made a study of foreign labor conditions, most of the nut meats which are shipped to this country are handled by decrepit old men and women who crack and sort them for less than two cents per pound. California laws require that women in the walnut by-product factories be paid $16 per week. This runs the cost of sorting and packing up to 20 cents per pound, which Mr. Thorpe says is the price at which foreign meats are now being sold here.

In discussing the tariff for citrus fruits the ways and means committee recently took into serious consideration the advantage enjoyed by Italian and Sicilian competitors who are able to cultivate, harvest and pack their crops for an insignificant part of the cost of producing oranges and lemons in this country. Experts on tariff were agreed that the only fair basis upon which to establish the new tariff was one which would offset the differential in cost of production.

"If that principle were applied by the ways and means committee to the walnut business, California would undoubtedly be given a tariff of four cents per pound on unshelled and 12 to 15 cents per pound on shelled walnuts," says Mr. Thorpe. "The tariff proposed in the Fordney bill, when we deduct the cent a pound increase in freight rates, is even less than the old Payne-Aldrich tariff bill allowed the California walnut industry."

The ridiculous features of the Fordney bill are pointed out by Mr. Thorpe, who calls attention to the fact that a tariff of three cents per pound is placed upon unshelled peanuts while walnuts are only given a tariff of two and one-half cents. This, despite the fact that 38,829,395 pounds of foreign walnuts came into the United States in 1920. This is dangerously close to the total tonnage produced by California.

"It must be taken into consideration by our congressmen and senators," says Mr. Thorpe, "that the California walnut industry has been doubling itself every four years for 12 years, and that if foreign competition is allowed to continue without proper regulation the California industry will soon be throttled. If the Fordney bill, with its low tariff on walnuts, should be adopted by the senate, and the California industry should increase in the next four years as it has in the last four years, it is altogether likely that the California crop will be a drug on the market, dammed up in the warehouse while floods of cheap European and Asiatic walnuts are glutting the markets."

Speaking of comparative costs of production, Mr. Thorpe says that the labor cost alone is 9.73 cents to produce a pound of walnuts in California, while France grows them for 2.43 cents, Italy for 1.08 cents and China for .53 cent per pound.

Telegrams protesting against the walnut tariff in the Fordney bill are being sent from Southern California by thousands. All of the local associations in the California Walnut Growers Association are wiring Senators Shortridge and Johnson and Congressmen Osborne, Swing, Lineberger and Free to exert every effort in securing a satisfactory amendment of the measure. Many chambers of commerce are adding their voices to the storm of protest against inadequate tariff for California's second largest horticultural industry. Mr. Thorpe urges everyone to telegraph his congressman or senator to insist upon a more suitable tariff for California walnuts.

WINDBREAKS WOULD HAVE SAVED LOSSES

By G. H. Hecke, Director of Agriculture

Aside from the labor involved, the planting of windbreaks is inexpensive when compared with the vast and needless losses suffered through wind and fire.

The California department of agriculture and the California forestry commission stand ready and willing to aid any community, fruit grower or cattle man with advice and suggestions as to varieties of quick growing trees for windbreaks, planting and maintenance.

Lack of Windbreaks Expensive

With an approximate damage to fruit, range and communities through fire and wind since June 25 of over ten millions of dollars, it is safe to assume that fully one-half of this vast loss to the state might have been saved through the moderating effect of windbreaks.

Confronted with the costly experience of the past few days, the state department of agriculture suggests again that the important question of windbreaks be taken up by communities, cooperative associations, chambers of commerce and boards of trade throughout the state that such future needless and preventable holocausts be averted for the sake of ourselves and for the sake of the coming generation.

Let us now form a workable program for Arbor Day, 1922, in order that a systematic campaign to this end be established.

ALMOND FIGHT NOT GET WON

Speaking of the effort to secure a just tariff on almonds, President Geo. W. Pierce, of the California Almond Growers' Exchange, says:

"Adoption of the minimum five and fifteen cent schedule asked for by the growers is absolutely necessary to save the American shelled almond market from control of the peasant produced commodity of Southern Europe.

"Because the 4 and 12 cent schedule was an increase over the original 4 and 8 cent provision in the Fordney bill, the false impression prevails throughout the state that the almond farmers won a victory in their life and death struggle to save their investment of millions of dollars and years of unproductive labor from the disastrous effects of foreign competition.

"Failure of the house to heed the plea of California's congressmen for the necessary 5 and 15 cent schedule was a bitter disappointment for us and a distinct victory for Southern European almond interests who now control the American shelled almond market.

"We plain farmers did not play the usual political game of asking for more than was necessary and then accepting a lower figure at the last minute. Instead we employed university experts to study our needs and decide on conservative figures. Their report was for a 5 and 15 cent schedule on unshelled and shelled almonds, based on the natural 3 to 1 shelling ratio of the nuts. That was our demand, an absolute minimum figure, not a maxi-

mum that would bear compromise or cutting.

"Our congressional delegation forced the house to recognize the justice of our claims by establishing the principle of the 3 to 1 ratio, but the ways and means committee failed to express that ratio in the imperative minimum figure of 5 and 15 cents."

California has 100,000 acres planted to 7,000,000 almond trees, representing an investment of $65,000,000.

FIG PACKING SCHOOLS

Arrangements have been completed by the California Peach and Fig Growers for special demonstrations of methods of packing fresh figs during the first week in August. George F. Sykes, inventor of the Sykes system of packing, will give the demonstrations and members of the association are invited to be present. An itinerary has been arranged which will take Sykes into the principal growing sections and he will demonstrate daily the proper methods to pursue in shipping figs fresh.

The experimental carload of fresh figs sent east by the California Peach and Fig Growers demonstrated that properly packed and loaded, figs can be shipped long distances and will arrive in perfect condition. The experiment also proved that good prices can be expected for the fruit.

It has been deemed essential that the growers adopt a uniform pack in shipping and the coming demonstration, it is believed, will serve the purpose of standardizing the package.

Fruit men of long experience are confident that the adoption of a standdardized pack and proper shipping methods means the establishment of a new and lucrative outlet for California figs.

Itinerary arranged: August 1, 2 P. M., Winters; August 2, 10 a. m., Sanders Calimyrna Orchard, one mile north of Modesto city limits; August 2, 2 p. m., Acock Calimyrna Orchard, Ceres; August 3, 10 a. m., Fig Packing Plant No. 3, Merced; August 4, 10 a. m., Markarian Fig Gardens, Fresno; August 4, 3 p. m., California Peach and Fig Growers Plant, Reedley; August 5, 10 a. m., orchard of E. C. Dewhirst, Sultana.

PLACER COUNTY WAGE SCHEDULE

Placer County farm bureau has adopted the following wage schedule:

Unskilled labor, 35 cents per hour.

Packing cherries, 20 cents standard box and single faced lug.

Packing cherries, 25 cents double faced lug.

Packing plums, 6 cents per crate.

Packing wrapped plums, 6 cents per box.

Packing lug plums, 6 cents per box, graded.

Packing peaches, 2½ cents per box.

Packing pears, 6 cents per box.

Packing grapes, 5 cents per box, cleaned.

Making peach and solid crates, 24 nails, 75 cents per 100.

Making pear crates, 28 nails and cleated, $1 per 100.

EXAMINATIONS FOR HORTICULTURAL COMMISSIONERS

Examinations for county horticultural commissioner and deputy county horticultural commissioner will be given on the following dates: Los Angeles, August 15-16; Fresno, 18-19; San Francisco, 22-23; Sacramento, 25-26; Red Bluff, 29-30. Salary of commissioner shall not be less than $6 per day and deputy not less than $5. A successful candidate will be eligible for five years after date of examination for any county. Further information may be secured from Director of Agriculture, Sacramento.

FRESH FIGS TO THE PRESIDENT

Acknowledging the gift of fresh figs from the first carload shipment recently sent from the state to eastern markets, President Harding wrote to Congressman H. E. Barbour of Fresno:

My Dear Mr. Barbour: Thank you, and through you the California Peach and Fig Growers, for this box of fresh figs. We are enjoying them hugely and are delighted to learn that at last your California people have found a way to ship their dainty fruit commercially. It will be one more addition to the number of delicacies that California enterprise has made available to people everywhere. Sometimes I wonder how generally people realize their obligation to you Californians for inventing the means by which to serve fresh perfect fruits everywhere and in all seasons. In building your fruit industry you have not only served the consumers but promoted fruit interests all over the world. I am glad to hear that the outlook is good for an early emergence of the California fruit business from the depressed conditions that lately have been hampering it.—Most sincerely yours, Warren G. Harding.

SAN LUIS OBISPO A FRUIT COUNTY

Horticultural Commissioner Harold E. Alley of San Luis Obispo County reports:

San Luis Obispo County is fast dedeveloping into a fruit and nut county. During the year 815,030 fruit and nut trees were planted. Besides these, there were enough other trees, plants and vines planted to make a grand total of 1,071,781 pieces.

In comparing the 1921 with the 1920 inspections, almonds lost 90,987 trees, all fruits but peaches and prunes decreased; there being 95 more peaches and 78,620 more prunes in 1921, the number of prunes increasing two-fold. Grapes increased ten times and berries doubled. The great increase in ornamentals was due to the large plantings which were put in on the W. R. Hearst Ranch at San Simeon.

STATE POLYTECHNIC SCHOOL

The management of the state polytechnic school at San Luis Obispo writes that the school is prepared to enroll next year only about 300 students, and that it is advisable for prospective entrants to the technical courses to put in applications for admission immediately for the term opening early in September.

"The state polytechnic school prepares you for life. You have the advantage in this school of finding out whether you would like to learn a trade, get practical training in agriculture, or would rather take up a profession. If you prefer the last the state polytechnic school diploma admits you to the university."

PLANTING ALMONDS IN SAN LUIS OBISPO

San Luis Obispo County orchards made heavy plantings of almond trees again this year, 567,238, according to report of County Horticultural Commissioner Alley. Last season's planting was 658,223. Grape vines planted totaled 67,404 as compared with 6,976 the preceding year. Prunes were also heavily planted, 149,246 trees this year; 70,626 last year.

OLIVE CROP REDUCED

G. H. Flournoy, county horticultural commissioner of Tehama County, reports that county's outlook much lighter than estimated at time of heavy blossom.

Under date of June 13, Chas. F. Collins, county horticultural commissioner of Tulare County, states that further investigation of rain damaged olives in his county indicate a 1921 crop of about 40 per cent of normal.

The Willamette Valley Prune Association of Salem, Oregon, will establish pools for handling loganberries for its members and for outsiders. The berries will be evaporated.

KIRKMAN NURSERIES

Reliable Trees and Vines

For Commercial Orchard and Vineyard Planting

Deliveries made direct from nearest propagating plant. To serve the orchard and vineyard planters of California to the fullest satisfaction and efficiency is our aim. We are gratified to have entrusted to us the future of small orchards as well as the large projects. One acre of Kirkman Trees will draw to us greater future plantings. One California orchard has taken two hundred and fifty thousand of our trees. Another four hundred thousand trees. Another six hundred thousand trees and vines together. They have reservations with us for their next season's plantings. The Ex-Governor of Coahuila, Mexico, named his immense project "El Fresno" in honor of our deliveries of nursery stock. We plan to serve every customer so satisfactorily that his future profits will be assured. Correspondence solicited.

Kirkman Nurseries

Fresno, California

Member of Nurserymen's Bud Selection Association of California

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Diseased Liver in Rabbits

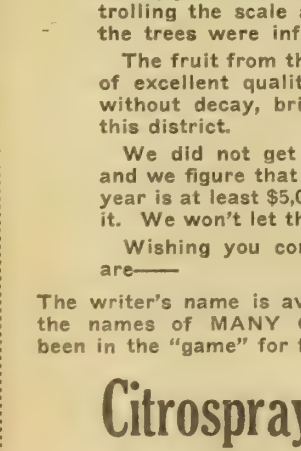
Kindly tell me what makes spotted livers in rabbits? Occasionally when I kill one it has light spots on the liver. What will cure it?—Subscriber.

There is no satisfactory treatment of liver trouble of rabbits other than thorough cleanliness, dry quarters, disinfection. Reduce or discontinue green feed and feed only on clean fresh grain and well cured alfalfa.

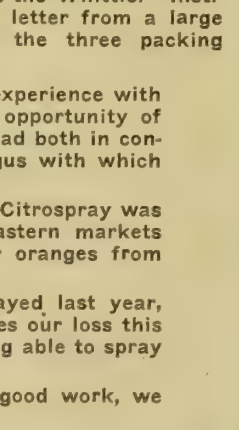
This Fixture $5.50

A very popular two-light fixture, similar to the one we illustrated last week which had three lights—has "brushed brass" pan supporting two lights with art glass globes. A noticeable buy at this price.

This Fixture $15.00



The handsome living-room fixture illustrated to left, with three massive chains which support the tinted art glass bowl and three outrider lights, combine the advantages of direct and semi-direct lighting.



House Wire, $1.00 Per 100 Feet
No. 14 insulated wire, outside wire or inside wire at same price.
Plug Fuses, 5c each, 10, 20 and 30 Amp.
Split Knobs, $3.50 Per 100
Concealed Rosettes, 20c each.
Loom, 4c foot.
Entrance Switches, 85c.
Snap Switches, 40c each.

Electric Door Bells, 65c each.
Cleat Receptacles, 18c each.
Lamp Cord, $2.00 per 100.
Solid Knobs, $2.50 per 100.
Key Sockets, 35c each
Flush Switches, 40c ea.

Write For Electrical Catalog

Schumacher Wall Board $40

By special arrangement we are offering the factory seconds of this splendid board at this remarkable price. A large stock of this board in 6, 7, 8, 9, 10, 11 and 12 ft. lengths 48 inches wide.

Use it for interior finishing or exterior work; it's proof against damp, heat and cold. In these seconds one side is in good shape.

Whiting-Mead Commercial Co.

Lumber, Sash, Doors, Builders' Hardware, Plumbing, Etc.
Everything for Your Building

415 E. Ninth St. Los Angeles

REFUTATION

Despite statements to the contrary emanating from sources which ought to be reliable, we are able to prove, by statements of PRACTICAL GROWERS and PACKERS that one spray compound containing arsenic has caused none of the deplorable and disastrous results reported with such gratuitous concern by experts at the Whittier "Institute," in witness whereof we offer the following letter from a large and successful citrus grower and manager of the three packing houses:

Replying to your inquiry regarding our experience with Citrospray, will say that we welcome this opportunity of telling you of the splendid results we have had both in controlling the scale and cleaning up the fungus with which the trees were infested.

The fruit from the orchards sprayed with Citrospray was of excellent quality and arrived in the eastern markets without decay, bringing the top prices for oranges from this district.

We did not get all of our orchards sprayed last year, and we figure that on one orchard of 12 acres our loss this year is at least $5,000 on account of not being able to spray it. We won't let this occur again, however.

Wishing you continued success in your good work, we are——

The writer's name is available to anyone who is interested; besides the names of MANY OTHER PRACTICAL GROWERS who have been in the "game" for from 10 to 30 years.

Citrospray Chemical Co., Ltd.

2205 Santa Fe Avenue

Phone 41645 Los Angeles

Canada Thistle

Here is a little experience with Canada thistle to cheer your correspondent. Once upon a time on an eastern farm there was a field of oats badly infested with Canada thistle. To the fancy of the boy who shocked the sheaves the thistle stalks about equaled the grain. Note that the crop was harvested when the thistles were in full bloom. The following season on that same field the thistle stalks might have been counted on your fingers. So cheer up. I might mention that the Canada thistle is said to have come from Europe—Albert Jackson, Upland.

Stock Land Bank

Can you tell me if there is a federal loan bank in Los Angeles and where it is? And will they loan one money to put up a house on a five acre tract?—Subscriber, Torrance.

The federal farm loan bank is located in Berkeley and has no branch in Los Angeles although there are several farm loan associations which operate through the farm loan bank. There is, however, a joint stock land bank operating in connection with the Bank of Italy, corner of Seventh and Broadway, Los Angeles, which makes some long time loans. Also the address of one of the federal farm loan associations is H. O. Gardner, Bradbury Building, Los Angeles.

Foxtail

I am enclosing a specimen of grass that is bad in the alfalfa and in time destroys it. Would like to know some method of control. Would harrowing destroy it and would it be beneficial to the alfalfa? It seems much worse where the water comes on to the land at first and consequently where it stands the longest. Is this conducive to ranker growth in this particular grass?—Subscriber, Lankershim.

This is one of the foxtail family although not the most perplexing by any means. It is an annual and fairly easy to eradicate. This fall, say early in November, set your disk so as to cut nearly vertical, thoroughly disk the ground and seed with about 30 pounds of barley to the acre. If there are spots which are completely bare of alfalfa a little hand sowing of alfalfa would prove beneficial. Let stand without pasturing through the winter and when the barley is in the stage for making hay, cut alfalfa, barley and all and it will be found the foxtail has almost entirely disappeared and the next cutting should give a high grade of alfalfa hay.

Church Paying Taxes

Does a church pay taxes on real estate? Again, does it pay taxes on improvements on said property if same is used as a church?—Subscriber, Walnut Grove.

A building used exclusively for religious purposes is tax exempt in California. Some churches, however, prefer to rent portions of their buildings for other purposes and in such cases are taxed exactly as is other property.

Horse With Cough

I have a three year old filly that lately has developed a dry cough. She eats and acts all right but it is annoying to hear this cough. She has had alfalfa and rolled barley but lately no barley.—Subscriber, Orland.

The best information we have touching upon this question is in "Diseases of the Horse" by the U. S. department of agriculture. Touching upon chronic cough this report says: "A chronic cough may succeed the acute diseases of the respiratory organs, such as pneumonia, bronchitis, laryngitis, etc. It accompanies chronic roaring, chronic bronchitis, broken wind. It may succeed influenza. * * * Cough is but a symptom and not a disease in itself. Chronic cough is occasionally associated with diseases other than those of the organs of respiration. It may be a symptom of chronic indigestion or of worms. In such cases it is caused by a reflex nervous irritation. The proper treatment in all cases of chronic cough is to ascertain the nature of the disease of which it is a symptom, and then cure the disease if possible, and the cough will cease."

Black Mildew of Vine

We have a few vines in our Muscat vineyard on which are spotted leaves drying up. Some people call this black mildew. I have tried sulphuring but it seems to do no good. Is this the proper name for this trouble and what must one do to cure it?—Subscriber, Selma.

The trouble described has been called black mildew, Spanish measles, red leaf disease, etc., and so far as we know the cause is yet to be discovered and the cure is still more uncertain. Vineyards throughout the San Joaquin Valley have been showing this trouble for several years but it is rare to find the same vine afflicted two years in succession. The application of sulphur or other sprays has little, if any, effect on the diseased vines, and the only recommendation which can be given at the present time is to improve the general cultural conditions in the vineyard, meaning the application of manure and fertilizers. Irrigation should be taken into consideration, assuring the vines plenty of plant food and sufficient water at all times that this food is made available to the plant.—F. K. H.

Soil and Water Conditions

A corner of ranch is sandy, and walnut trees once there are nearly all gone and the rest are not doing well. What trees would you advise? Have thought of peaches and grapes. Are plums and apricots good in light soil? Do all grapes need sulphuring? What varieties for early market of any of above do you recommend?—Subscriber, Clearwater.

It appeals to us that the first step in this case is thorough examination of soil and water conditions. While the soil is sandy this may only be a surface condition, and two, three or four feet underneath the surface may develop a subsoil of heavy 'dobe and possibly heavily impregnated with alkali. Unless soil conditions are entirely satisfactory then it may be well to take soil specimens to a depth of at least four feet, perhaps six would be better, and put these specimens of soil in the hands of a chemist who will be able to determine alkali or other deleterious content. Also, if there is any question as to the water used in irrigation, that might be examined and perhaps you might find that through drainage or use of a different irrigation water such walnut trees as are not dead may be restored. Once the soil conditions are determined then varieties would be much easier to decide upon.

Grafting Figs

Answering question as to caprifying and methods of work to secure a full crop of Smyrna figs, G. P. Rixford of the department of agriculture writes:

"This is the season for budding. Grafting is usually done in March or April. The fig tree can be grafted by any of the methods used for other fruit trees, the only precaution to bear in mind is to use two year old wood for scions. It has been found from experience that if new wood is used, it being soft and pithy, only a portion of the grafts will take, but if two year old wood is used and the work is carefully done, 95 per cent of them will grow. We do not recommend the grafting of a capri branch into the Calimyrna tree in orchard practice, for the reason that the tree carrying the graft would get most of the insects, and also for the reason that some of the capri varieties fail to carry the over-winter crop, and in that case caprifigs would have to be secured elsewhere; and also, a caprifig crop sometimes suffers from frost, as it has during the past winter in large areas in the San Joaquin and Sacramento Valleys. We therefore recommend that in orchard practice the caprifig trees be planted in a group by themselves, in that part of the ranch that is freest from frost, or in the vicinity of buildings or other trees that would give some protection. Your subscriber asks whether it would be advisable to insert one or two Calimyrna buds about

the same height on opposite sides of the trunk from the capri buds. I see no objection to this procedure but may remark that one caprifig branch would be amply sufficient to supply all insects necessary for his single tree."

Seasoning Eucalyptus.

A query has come as to seasoning or kiln-drying of eucalyptus lumber. This has always been a serious problem with the eucalyptus grower as the wood has checked and warped beyond all reason. We have seen no very recent suggestions as to methods of seasoning but in a "Handbook for Eucalyptus Planters," published in 1908 by the state board of foresters, we note the following hints:

"The difficulties experienced in seasoning eucalyptus timber have been a great obstacle to its more extensive utilization. It has received an undeserved reputation for warping and checking from many who have used it green or improperly seasoned. It is no more difficult to season than oak, hard maple, and many other hardwoods which are annually cut and seasoned by the mlilion feet in the Eastern states. The success attained by several experienced manufacturers proves that it yields readily to thorough methods.

"To insure successful seasoning the trees should be felled between November and March. Sawlogs should be maufactured as soon as possible after cutting, for they check quickly with exposure to sun and winds. When not to be sawn immediately they should be piled in the shade without peeling. The ends of the logs should be painted to prevent checking.

"Ordinarily sawn lumber should be loose piled under cover with abundant space for air circulation. The ends of the timbers should be weighted. By this treatment six by eight inch or larger timbers are thoroughly and evenly seasoned without warping or checking, though the wood may shrink considerably during the seasoning process. Inch boards are apt to warp in seasoning so the lumber is usually sawn into planks. The heartwood is more apt to check than the sapwood.

"Air seasoning produces better results than kiln seasoning. Air dried lumber may be used in a year, but two years' seasoning gives better results and is generally practiced."

Cover Crop in Walnut Orchards.

Is there a particular cover crop more beneficial than another for walnut trees? Is there one that would benefit the trees and at the same time furnish forage for chickens?—Subscriber, Lankershim.

No, the principal consideration is tonnage. That is, in speaking of cover crop and green manure combined. We imagine one of the principal benefits to soil from the use of green manure crops is betterment of the physical condition, and for that reason barley, rye, or other rank growing crop does well. However, there is an additional advantage in the leguminous crops in that they secure nitrogen from the air and add to the soil nutrients. However, a cover crop either for the purpose of shading or preventing soil washing may be of malva or other native and natural growth, the grains or any of the legumes, using care to choose a crop adapted to the location. As to a forage for the chickens at the same time it is the same as with any other crop. Success as a cover or green manure crop can not be had where poultry eats down the new growth. The clovers and practically all the legumes make excellent forage for the chickens.

Anthracnose of Avocado

Several named varieties of avocado have been discarded even for home planting, because they develop a brown spot on green skinned varieties that cracks and rots. These nearly always appear near the blossom end of the fruit. Investigations in Trinidad, West Indies, bring to light the fact that this disease is very similar or closely related to anthracnose of the mango (Gloeosporium or Colletotrichum). The report states:

"It is almost impossible to buy an avocado in the market that is not more or less attacked by the disease. As the fruit is eaten at once the disease does not cause serious loss, but if the fruit is packed for export they will rot in a few days. The disease first shows itself by the formation of a brown spot. If the attack takes place when the fruit is green the brown spot does not spread, a slight depression forms, and cracks appear all around the edge. If the attack is serious the young fruit falls before it is ripe; otherwise the fruit may ripen, but the skin cracks around the brown spot. When the fungus attacks fruit with a tender skin it penetrates the pulp and may extend to the seed, and the fruit gradually rots. A Bordeaux mixture spray should be used to combat the disease."

POTATO GRADING EFFECTIVE

F. W. Read, chief of the standardization service of the state department of agriculture, is highly gratified at the results secured for potato growers by the grading and shipping point inspection and through the adoption of the U. S. standard. The department and shippers are receiving commendatory letters because of this advance step taken by the department and California growers. We are permitted to quote from some of the letters as follows:

"The potatoes you have shipped into this market this season have been exceptionally fine and well graded. We notice that you are using the U. S. No. 1 grade and if the fact that you are using this grade is the reason for the stock being as good as we have received, certainly hope that you will continue to use the U. S. No. 1 grade. The buyers here have all commented favorably upon your potatoes and in some instances have been willing to pay a little more than other shippers were quoting to get your grade. I returned this week from a trip through the New Mexico territory and heard the same comments by the jobbers in Albuquerque and Las Vegas. I wish to emphasize very strongly the fact that the jobbers appreciate your shipping the U. S. No. 1 grade and you can see by the increased amount of business that we have sent you over last year that it has been of assistance to us in selling your potatoes."

* * *

"We wish to compliment you upon the grade and quality of the potatoes which you have shipped this year. It is certainly a pleasure to solicit business for this sort of stock. Everyone of our dealers who bought potatoes from us has been highly pleased with the grade and quality, and each shipment has meant a repeat order as soon as the goods were unloaded. Of course, as you know, it has been necessary for us to exact a premium for these potatoes over the quotations of other shippers, but the dealers admit to us that our stock has been worth the difference. It took considerable argument and persuasion at the start of the season to convince them of the superior grade and quality of our stock, and in view of the lower prices quoted by competitors, the volume of our business has not been as heavy as it would have been had the dealers known at the start the good work that you were doing at that end of the line in taking care of the grade in the manner in which you have.

"We trust that you will continue your policy of grading your future shipments, and we know that it will result in an increased demand at higher prices than is possible to obtain for ungraded stock. As soon as the dealers fully realize this it will be a much easier matter to secure a premium on such shipments."

FIXING SAND DUNES

By Ernest Braunton

The problem of fixing shifting sand dunes is a serious one in all parts of the world, and a list of materials to use, in succession, for reclamation of moving beach sands has brought to light details of hard yet successful struggles on the part of the planter.

Golden Gate Park, San Francisco, is a magnificent living monument to the persistency and untiring efforts of John MacLaren, superintendent for the past third of a century. "If you would see his monument, look about you." may be read on a tablet recently placed in the park. The first work done by MacLaren was the planting of "beach grass," a member of the timothy tribe, known to the botanist as Ammophila (Calamagrostis) arenaria. Recent experiments have proven that Napier grass, from Africa, one of the millet tribe, and by name Pennisetum purpureum, is second to none as a seaside windbreak, so it is beach grass first and nearest the water to fix the sand, and Napier grass across the wind's path, to stay its fury.

Arundo Donax, the giant reed, common to all parts of California along waterways, is another "sure" windbreak and sand-stayer. In hardwood shrubs or small trees any species of tamarisk will grow but the evergreen species recently introduced (Tamarix articulata) seems the best. Parkinsonia aculeata, the palo verde, Acacia latifolia, Albizzia lophanta, Robinia pseudo-acacia, or locust tree, should be next in order of planting. Then may come Pinus radiata, the Monterey pine; Pinus halepensis, Aleppo pine; Eucalyptus viminalis and E. globulus. Our sand is now fixed and forested but sand alone will not maintain the trees, and fertilizers are needed or dwarf and stunted growth will result. After these species are fixed and fed, any plants will grow if proper soil is given, but a high standard of fertilization must be maintained to insure permanent success.

SAVE THE LANDMARKS

California is becoming a thickly settled state and its chief cities are expanding at a phenomenal pace. Ancient landmarks are lightly removed by the newcomer who sometimes becomes a "ruthless invader." In some cases landmarks are destroyed through ignorance of their value. This is true in many cases even after vigorous protest is made.

The largest white sapote tree (casimiroa edulis) in California was recently cut down by a real estate firm in the suburbs of Los Angeles after hundreds had protested its destruction.

It stood at a point where it was unusually conspicuous and could have been saved without change in the plans for subdivision of the tract. Such action is clearly vandalism, for much capital could have been made of its size, age and value. A sign on the trunk stating what it was, etc., would have proved attractive to lot purchasers and of decided value to the tract, to the neighborhood, and, to a small degree, to the world at large.

But one other of like size grows in California, and that one is on the Landenberger place near Anaheim, where it doubtless will long remain, noted as "the largest sapote tree in the United States." As such it has a far greater value, both real and sentimental, than the mere land it occupies, for it bears fruits both rare and luscious.—E. B.

JAPANESE LANDSCAPES

Geo. C. Roeding, writing from Kioto, Japan, recently, says: "Wish you could see some of the Japanese gardens I visited today. They are backed up by hills covered wirh cryptomeria and cypress. The gardens are charming in every sense of the word and I am sure you would revel in the scenery of Japan. Kioto is the ancient capital of Japan, a most interesting place. Whether in the valleys or on the mountains, the country is always green with verdure. There is never a dearth of water here."

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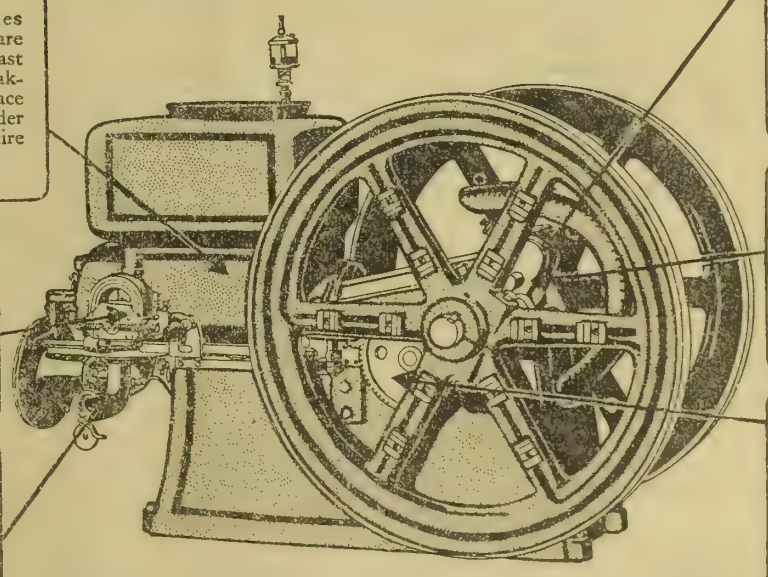

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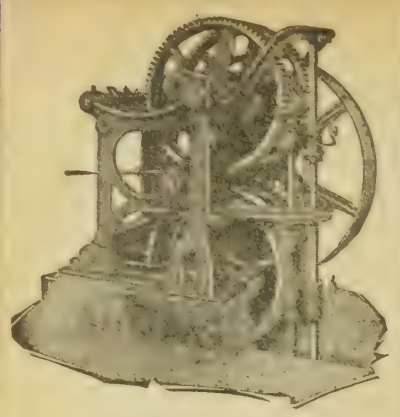

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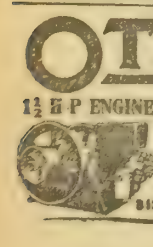
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LIFTING YOUR HEAD

To lift your head and say—
I am beyond the storm today!
This is the pride becoming to one's life
In the mad world's rude strife.
This is the power that many envy kings.
He also has it in whose spirit sings
The joy of an abundant faith in being
A child of the sunbright seeing.

To lift your head and cry—
I have been wounded, but I shall not die!
This is the faith that makes
Martyrs of men for helpless creatures' sakes;
This is the spirit of herohood more sure
Than all the actions men applaud with cheers—
For this beyond the action shall endure,
And be remembered in immortal years.

To lift your head above
The blight of blowing winds and keep
Steadily onward with unfaltering love—
This is the gift that leads one to the steep,
That guides the footsteps where
The angel of victory sets her deathless light
To lead men to her height—
Men who can lift their heads and say—
I am beyond the storm today!
—Folger McKinsey.

A HOME FOR JACK-O'-LANTERN

By Edna Tucker Muth in Youth's Companion

IN the little chapel of St. Barnabas Ruth Keniston and Ermina Vincent, first-year nurses in training, sat side by side.

As Ruth listened to the reading of the hymn she heard Ermina catch her breath in a sigh that was almost a gasp.

"What is it, Ermina?" she asked, gently shaking her friend's arm. "What are you worrying about?"

"A home for Jack-o'-Lantern," Ermina answered. "It's his last week here, and I'm almost desperate."

There was no time for Ruth to speak. They rose with the little choir, and the sound of young voices overflowing the dim chapel echoed along the corridors of the hospital.

"Joy to the world, the Lord is come!
Let earth receive her King—"

Suddenly, from without, a voice high and clear like a bird note took up the hymn. It was the voice of a child singing in perfect time and tune. The chorus within the chapel softened until the new voice seemed to lead.

The hymn ended presently, and two by two the nurses walked briskly away to their corridors. As always, Ruth Keniston and Ermina Vincent walked together, but, not as always, they they talked in sober tones.

"A home for Jack-o'-Lantern," Ruth was repeating. "If only somebody could hear him sing before they saw his freckles!"

"That's the idea, Rufus. I'm getting up a sort of scheme. Don't ask me or you'll be abetting me in it, but with or without abetting I'm going to find a home for Jack-o'-Lantern. Yes'm!"

Ruth stood still and shook a finger warningly.

"Then sit right down and count ten, Mischief," she said. "O Ermina, I'm just as anxious as you are! I suppose I ought to nip your scheme by asking about it, but I won't."

"Five people have been up here to see him in the last two weeks!" moaned Ermina. "Five people, who went off and took little dimpled things without any backbones, but with lots of curly hair or with flashing black eyes. There Jack sits in 211, getting stronger every day and perfectly sure that he'll have a father and a mother and a home when the right time comes. I've promised him that. I would be dreadful if I couldn't get him a home. If he goes to some institution next week, I'll lie down and kick and scream."

Ruth smiled as she walked toward the diet kitchen. She was used to Ermina's impulsive threats. She had acted as Ermina's pilot in the first stormy days of probation and had helped her sail through with colors flying. She had been present when even Ermina's pleasure loving guardian gave her due praise for perseverance, and in Ruth's own pleasant home there was no guest more welcome than Ermina with her gay laugh and tumbled curly head. Lieut. Bob, Ruth's brother, once said, "I like to see a butterfly make good." He had taken Miss Leech, the superintendent of nurses, to dinner, and they had talked of Ermina.

"She is wonderful with children," Miss Leech had said.

"I was a lonesome youngster myself," Ermina told Ruth. "No one helped me to play. Perhaps if I had had more fun in that gloomy old house watched over by servants, I should not be overdoing it now."

Three weeks before this morning in the chapel, the charity ward at St. Barnabas had overflowed, and Jack and Ralph, two waif patients, had been moved to room 211 in the children's corridor of the new building. In this two-bed room Jack now sat erect singing to himself. As Ermina put down his tray, he smiled at her, and it was not hard to see why she had given him his name. Under very light blue, white lashed eyes spread a mouth of generous proportions, always curved in a smile.

"Now, young man," she admonished him this morning, "if you want to get strong enough to run races after your bath, you'd better eat a wonderful breakfast. One to get ready! Two to keep steady! Three to eat bready! Go! Ralph, what do you think the fairies will bring you if you don't eat oatmeal?"

"Ralph doesn't believe in fairies," said Jack, with his mouth full.

"O Ralph, after yesterday and all the nice things they left by your pillow!"

"He doesn't believe in Santa Claus or fairies or anything. He just believes in people. He says nothing but people is really so."

"I'm glad you don't feel that way," said Miss Vincent soberly.

"I believe in fairies but not people," said Jack stoutly.

"So do I sometimes," agreed Miss Vincent.

"Ralph says he doesn't need any fairies," Jack went on. "He is going to get a father and a mother today."

Ermina flushed.

"Perhaps," she replied. "If the right father and mother come, he will; but if the wrong ones should come, they'll go away again."

"Five times they did that to me," said Jack.

"I think if I were a boy and wanted a father and a mother more than anything else in the world, I should go to the fairies with it," Miss Vincent began craftily. "Everyone has to do his best for the fairies, and if one were prowling through the corridor and heard a boy singing his very best at the right time it might drop in and say, 'You can have one wish,' the way they do in books, and then a boy could come right out and tell about a father and mother and a home. Maybe he could sing a father and a mother right into the room himself without any fairies."

"How would I know one was prowling, Miss Vincent? I can't see the corridor."

"What if I should find out for you? I could stand in the corridor, and then at the right time I could come to the door and hold out my hand like this. It would be a signal, and you could begin to sing that very second. The same song you sang this morning—your very best. And maybe—mind, I only say maybe—"

"I'd like to try it," breathed Jack-o'-Lantern.

"So should I," said Ermina.

"Shall we?" said Jack.

Ermina nodded.

That day Ruth and Ermina had their hours off together in the morning, but, contrary to custom, Ermina avoided Ruth, and when they were together listened half-heartedly to her plans for the vacation that was very near.

"Are you cross about something, Ermina?" Ruth asked at length.

"Don't ask me questions, Ruthie, please don't. I'll tell you fibs if you do."

Ruth looked troubled as she stood facing her friend. Here was the old impulsive Ermina.

"Is it—" Ruth began. "Tell me, Ermina—"

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PATTERN DEPARTMENT
California Cultivator
Los Angeles

"Don't ask me! I'm having some underhand dealings with a fairy of my acquaintance, and that's all I will say. Good-by, Ruthaline!"

During the first part of the afternoon Ermina hovered about room 211. She arranged and rearranged the plants in Ralph's window; she fed the bird and at Jack's request carved a little bird from a large piece of cuttle bone; she told cowboy stories for Ralph and fairy stories for Jack. But every other minute she darted into the corridor. Ralph was expecting his new parents, and Jack his fairy, and they were often disappointed when Miss Vincent returned with neither.

Presently Ermina heard Ruth's quiet voice in the corridor. Ruth did not belong in that part of the building. What was she doing here? Ermina stood in the doorway watching her best friend's head appearing through the banisters. Ruth came up to the landing, and behind her came two people, a man and a woman. The woman was very pale and walked slowly; her hand was on her husband's arm. "She made me think of Easter lilies and telling stories after supper and eveything that's lovely," Ermina said afterwards. "But I wished Ruth hadn't brought her up."

She could not afford to hesitate, however. Her hand went behind her in the prearranged signal to Jack. As the three visitors stepped into the corridor, a burst of joyous music came from room 211. There stood the old headstrong Ermina. Any means to gain her end, and yet—Jack-o'-Lantern deserved a home.

(Continued Next Week.)

RAISIN DELICACIES

A half dozen unusual and attractive recipes. Save them and try them.

Raisin and Grape Conserve

Three cups grapes, 1 cup water, grated rind of one orange, juice of two oranges, 2 cups sugar, 3 cups chopped Sun Maid raisins, 1 cup chopped walnut meats. Mash grapes. Add water and cook until seeds separate. Rub through strainer and discard seeds and skins. Add orange rind and juice, sugar and raisins and cook until thick—about 30 minutes. Add walnut meats and cook five minutes. Pour into sterilized glasses and seal with paraffine. This makes about six glasses.

Raisin Jam

Three cups rhubarb, 3 cups sugar, 6 oranges, 1 cup raisins, ¾ cup chopped walnut meats or blanched almonds. Cut rhubarb in small pieces. Add sugar and cook until tender. Add orange pulp and raisins, cut in small pieces. Cook until thick — about 20 minutes. Add nuts and cook five minutes. Pour into pastry shells for tarts or serve as jam. This may be served as a dessert with whipped cream, if desired.

If made in a large quantity it may be poured into sterilized glasses and sealed with paraffine.

Prune and Raisin Conserve

One cup prunes, 1 cup Sun-Maid raisins, 2 cups cold water, 1 cup brown sugar, 1/3 cup vinegar, 1 teaspoon cinnamon, ½ teaspoon cloves, ½ teaspoon allspice, ½ cup chopped blanched almonds. Soak prunes and raisins over night in cold water. In the morning cook in the same water until prunes are tender. Discard pits from prunes and cut in pieces. Add sugar, vinegar and spices. Cook until thick—about 45 minutes. Add almonds and cook 5 minutes. Pour into sterilized glasses and seal with paraffine. This makes about six glasses.

Raisin Peach Conserve

Three cups dried peaches, 3 cups water, 3 cups Sun-Maid raisins, 3 cups sugar, 1½ cups chopped blanched almonds. Cut peaches in small pieces. Cover with cold water and soak over night. Add raisins and sugar and cook until mixture thickens—about 30 minutes. Add almonds and cook five minutes. Pour into sterilized glasses and seal with paraffine. This makes about six glasses.

Rhubarb Compote

Six dried figs, cut in pieces, 1 cup cold water, 6 cups sliced rhubarb, 3 cups chopped Sun-Maid raisins, 3 oranges, 1½ cups sugar, 3 bananas, sliced, 1½ cups broken walnut meats. Soak figs over night in cold water. Add rhubarb and raisins and cook until thick—about 45 minutes. Add orange pulp, sugar and bananas and cook 10 minutes, stirring often. Add walnuts and cook five minutes. Pour into sterilized glasses and seal with paraffine. This will make about six glasses.

Pineapple Marmalade

One pineapple, 3 cups sugar, 3 lemons, 3 cups Sun-Maid raisins. Pare pineapple and cut in small pieces, saving all the juice. Add sugar and grated rind and juice of lemons. Cook slowly until very thick — about 40 minutes. Add raisins. Cook 10 minutes and pour into sterilized glasses and seal with paraffine. This makes about six glasses. Two cans grated pineapple may be substituted for the fresh, if desired.

WOMEN FARMERS

The 1920 census gives us some interesting facts as to women farmers. This is the first census which has given these separate figures.

In the entire United States there are 261,553 women operating farms totaling 25,798,000 acres. Average acreage in farms operated by women is surprisingly high, 98.6 as against average acreage in farms operated by men of 150.3. Most of us probably would have guessed at five or ten acres as the average for women.

Naturally, the older settled regions show the larger percentage of women farmers. There is an astonishing number in the Old South, 115,477 in the states south of the Ohio river. The New England states shown 8,979; the Middle Atlantic, 16,835.

In the Pacific states California has 5,774 women farmers, 5,406 of whom own their farms. These women farm 834,791 acres. In Washington there are 2,433 women farmers, owning 2,261 farms, total acreage of 262,104. Oregon has 1,649 women farmers, owning 1,518 farms, total acreage of 272,682.

HINTS FROM HOUSEKEEPERS

Grape Pie—Fresno Cake

Grape Pie—We have been readers of your paper for a number of years and think it an excellent paper, in fact I could hardly keep house without it. We live on a ranch and of course we get lots of good farming information from it. I enjoy the household department, as I love to read and try the recipes that are printed from time to time.

I am sending two recipes, of which one is original. As we have a Thompson Seedless vineyard I have been experimenting on grape pies, so I have made one which we think is excellent, and I am sending recipe so someone else may try it. Of course I used the grapes that aren't ripe, just turned white, not too green:

Three cups sugar, ½ cup water, put on the stove, let boil. Stem and wash 3 pints grapes. Put them in the syrup and let boil until grapes are tender, then dissolve two heaping tablespoons corn starch in a little cold water and stir into them. Flavor with ground cinnamon. Bake in two crusts. This will make two large pies or three small ones.

If any of the readers have a better one would like to hear from them.

Fresno Cake—Am sending recipe for a cake which I call Fresno cake, as I got the recipe from Fresno, but have never seen it in the Cultivator:

One cup sugar, 1 cup flour, ½ cup ground chocolate (unsweetened), ¾ cup water, 3 eggs, 1 teaspoon baking powder. Put the water and chocolate on the stove. Let come to a boil. Beat yolks of eggs till stiff. Beat in sugar gradually, add the chocolate, then the flour which has been sifted several times with the baking powder. Last fold in the stiffly beaten whites and bake in a moderate oven about 45 minutes.

Filling: 1 cup powdered sugar, ½ cup chocolate, butter size of a walnut. Mix all together and moisten to a paste with canned milk, coffee, water or cream. Flavor with vanilla.—Mrs. Geo. Brill, Selma.

HOUSEHOLD QUERIES

Recipes Wanted.

Will some of our readers send through the household columns a recipe for plain rich cookies? What I have reference to is rich and flaky, without fruit or nuts in them, and are rolled instead of dropped on the baking sheet.

Also would like a recipe for good snails made with yeast, that have egg in.—Subscriber, Gilroy.

The Cultivator will be glad to extend subscription credit for recipes published in answer to this request. With recipe send name and address of one to whom you wish subscription credited.

"Talk of the Town"

"Did you ever ride so comfortably?" "Could you tell when you crossed the tracks?" "I looked at the oil gauge at 200 miles—apparently we didn't use any." "I averaged over 27 miles to the gallon that last trip—sand and mud most of the way."—You hear it everywhere. All America is talking of this astonishing Overland—and *America is proud of it too!*

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America's low cost car *now $200 reduced!* Add to its low cost its gasoline, oil and tire economy and its low upkeep—and you get a *service per mile* that *never* has been *equalled* or approached. Then add its amazing comfort *on Triplex Springs*, plus its quality. Its baked enamel finish! Its curtains that open with the doors! Its complete convenience! —Then rush your order in for Summer use.

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Coupe, f. o. b. Toledo	*was, 1425*	*now, 1000*
Sedan, f. o. b. Toledo	*was, 1475*	*now, 1275*

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Livestock News Notes

Lucy Pathfinder, one of the sows in the "World's Champion Duroc herd," owned by the Diamond Bar ranch, died recently. She was insured for $5,000.

"The Home Bank With Personal Service" is the slogan of the Farmers State Bank, Tulare, and one of the ways in which the bank lives up to its motto was recently brought to light by California Holstein-Friesien Association. In a campaign for new members a letter from the association reached R. C. Sturgeon, Holstein breeder and vice-president of the Farmers State Bank. Within eight hours Mr. Sturgeon had secured the memberships of two clients of the bank, both owners of registered Holsteins, thus bringing to them individually the service of his bank and their state breed association. This spirit, if put in more general practce by banks throughout California, would be a mighty fine contribution to the prosperity of their respective communities, for the Holstein cow has enriched every locality in which she has been given a home.

Warne & Sons, Holtville, are doing pioneer work in the Imperial Valley in official testing of their registered Holsteins. In their herd Bertha Pontiac Jewel 2nd made 22.47 pounds butter from 512.3 pounds milk in seven days and continuing on yearly test has 418.39 pounds butter from 10,036.2 pounds milk in 167 days. Fayette Segis with 18.20 pounds butter in seven days has to her credit 286.58 pounds butter from 7,220.4 pounds milk in 106 days. Bessie Abbekerk Colantha 2nd, calving as a junior four year old, has to her credit 426.7 pounds butter from 11,670 pounds milk in 177 days. Miss Floa Juliana as a senior three year old has to her credit 340.66 pounds butter from 8,953.8 pounds milk in 142 days. The Warne herd is headed by the richly bred bull Walker Allenvail It, sired by It and out of the 32.31 pound four year old Allenvail Pauline Walker that milked 609.8 pounds in seven days.

Seven more A. R. O. daughters have been added to the list of Sir Ormsby Skylark, the sire of Duchess Skylark Ormsby. Maxwell Farms, Hollywood, report that Bessie Mercedes Ormsby Skylark, dropping first calf at three years one month, made 22.6 pounds butter from 486.6 pounds milk in seven days, and 91.25 pounds butter from 2,119.9 pounds milk in 30 days. Rag Apple Johanna Skylark, at two years five months, made 21.49 pounds butter from 460.8 pounds milk in seven days. She is out of the 1,000 pound cow, Rag Apple Johanna McKinley Segis. Nancy Ormsby Skylark, freshening at two years four months, made 20.41 pounds butter from 415 pounds milk. She is out of the famous 40 pound cow Nancy Lucy Hengerveld.

Official testing is under way in the herd of registered Holsteins owned by Pottenger Sanatorium Company, Monrovia, and the latest record to be completed is that of the junior three year old, Korndyke Lieuwke Gerben De Kol, that made 23.28 pounds butter from 402.1 pounds milk in seven days. Their herd is headed by Rosamaines Pontiac Netherland, whose first five daughters to freshen have averaged 20.53 pounds butter from 417.1 pounds milk in seven days at an average age of 24 months.

The excellent herd of registered Holsteins owned by Alex Whaley, Tulare, will be dispersed at public sale on October 6. Included in the herd are 20 daughters of the noted young sire, Sir Aaggie De Kol Acme 2nd, one of the best bred yearly record bulls of the breed. Mr. Whaley does not intend to retire permanently from the Holstein business, but has some extensive changes and improvements to make in his farm before he will be ready to establish another herd.

S. O. Walker, Visalia, will disperse his richly bred herd of registered Holsteins early in October. This herd contains around 30 daughters of the famous bull, King of the Blacks and Whites, the first bull whose seven nearest dams averaged over 30 pounds butter in seven days. This great bull himself will be sold and he is still in splendid vigor and condition.

Robt. T. Curtis & Son, Exeter, will sell about 45 head of their registered Holsteins at public sale early in October. This herd is an example of what may be done in developing a good herd through judicious purchase and development of foundation stock. Star attractions in the offering will be the great 34 pound heifer, Coloma Beauty Butter Maid, and three splendid young daughters of the $12,000 bull, King Korndyke Pontiac 20th.

Widespread interest has been manifested in the future plans of A. W. Morris & Sons Corporation, Woodland, following the accident which resulted in the untimely death of A. W. Morris, founder of the organization. While no definite announcement has yet been made by the company, it may be stated on reliable authority that the four sons, Frank, Harry, Asa and Charles, will devote their combined energies to the development of the world famous herd of registered Holsteins, carrying on only such general farming operations as are necessary to provide feed for the cattle. In carrying out this plan it is probable that the extensive land holdings of the corporation will be substantially reduced.

Mooresta Ormsby of Vina, who sold with three of her daughters in the Gotshall & Magruder sale of Holsteins at Ripon for a total of $2,400, has presented her new owner, F. L. Hogue, Santa Barbara, with a fine heifer calf. This great young cow, only seven years old, now has six living daughters and promises to be the founder of a notable family.

A new test barn is soon to be constructed on the 1,100 acre ranch at Corcoran owned by Frank M. Helm, Fresno, and beginning this fall the 350 head of registered Holstein females in the big herd will be put on test as they freshen. Herdsman Harry L. Redd has a few on yearly test at the present time and is also shaping up a few head for the show circuit this fall.

The Maxwell Farms at Hollywood have just shipped a bull calf sired by Tritomia Pietertje Ormsby, a 1,100 pound son of Sir Pietertje Ormsby Mercedes and out of a 23 pound junior three year old daughter of Sir Ormsby Skylark, to Robert Lea & Son of Stevensville, Montana.

A. A. Jenkins of Tulare has recently sold to Harry L. Watters of Paicines a beautiful young Jersey heifer. Her dam is a daughter of Gertie's Golden Victor, her sire a son of Gertie's Son's Victor out of the Owl's Witch.

E. D. Barry, Jr. of Covina writes: "Our great white cow, King Hengerveld Honriette, has just completed another 30 pound record, after having milk fever and being very sick for several days, of 30.85 pounds butter from 593.4 pounds milk in seven days, and in her first month on semi-official test has made about 119.0 pounds butter. Her average for her last three tests is 30.91 pounds butter in seven days.

P. B. Long of Tulare writes: "Just want to let you know about the spring boar pig that I recently purchased from Henry Fesenmeyer of Clarinda, Iowa, the veteran Poland China breed-

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For sale cheap. Overstocked. Large smooth frames. From the very best strains of this country and France. Immediate delivery. P. O. Address
Windell Orchards, Glenn, California
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As we have sold out of bred sows and gilts, we are now offering big growthy fall pigs, either sex, at attractive prices.
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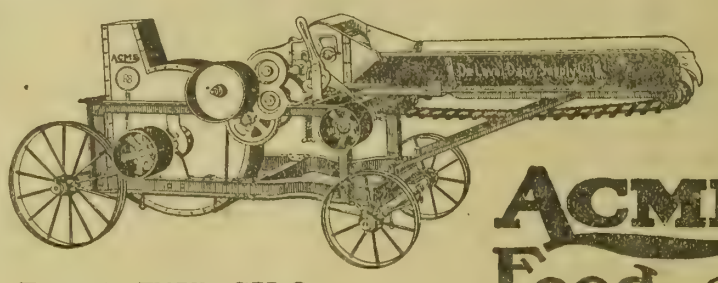

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CHOPS DRY HAY
MAKES ALFALFA MEAL
ACME Feed Cutters
—a year 'round feed saver

THAT'S the kind of a cutter to buy. Why buy a cutter you can use only for silo filling? The Acme will not alone fill your silo, but chop all your hay and other dry fodder, besides making an excellent grade of alfalfa meal. Do you feed bulk hay?

CHOPPED HAY IS BETTER FOR COWS.
CHOPPED HAY REDUCES WASTE.
CHOPPED HAY FEEDS MORE COWS.

Read this Evidence of Acme Durability

Mr. J. E. Lewis of Laton, Calif., bought an Acme five years ago. It has filled his silo ten times. The same machine will be right on the job at silo filling time this fall.

Mr. W. L. Little of Gilroy, Cal., has filled a 120-ton silo twice a year and a 90-ton silo once a year with the Acme Cutter he purchased four years ago and it is still serving him well.

Acme Catalog and Sample of Meal Mailed Upon Request

De Laval Pacific Company
61-69 Beale Street San Francisco

Show Bull at a Bargain
Born Dec. 10, 1920
A young bull that combines the great qualities of Sir Pietertje Ormsby Mercedes and King Segis Pontiac.
TYPE PLUS PRODUCTION
Sire — Tritomia Pietertje Ormsby, a line bred son of Sir Pietertje Ormsby Mercedes and out of Alice Tritomia Ormsby, who made 34.43 lbs. butter in 7 days and 1,048.6 lbs. from 24.287 lbs. of milk in a year. This bull carries 62½ per cent of the blood of Sir Pietertje.
Dam—K. S. P. Queen Burke, a daughter of King Segis Pontiac. Her record is 31.12 lbs. of butter from 584.3 lbs. of milk in 7 days at 4½ years of age. His seven nearest dams average 31.3 lbs.
Tuberculin tested and guaranteed in every way.
MAXWELL FARMS
Near Universal City R.F.D., Hollywood, Cal.

er. This pig is sired by C-2 Ranger, the world's largest boar; dam Preston Giantess 2nd, a full sister to L. R. McClarnon's great boar, Challenger. He is a direct descendant on both sire and dam's side of Joe's Giantess, the foundation son of the present day Giantess family. From all indications at present he is going to live up to his pedigree."

Earl J, Sturgis, manager of the Hartsook Ranch at Lankershim, has just finished a record of 33.65 pounds butter in seven days with Korndyke Model 3rd, a junior four year old. Her best day's milk was 99.8 pounds.

Gertie's Son's Victor, the great Jersey bull owned by A. A. Jenkins of Tulare, has the distinction of having more Register of Merit daughters than any other Jersey bull in the state. Up to date 19 of his daughters average 7,364.7 pounds milk and 437.9 pounds butter in 12 months, at an average age of two years and four months. All of these records were made on two milkings a day and with no feed but alfalfa hay.

THE WAY OF THE FARMER-BREEDER

(Continued from Page 101.)

that must be the cornerstone of successful improvement.

After all, the livestock business is governed by the same fundamentals that govern other lines of effort.

Real and lasting success cannot be bought or otherwise acquired without effort. Pull, a plethoric bank roll or some social prestige count for little alongside of well directed effort. There is in the livestock business as much room at the top as ever and the way up is open to all.

And right now there is a real need in California for many more herds and flocks. Changing economic conditions will make a constantly widening demand for surplus stock of the right sort and prices will rule satisfactory. Beginners in livestock do not need to focus their attention on extreme high prices—they are for the speculator—but they can with confidence expect their productions, if properly handled, to return them a fair profit over what they would receive were they handling grade stuff.

There is every legitimate reason to believe that during the next five or ten years California will make rapid strides in the improvement of our livestock. That prediction is based on what would seem the soundest reasoning. And if such be the case, now is the time to lay a foundation on which to supply a demand.

That the demand will be met satisfactorily there can be little doubt. The main matter for many Cultivator readers to settle is whether or not they will be able to take a part. They can by making a modest start now and sticking with whatever breed they choose.

Among the successful livestock men of the future will be numbered men who may now regard themselves as so situated, perhaps, as to be handicapped to compete with men of greater means, but who ask for nothing more than a fair start and an open field.

Truly, we are entering upon a period wherein the so-called small farmer-breeder will be the bulwark of our livestock industry.

SUCCULENCE FROM SORGHUM SILAGE

Sorghum silage, according to the United States department of agriculture specialists, promises to become a champion yielder of winter succulence, not only for dairy cows but for other livestock which relish canned crops. Unfortunately, when sorghum was first used for silage purposes, many growers cut it too early, so that when the material was removed from the silo for feeding it was sour and acid and livestock rejected it. As a result sorghum gained an evil reputation although experiments have demonstrated that it is one of the most admirable crops for ensilage purposes that can be grown.

In five years' experiments at Hays, Kansas, the average acre yield of sweet sorghums was 10.34 tons, as compared with 8.06 tons of kafir and 3.8 tons of corn. In eastern Kansas, where the rainfall is 30 inches or more, on fertile soils sweet sorghums have yielded 18.2 tons an acre, as compared with 1.88 tons of kafir and 11.81 tons of corn silage. Detailed feeding experiments have shown that sweet sorghum silage is proportionately equal to corn and kafir silage for either beef production or the maintenance of stock animals, although for dairy cows this variety of ensilage is less productive because of its low content of protein.

Sorghum silage should be cut when it is mature, its ripeness being denoted by the presence of hard seed. The test for ripeness is when the seed will crack when crunched between the teeth. When cut at this time it produces a fine quality of silage which keeps well and is more keenly relished by cattle than corn silage. Experiments show that the average acidity of corn silage is 2.03 per cent, that of sweet sorghum silage is 1.46 per cent, and that of kafir silage is 1.43 per cent.

USE PURE BRED BULLS

The man with an ordinary native herd often feels that it is waste of money to use a pure bred bull on such herd. It is a common practice to use a grade bull first, and then later a pure bred. The pure bred bull does away with the native blood more rapidly than does a grade bull. In crossing native cows with a pure bred bull of any breed, the first cross will be what we know as a halfbreed; that is, half the blood in the offspring is from the pure bred sire.

To breed up a good grade herd and get rid of the native blood as rapidly as possible the quickest method is the successive use of pure bred bulls. In five generations only one-thirty-second of the native blood remains. As far as production, either of meat or dairy products, is concerned, these high grades may be as good as pure breds, if proper care has been exercised in selecting, breeding and feeding.

When a grade bull, even one which is three-fourths pure bred, has been used through five successive generations, there still remains more than one-fourth of native blood. No matter how long you continue the use of grade bulls of this class that one-fourth native blood will still remain.

A grade cow is one sired by a pure bred bull and out of a cow not a pure bred.

A pure bred is one whose sire and dam are both pure breds of the same breed. The only positive evidence we have that an animal is a pure bred is the registration papers. A registered animal is a pure bred which has been registered with the national registry association of that particular breed.—Univ. of Wis.

COSTS OF PRODUCING MILK

Dairymen throughout the country should be interested to know how many pounds of grain, hay and silage and how many hours of labor it takes to produce 100 pounds of milk in the different dairy sections of the United States. The bureau of animal industry, U. S. department of agriculture, began a series of studies in 1915 on groups of dairy farms to obtain accurate information of this kind.

The results are shown for southeastern Louisiana in Department Bulletin 955. The figures for northwestern Indiana are contained in Department Bulletin 858; North Carolina and western Washington in Department Bulletin 923, which may be purchased from the Superintendent of Documents, Washington, D. C., at five cents the copy. The various tables are based upon figures obtained during a two year study. The surveys include also an inventory of dairy buildings, livestock and equipment used.

Only by keeping records of production can the value of individual cows be known.

Save all heifer calves from the best producing cows in the herd to replace the unprofitable cows.

The feeding of scrub cows and the "scrub" feed of good cows are two of the commonest mistakes in dairying.

Santa Anita Rancho

Mammoth Jacks and Jennets

WASHEBA

Pure Bred Registered Percheron, Arabian, Thoroughbred Horses

Mammoth Jacks and Jennets

Holstein - Friesian Cattle

Big Type Poland China Swine

Southdown Sheep

Washeba, a four year old prize winning son of the great prize winner King Beersheba. Color: Black with white points, 60½ inches high, girth 69 inches, bone 9 inches. Weght 1,115 lbs. Of a splendid disposition, broke to service, and a sure foal-getter, as there are a number of very excellent mule colts sired by Washeba. The Rancho offers for sale at this time six excellent typie Mammoth Jacks including Washeba, and several Jennets bred to King Beersheba, and some due to foal in September. Prices are reasonable, and in keeping with the quality of the animals offered. All stock guaranteed.

Correspondence Invited Visitors Welcome

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SANTA ANITA CALIFORNIA

Bred Guernsey Heifers and Cows

Guaranteed Safe in Calf to

Masterpiece of Edgemoor

The Greatest of All Guernsey Bulls—For Which $40,000 Has Been Refused

Masterpiece was sired by Royal Rose King of Edgemoor who was by Imp. Itchen May King, grand champion of the P. P. I. E. in 1915 and grand champion National Dairy Show in 1920. Royal Rose King of Edgemoor was out of Belladia who made 934 lbs. of butter fat in 365 days in the certified milking barn.

Masterpiece is out of Jessebel of Edgemoor whose record of 12,434.9 lbs. of milk and 748.3 lbs. of butter fat at two years of age makes her the best daughter of the great Ne Plus Ultra.

Masterpiece combines great show-type with high production.

The females we offer for sale run high in the popular May Rose blood and Masterpiece combines all of the great May Rose blood lines.

The heifers are from good A. R. dams and will make excellent records. We are offering Californians a chance to get Guernsey females that cannot be duplicated and the price is right.

All animals tuberculin tested and guaranteed clean. Call or write at once.

EDGEMOOR FARMS

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GUASTI BERKSHIRES

The Big Modern Type

Weanling Trios a specialty: two gilts and unrelated boar. Specials for farmers and pig club boys. Herd tuberculin tested and cholera immune. Breeding stock of all ages.

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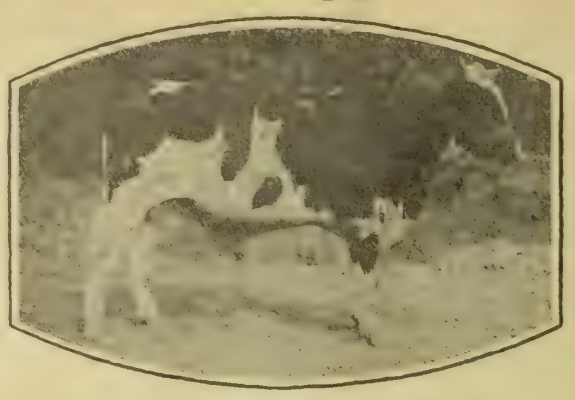

Carrying in close combination the blood of De Kol of Valley Mead and Aaggie Acme of Riverside, each of which have founded groups notable in the breed's production records.

His sire's dam, AAGGIE ACME OF RIVERSIDE, with 1,054.1 lbs. butter in one year, is the dam of Aaggie Acme of Riverside 2nd with 1,331.7 lbs. butter in one year, the world's strictly official record, and she in turn is the dam of Miss Aaggie Acme Burke, 1,034.66 lbs. butter in one year as a first calf junior 2 year old.

His dam, MISS VALLEY MEAD DE KOL WALKER, with 1,113.58 lbs. butter in 342 days as a junior 3 year old, with 1,006.24 lbs. butter in 305 days at mature age under ordinary conditions, is out of De Kol of Valley Mead 2nd, 1,011.71 lbs. butter in one year as a 4 year old, and her two year production as a three and four year old was a world's record for age, she in turn out of the foundation cow herself, De Kol of Valley Mead.

This combination of breeding has been found most satisfactory and profitable by many leading breeders of California and other states. Why not consider a bull of this breeding for your herd?

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Fred Hartsook and A.W. Morris & Sons Corporation

LANKERSHIM, CALIF. WOODLAND, CALIF.

King Segis Pontiac Jannek

A proven sire of show winners and high producers is available for service to high class Holstein cows.

SANTA MONICA DAIRY CO.

Farm is on Washington Blvd. 2 miles east of Venice. Santa Monica

HOLSTEIN BREEDERS

A wonderful son of our 32 lb. four year old, KING HENGERVELD HONRIETTE

He is by our herd sire who is out of a 34 lb. daughter of Prince Gelsche Walker and by Sir Aaggie De Kol Acme.

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HOLSTEIN Fred Hartsook RANCH CATTLE

We have assembled an excellent foundation herd of females and will be glad to have breeders call. Fred Hartsook, Lankershim, California.

HG RANCH

Santa Ynez Valley

A Fine Ayrshire Bull and Some Grade Heifers Attractively Priced

Harry Gantz, Owner Cyril Lamb, Supt.

SOLVANG, CAL.

Herd Bulls

Harris Standard 2d

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Nevada Hereford Ranch

J. H. Cazier & Sons
Wells, Nevada

A government accredited herd. No reactor in 16 years. A herd whose record in the show and sale ring is only surpassed by the esteem accorded its productions by cattlemen. We can furnish bulls or females to fill any need—and at sound prices. Visit our herd or write for information.

Much has been said and written regarding the value of the intermixture of Shorthorn blood with other breeds to maintain adequate size and quality. It seems to be recognized as essential. The profit in beef-making is often in the last few pounds represented.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION
13 Dexter Park Ave., Chicago, Ill.

"Good Enough" Cows Won't Do Today

By R. P. Royce

THERE are entirely too many ranchers in California who are content in believing that the sort and quality of their livestock is "good enough"—in fact, they believe their whole plan of operation is good enough, and after all, perhaps it is; it all depends on the point of view and the aim of the individual.

If the individual happens to regard his livestock and his investment in livestock as an incidental part of his business from which he has never received and does not expect a profit, then doubtless it is good enough. Certain it is that such a man would be better off without any livestock whatever. But if one looks to livestock to furnish him with a profit, then may he well ask himself, in all seriousness, if his livestock is good enough.

Before one reaches a satisfactory answer to that question it will be necessary that he establish firmly in mind a standard by which to measure the efficiency of his cattle, hogs or sheep; and so far as the writer has been able to observe, the one real standard of universal appeal is that of profit.

Farming is a business just as truly as banking or merchandising, and the man who engages in any business does so with the expectation that his efforts will be rewarded in a material manner, and if after a fair trial he finds that his business is not returning a profit, he gets out as best he can or he sets himself to the task of discovering the cause of the failure.

How many California dairymen know, really know, whether their cows are "good enough"? Do you, Mr. Reader, believe that your cows are good enough? How do you know whether they are or not? So long as there is a herd of cows in California that is producing more milk and butterfat than your herd, your cows are not good enough, and you owe it to yourself to head your operations in a forward direction.

Just as a matter of cold business California dairymen cannot afford to keep mediocre or average cows. In general our dairying is carried on on land of as high or higher value than is true in most states, and so from the start California dairymen are up against a stiffer proposition than dairymen elsewhere. Feed and labor in this state will rule about as high as elsewhere, and the average value of our dairy cows is probably higher than in the majority of states. It is therefore necessarry that our cows be of greater efficiency than can get by in many sections.

There are added and important reasons why our dairymen must give more attention to their cows. In the general readjustment that is under way the margin between production costs and selling prices is tending toward a shortening and it is becoming more difficult to register a satisfactory profit. It is good business in flush times to keep production costs at a minimum, but in tight periods it is absolutely essential that efficiency be practiced all down the line.

In dairying the place to inaugurate efficiency is in the milking barn, and fortunately the means for efficient practice are available to any dairyman who is willing to make the start.

In no branch of agricultural practice is it as easy and practical to discover actual production costs as in dairying, and in no branch of the entire industry is the way marked more clearly.

A pair of scales, a milk record sheet and a Babcock tester is all the equipment needed, provided the owner of a dairy herd really wants to know the truth about his cows.

This matter of testing dairy cows is of fundamental importance to the cow owner, and the information gained through testing is at once the starting point of sound dairying and a guide to herd development. Testing will disclose the individual production of the animals in the herd; will enable the owner to set a standard and eliminate cows that fall below the standard; will point the way to more careful and successful feeding and breeding; in short, will lift dairying out of the dark.

Suppose a dairyman, yourself, perhaps, should decide that his cows are not good enough, what's to be done? About the first step indicated by good business judgment will be to find out why some of the cows are not producing profitably. Unprofitable production is either due to poor breeding or poor feeding, or both. If your cows are unprofitable because of poor breeding there is little to do except dispose of them. If they are unprofitable because of poor management under which they cannot do their best for lack of opportunity, it remains for the owner to correct his system of management. In either case the responsibility of maintaining unprofitable cows rests solely on the shoulders of the owner, and no one else. Likewise, the responsibility of raising the standard of his herd to a point of profit depends upon intelligent effort of the owner.

Dairymen cannot expect their producers organizations to lift them out of an unprofitable business. Such organizations have and will accomplish much, but the real problem of unprofitable cows is not one for an organization to solve. Dairying is a good business, a sound business and a profitable business for the man who brings to the work intelligence, ambition and energy. It is not a good business for the man who thinks his cows are "good enough." That man, in a period of fundamental readjustment, will be left behind while his fellow dairymen who practice sound principles will progress.

NATE HAUCK OF HUMBOLDT COUNTY WINS CALIFORNIA CULTIVATOR PRIZE FOR JUNE

By F. W. Woll

Five cows owned by Nate Hauck of Alton, Humboldt County, had the highest average production of butter fat for grades in the state dairy cow competition during the month of June, viz., 74.95 pounds of butter fat, and the California Cultivator prize for this month was accordingly awarded to him.

The production of the individual grades for the month was as follows:

	Days in Milk	Milk Lbs.	Butter Fat Pct.	Butter Fat Lbs.
Brindle	33	2144	4.28	91.76
Red	19	1738	4.49	78.04
Nigger	81	1557	4.68	72.87
Speck	39	1643	4.22	69.34
Beauty	23	1385	4.53	62.74
Average	39	1693	4.43	74.95

The cows are all grade Jerseys but one, "Red," which is described as "common"; all but two four year olds are mature animals. These grades stood first among similar groups of cows in the 25 different dairy herds that competed for the Cultivator prize the past month. Of this number the average production of all but seven was above 50 pounds of butter fat, the lowest producing group averaging 27.98 pounds of butter fat for the month. Five grades in the herds owned by the following dairy farmers produced, on the average, over 50 pounds of butter fat: Nate Hauck, 74.95 pounds; W. Terkelsen, 74.30 pounds; J. A. Genzoli, 71.69 pounds; M. L. Pontoni, 71.36 pounds; Earl Graham, 69.69 pounds; Leo Christen, 69.24 pounds; E. Biondini, 65.46 pounds; F. F. Pellissier, 62.13 pounds; P. Iversen, 61.92 pounds; W. F. Early 61.66 pounds; Los Angeles County Farm, 57.31 pounds; Arden Certified Dairy, 57.01 pounds; Giacomini and Pedrotti, 56.68 pounds; H. L. Wakeham, 61.50 pounds; J. B. Harbers, 56.41 pounds; W. B. Gries, 54.48 pounds; Napa State Hospital, 54.00; and Adohr Stock Farms, 50.40 pounds.

This is the third month in succession that the Cultivator prize has been won by a Humboldt County farmer. Since the competition started this prize has gone six times to Los Angeles County, three times to Humboldt County, and once to San Joa-

quin County. The average production of these groups of five grades has only three times fallen below 70 pounds of butter fat, and it has three times exceeded 80 pounds — a production equal to slightly over three pounds of commercial butter per cow daily, and as much as three "good" dairy cows will produce. This suggests the possibilities of improvement in the production by dairy cows through the adoption of modern dairy methods, but it does not show the limit, as well-known to all who are posted on the wonderful records made by individual cows of the various dairy breeds.

BULLY FOR FRANK

Secretary Shaper of the San Bernardino County farm bureau writes of some excellent work by Frank Curtis of Chino, one of the pig club contestants. His work was so successful that it called for a letter of appreciation from the board of directors. The letter in full is:

"At the regular monthly meeting of the farm bureau directors on July 13, at this office, the secretary was given the pleasant duty of acting in behalf of the board of directors in complimenting you upon your unusual success in pig club work and extending best wishes for your success with your prize Duroc-Jersey hogs on the coming fair circuit. Your activities have been receiving our constant attention. We want you to feel that we are very proud of your success."

GETTING RID OF FLEAS

A number of readers have asked for information about ridding their premises of fleas. Now this is a "ticklish" subject. When one has fleas he is not proud of the fact and he doesn't want his name mentioned, consequently some of those who have written us didn't sign their names to their letters, but they were willing to let us in on their secret even if they didn't want their neighbors to know.

"How to get rid of fleas?" The answer to that question is something like catching a flea, it is a little difficult to put your finger on it. There are several suggestions that can be made that may be of service. But first let us say there are fleas and fleas, something like 500 different species being known to exist. Less than a dozen of these, however, are of special interest as pests to man and domestic animals.

The fleas that usually bother are those that live on dogs and cats. When these animals are infested and are permitted access to the house they are not a bit careful about where they leave their fleas, and it not infrequently happens they get the whole family to scratching. With this kind of fleas the dog or cat should be washed with stock dip or kerosene emulsion. Rubbing pyrethrum or insect powder in the hair is recommended by some. Then clean the rooms that are infested, taking up the carpets and removing all dust and organic matter. The floor should then be mopped with warm, soapy water and after it is dry, gasoline should be squirted into every crack between the boards and under the baseboards to kill the larvae and pupae. The bed or box in which the cat or dog has been sleeping should also be cleaned and disinfected.

Sometimes the barn becomes infested with fleas, particularly where hogs are permitted to sleep under them in the dust. The way to get rid of the pest under such conditions is to clean out the loose material and burn it and sprinkle salt over the dust and then wet down thoroughly. Crude petroleum sprinkled about will drive the fleas away. Scattering lime around is also good. It should be remembered that the fleas in the house and barn are due to the animals that sleep in or under the buildings and that the immature stages of the insect develop in the accumulation of dust and vegetable matter in the beds of these animals. A thorough clean-up is the first step to take in getting rid of fleas.

It may be a good thing for a dog to have fleas to remind him that he is a dog, as David Harum said, but there are few persons who wish to have the reminder applied to them. A little attention to keeping cats and dogs free from fleas will usually prevent any trouble from these insects in the house.—Indiana Farmers Guide.

WHAT ONE COW ACCOMPLISHED

A most interesting object lesson is given in an item published in the Pilot Rock Record giving the experience of Frank T. Byrd, owner of the Highland Stock Farm of that town. The same story is duplicated repeatedly by other breeders of pure bred cattle, but seldom are the concrete facts given for the benefit of others.

Back in March, 1912 Mr. Byrd bought at the Portland Shorthorn sale the cow, Lorne Lady Seaforth 6455, then eight years old, from Alex Chalmers, Forest Grove, Oregon, who bred and raised her, for $255. She had a calf at foot and was bred again, both by bulls of Mr. Chalmers' breeding. These two calves, both heifers, were named Lady Oregon 118795 and Lady Oregon 2nd 199051. The first named produced five heifers and two bulls, the second four heifers and six bulls. From the females were produced 17 animals—a total of 36 animals from the original cow.

Mr. Byrd sold 11, all bulls, for a total of $2,025, and has now remaining in his herd six bulls which he values at $1,170 and 17 females living upon which he places a value of $3,400, a grand total of $6,595 from this one cow which nine years ago cost him $255. The above are the facts as they exist in the placing of one good Shorthorn cow on the Highland Stock Farm, where no pretensions were made to prepare for the show ring and advertise breeding stock, where it is possible to gain the highest values. The owner just cared for them only as any farmer should care for his stock by proper feeding and attention at breeding time. You will find it just as easy to care for pure bred stock as it is to care for grades, and far more profitable. Why not put better stock on your farm?

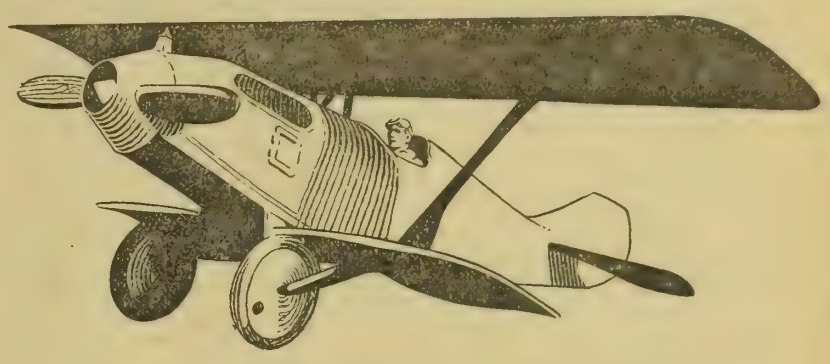
GOOD TEMPER IN LIVESTOCK

We cannot do as much work with a mean horse as we can with one that is easily managed. It takes more time to milk an excitable, kicking cow than it does to milk one that is quiet and gentle. It costs in time and money to keep a mean animal on the farm.

A mean temper in most cases is the result of improper handling. The habits farm animals have are generally the result of their training. The naturally vicious animal is rare.

Patience and gentleness are the prime requisites to the proper training of farm animals. It will pay in time and trouble to give the young animal the right care. It is much easier to give a young horse the right kind of attention than it is to cure an old one of a bad habit. It never pays to lose your temper and beat the animal. He doesn't understand why he is being beaten and becomes nervous and afraid. If your domestic animals are afraid of you and hard to manage it is generally your own fault. If they are gentle and tractable they save you time, labor and worry.—Indiana Farmers Guide.

Oregon prune growers are calling for reduction in freight rates similar to that offered the California growers by the Southern Pacific.



Scientifically Correct

Anyone can build an airplane that will look right. But the properly constructed aircraft—one that can be safely piloted through space — must be built in accordance with scientific principles. The same maxim applies to silos.

Science has discovered that the perfect silo must possess three things:

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—Principles of Agricultural Chemistry
PROF. G. S. FRAPS, Ph. D.

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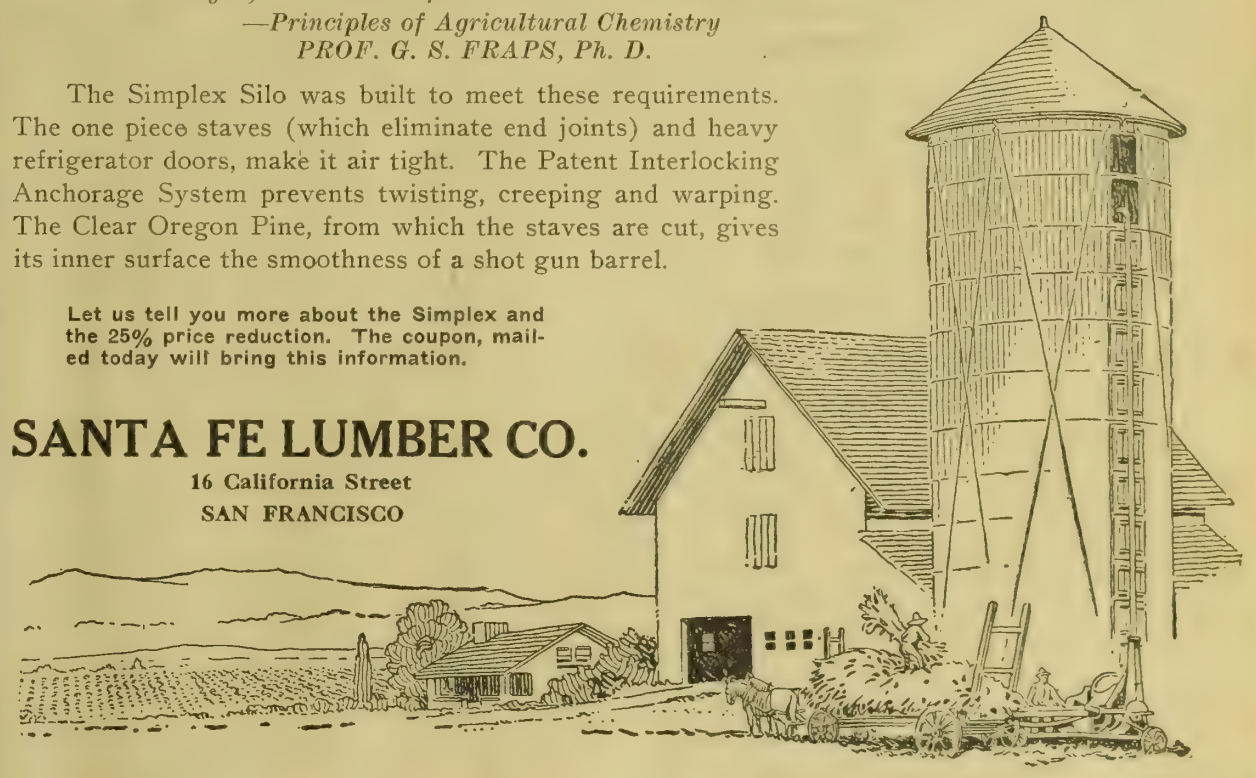

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S. C. White Leghorn Baby Chicks from the heaviest laying (Hoganized) stock. Safe delivery live vigorous chicks guaranteed. No money in advance; pay on delivery. Price from July 15 to August 31, $4.00 per 25, $8.00 per 50, $15.00 per 100. Special prices 500 and 1000 lots. Largest electric hatchery in the world. Established 1898. MUST HATCH INCUBATOR COMPANY, 438 Seventh Street, Petaluma, California.

Petaluma Hatchery, established 1902 by L. W. Clark. White Leghorn chicks from heavy laying free range stock during August 17c each, $8.00 per 50, $15.00 per 100, $140.00 per 1,000 prepaid. Brown Leghorns one cent more than White Leghorns. We positively guarantee safe arrival and full count of good strong chicks and no questions asked. L. W. Clark, 615 Main Street, Petaluma, California.

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It's no wonder so many poultry raisers make a failure of the business. Without any knowledge of raising poultry people will branch out expecting to make a success. By putting in practice the valuable contents of POULTRY FOR PROFIT, $1.00 postpaid, success is assured in the poultry business. Cultivator Publishing Company, Los Angeles, California.

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Cockerels from trapnested S. C. White Leghorn hens with records from 230 to 282 eggs, $5.00 each and up; trapnested 17 years. Bonnie Brae Farm, Burbank, California.

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White Wyandotte Cockerels for Sale—Extra fine for the price. Write at once. J. W. Nicholson, Wasco, California.

Success in business is attained by experience and knowledge. The poultry business can be made to pay by following the teachings and information contained in POULTRY FOR PROFIT, $1.00 postpaid. Cultivator Publishing Company, Los Angeles, California.

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Reliable Seeds—Ask your dealer or write for our Reliable Seeds and instructive catalog. AGGELER & MUSSER SEED COMPANY, 620 S. Spring Street. Branch—767 S. Central Avenue, Los Angeles, Cal.

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640 Acres Stock Ranch, Well Equipped—Good buildings, all fenced and cross fenced, plenty of water and timber, fine vineyard of 2,000 vines, all kinds of fruit and nut trees; wine making outfit, blacksmith shop and tools, all farming implements; house furnished; 35 head of cattle, 50 hogs, 3 horses, hay in barn, in fact, everything needed on a ranch. A great bargain at only $25 per acre for all; move in. Part cash or trade for L. A. property, rooming or apartment house preferred. Address G. E. Williams, Route A, Box 175, Bakersfield, California.

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Irrigation plus California climate eliminates chance in farming. Let us tell you about Safe Farming on Sutter Basin Irrigated Bottom Lands. Write for literature to Land Department, SUTTER BASIN COMPANY, California Fruit Building, SACRAMENTO, or to W. L. White, 509 Balboa Building, SAN FRANCISCO, or to C. D. Saunders, 509 Security Building, LOS ANGELES.

For Sale or Wanted Partner in 160 acre No. 1 Thompson grape land; good well; 25 acres planted to cuttings this spring. Price $150.00 per acre. Mrs. Matilda Ayers, Delano, Kern County, California. P. O. Box 102.

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For Sale—80 acre ranch, well improved. Good soil, excellent water right. Terms reasonable. Price $16,000. Address P. O. Box 103, Laws, California.

For Sale—$26,000.00 equity in 185 acre well improved Imperial Valley farm. Will consider trade. C. C. Gillespie, El Centro, California.

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Catalogues and Booklets, office forms and correspondence stationery for the nursery, seed and florist trade; half tone cuts of many standard plants. Correspondence invited. The Kruckeberg Press, 236 Court St., Los Angeles

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Agricultural College Graduate, single, white, healthy, twenty-eight, experienced with general farming and running tractors and modern farm machinery, wants permanent position where he can learn the orange business and where there is a change for advancement. Write O. S. Kyes, 4517 W. 16th Street, Los Angeles, California.

Wanted—An experienced orchardist with some money for investment to take charge of 170 acres of young Winter Pears with other interested owners. Land near Salinas, Monterey County, on State Highway. Write California Coast Fruit Co., Salinas, California.

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Wanted Job As Foreman on large ranch. Can give reference. Can handle tractors and gas engines, am also good teamster. Have handled lots of men. Glen Barstow, Laton, California.

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Lumber, Lath, Millwork—Get our direct-to-consumer prices before building. Catalogue, plan book free. Contractor's Lumber Supply Co., 452 Lumber Exchange, Seattle, Wash.

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Polled Herefords and Durocs — Diablo Stock Farm, G. W. Emmons, Prop., Danville, California.

EARLY TRACTOR OWNERS STILL USE MECHANICAL POWER

(Continued from Page 99.)

tors; 28 used them for belt work only, while 19 still had their tractors but used them for neither field nor belt work.

Of 80 men who purchased their machines in 1911, 1912 and 1913, 19 still owned the same machines and used them for field work. One of the 19 had purchased another tractor and used both for field work; 38 had replaced their first tractors with others which they used for field work; 25 of this group had sold their first tractors and 13 still had them; of these 8 used their old tractors for belt work only and 5 did not use them at all; 23 did not use tractors for field work; 5 had disposed of their old tractors; 8 used them for belt work only; 10 still owned their tractors but used them for neither field nor belt work.

Thirty-eight, nearly half, of these men who began using tractors in 1913 or earlier are located in the Dakotas. In all, 685 men were no longer using their first tractors for field work; 469 had disposed of their tractors and 216 still owned them; 102 of the latter used the tractors for belt work in 1920 and 114 did not use them at all. Thirty-five per cent of the men who had disposed of their tractors sold them for cash and 65 per cent had disposed of them in trade, usually for new tractors.

The men who had disposed of their early machines paid on the average $990 for them, kept them a little over three years and received $490 for them. Thus the average annual depreciation was a little more than $150.

There was no great difference in the length of time the men in the different states kept their early machines. The Dakota farmers received an average of $665 for the old machines which they had sold, considerably more than was received for old machines in any of the other states. This greater sale value was due in part at least to the fact that most of the early tractors in North Dakota and South Dakota were larger and more expensive than in the other states.

The tractor operator has evidently been partly responsible for the success or failure of these early tractors. Only 11 per cent of the early tractors which were still in use for field work in 1920 had been operated by hired help and only 12 per cent of the men who had replaced their first tractors with others depended on hired help, while 25 per cent of the men who had discontinued the use of tractors for field work had allowed the machines to be operated by hired help.

At the time of making their early reports, 84 per cent of these men believed their tractors would be profitable investments. Eighty-two per cent of those who used their first machines for field work in 1920 still considered that they were profitable, and 83 per cent stated that they intended to buy others when the ones they were then using wore out. Sixty per cent of those who have sold their first tractors and purchased others, and only 32 per cent of those who have sold their first tractors and have not purchased others, consider that their early machines were profitable investments. The men who had purchased new tractors had owned them about 1½ years, on the average, and estimated that they would give about 5½ more years of satisfactory service. Eighty-nine per cent believed that the new tractors would be profitable.

On the average the men who were still using their early tractors for field work had owned them about 4½ years; in this time they had spent $187 for repairs—about $40 per year, and they estimated that the machines would last five years more.

In 1917 and 1918, when these men gave the first reports of their experi-

ence, they had increased their acreage by an average of 14 per cent since the purchase of their tractors, and at the same time had reduced the number of work stock kept by about 20 per cent. There had been little further change either in acreage or number of work stock on the farms where tractors were still in use in 1920.

In many cases the first tractors evidently were not the sizes best suited to the needs of these farmers. In all, 512 of the men reporting had bought their second tractors, either to replace or supplement their first ones. Of these 268, or 52 per cent, purchased the same size as they first owned; 126 purchased larger sizes, and 118 purchased smaller sizes. Four hundred and twenty-nine of the men who were still using their first tractors stated that they intend to buy others when their first ones are worn out, and also gave the size which they intend to buy. Of these, 248, or 58 per cent, intend to buy the tractors of the same size as their first ones, while 103 intend to buy larger sizes and the remaining 78 intend to buy smaller sizes.

FARM IMPLEMENTS MANUFACTURED LAST YEAR

Gas tractors to the number of 203,000, with a total value of $193,000,000, more than 1,000,000 plows with a value of over $40,000,000, 225,000 farm wagons with a value of nearly $25,000,000, and 412,000 haying machines with a value of nearly $25,000,000 were manufactured in the United States during the year of 1920, according to detailed reports from 583 manufacturers, summarized by the bureau of public roads, United States department of agriculture. The total value of implements manufactured was $537,000,000, and gas tractors constituted more than one-third of the total.

These figures are a summary of detailed reports which 583 manufacturers of tractors, farm implements, vehicles, and other farm operating equipment recently gave to the division of agricultural engineering. Every manufacturer of farm equipment in the country was asked for a report of his activities and while a few did not respond it is certain that at least 99 per cent of the entire industry is represented in the figures above, and for most classes of equipment the information is practically complete.

The reports of a considerable number of firms covered fiscal years ending in the latter part of 1920 or the early part of 1921. The reports of such firms do not represent exactly their activities for the calender year of 1920, but in every case the report covered an entire year, and it is believed that for all practical purposes the totals may be considered representative of the industry for the calendar year.

PEAR DAY AT LITTLEROCK

Littlerock, in the Antelope Valley of Los Angeles County, will celebrate its annual Pear Day, August 6. A free lunch, including pear pie, will be served. After lunch there will be a short program of addresses by President Swett of the California Pear Growers, President Nagle of the California Fruit Exchange and Farm Adviser Hodgson of Los Angeles County, followed by a trip through the orchards.

EDEN TOWNSHIP FAIR

Eden Township, Alameda County, proposes to have one real agricultural fair this summer. The dates chosen are August 11-14. Two large tents have been secured for housing the show and the committee reports that already the space is all disposed of.

CANARY ISLAND ONIONS

Onions without irrigation or much rainfall may sound strange to a California grower, but dry farming is the practice in the Canary Islands, whence comes the largest part of the onion seeds used in the United States. Consul F. A. Henry, stationed at Teneriffe, Canary Islands, reports as follows:

"Onions are for the most part grown without irrigation, and are therefore subject to wide variations in yield from season to season. While the rainfall there is light, dry farming methods are used, which permit large crops to be grown with a minimum amount of water. They are grown for the most part in small plats and frequently associated with other cultivations. The only fertilizers used are the limited amounts of animal manures available locally. The fields are prepared for planting by plowing, which is done with a simple form of native made iron tipped wooden plow.

"While there is little or no irrigation in Lanzarote, a kind of 'dry farming' method is employed which makes the most of the limited rainfall and moisture. This consists in placing a layer of a certain kind of volcanic sand obtained from some mountain sides on top of the land which is to be cultivated. This sand, heated by the sun during the day, absorbs moisture from the air during the night, retaining it from the rains for a considerable time. One pound of seed is said to yield 3,000 to 4,000 pounds of onions. An acre under favorable conditions will produce 20,000 pounds of onions."

LIME REQUIREMENTS OF SOIL

Three members of the staff of the Rhode Island agricultural experiment station conducted experiments to determine the chemical and physiological lime requirements of soils.

Experiments were made with lettuce and beet (lime loving plants) in pots containing a normal soil which had received a copious application of nitrogen, phosphoric acid and potash, plus varying amounts of slaked lime. Liming caused an increase in the yield, but after the maximum crop was reached, further liming did not further increase growth, although the lime requirement of the soil was chemically still considerable. The addition of superphosphate to unlimed pots caused an increased growth in lettuce in spite of a markedly increased lime requirement in the soil as determined by chemical examination. This tends to show that the elimination of the effects of alumina in acid soils is of greater importance than the neutralization of the acidity.

HELP PREVENT FIRES

California cannot afford to have so many forest fires, and, if everyone takes hold, can get along without any at all. Visitors to the best of the European forests a quarter of a century ago used to be shown with excitement "our most dreadful fire," a fire covering perhaps a quarter of an acre.

Last fire season 415,275 acres of land were burned over in the forest, brush, hay and grain fires of California, and the total loss was about a million dollars. In the whole United States the forest fire losses last year were about five million dollars.

This is terrible waste, and our children's children will suffer because of it unless everybody takes hold, heart and soul, to end it forever. Nearly all fires are started by human carelessness, indifference and folly. Let us educate the entire community, and above all, the girls and boys, so that we have fewer and fewer fires, smaller and smaller losses, more "baby trees" that become forest giants. — Charles H. Shinn, Forest Examiner.

The house provision for 15 per cent ad valorem tariff on long staple cotton is far from satisfactory to Arizona cotton growers. On the present nominal price of cotton at the gin, it would be equivalent to only about four cents a pound. A fight will be made for 20 cents a pound.

THE DAIRY COW: SHE'S A CASH PRODUCER

In this day of tight money and high interest rates cash is appreciated. The dairy cow is a cash producer; her product can be marketed every day, and there is always a market for her product. The cash now flowing into the country for dairy products is one of the strongest forces at work in stabilizing business conditions.

The safety and economy of diversified farming is now being appreciated, for with it there is always a marketable product and an income in the form of cash. A number of good dairy cows will support a large family and supply the running expenses of the farm with ready cash. Dairy products are now being recognized as our most valuable food since the discovery of vitamines found so plentifully in butterfat. It is hard to estimate the great and essential value of good dairy products. There are few farms that would not be improved by keeping a small herd of dairy cows. Much waste takes place, especially on the crop farm, of such products as straw and forage. This could be turned to a valuable use, add a cash income to the farm and at the same time increase its fertility.

BACK TO THE DAIRY COW AND SAFETY

The lesson taught by the cotton "stampede" may prove a blessing in disguise as far as the future prosperity of the Imperial Valley is concerned. At any rate it points out emphatically the stability of the dairy industry as a steady producer. Cotton, wheat and rice crops may fail but the old dairy cow keeps on giving milk and bringing in a cash return to her owner with unfailing regularity.

Farmers, merchants and bankers throughout the length and breadth of the land are beginning to realize that diversification of crops keeps business on an even keel and that the dairy cow plays a mighty important part as a stabilizing factor. Milk and its products are the equivalent of cash and good cows, proper feeding and headwork always show a profit in the dairy business. The element of risk in dairying has been practically eliminated by the simple process of weeding out the boarder cows and retaining only those which produce milk in paying quantities. The work of the cow testing associations in progressive dairy communities has placed the industry on a business basis.

OAK LEAF POISONING

Bulletin 767 of the United States department of agriculture states: "Although there is an abundant literature on poisoning caused by acorns, very little is recorded on poisoning due to oak leaves, and for this reason the authors took up the subject. The experiments were carried out on cattle, using the leaves of the scrub oak (Quercus Gambellii) and the following facts were observed: Continuous feeding with oak leaves may produce a disease which sometimes ends fatally. In a herd feeding on the same pasture only a few animals are affected. The most obvious symptoms are constipation, mucus and blood in the excreta, emaciation and oedema."

Use a good sire. Without a good sire improvement in the herd is impossible.

The dairy is a factory, and like all factories, the larger the production of each machine (the individual cow) the lower is the cost of production.

The individual cow is the foundation of dairying.

Royal I Am

This great senior yearling Duroc - Jersey boar owned by Sierra Vista Ranch, Perris, is going to be a strong contestant for championship honors at the shows this fall.

Time alone is the great testor

As the sands run through the glass of life the things that are real abide while the the unworthy pass away.

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Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Farm Loan

Where is application made for farm loans and how are they obtained under the federal act? — Subscriber, Azusa.

Under the federal farm loan act the United States is divided into 12 districts, known as federal land bank districts, in each of which is one federal land bank. This central bank may establish branches throughout the district. The land bank which is in the district that comprises the state of California is located at Berkeley. Subordinate to the land bank, the act requires that farm loan associations be organized by parties desiring to borrow money, each of which shall be erected as corporations and composed of ten or more persons who are land owners and desire to avail themselves of the provisions of the act. The articles of incorporation of the association must be forwarded to the land bank; an appraiser of the land bank thereupon investigates the solvency of the applicants and the value of their lands. The land bank thereupon passes upon this report and forwards the same to the federal farm loan board at Washington with their approval or rejection. If approved, a charter is granted to the applicants as a corporation, designating the territory within which they may make loans. The loans under the act are made by this association to its members. In order for the association to make such loan it must subscribe to capital stock of the land bank to the extent of five per cent of the loan. Any person desiring to borrow money must make application to the farm loan association for membership and subscribe to stock of the farm loan association to five per cent of the principal of the loan desired; this subscription is paid off and retired on full payment of the loan. When application for a mortgage is made to the association it is referred to the loan committee, which must examine the land, appraise it, and make written report. The board of directors of the association thereupon pass upon the loan and, if they recommend that it be made, all papers are referred to the land bank. An appraisal may be made by the bank appraiser and the bank thereupon passes upon the loan. If favorable, the money is advanced to the association which thereupon makes the loan upon receiving the first mortgage on the property.

Collecting Note

A note for $100 for money loaned, bearing interest, payable in one year was given. Part of the interest was paid. In 1921 a new note was given payable in six months. The maker is unable to pay. Can the payee sue and require maker to pay costs? The maker has a Ford, farm machinery, and a team of horses in which another party has a share.—Subscriber, Pond.

Undoubtedly the payee can obtain judgment and levy execution on the interest which the maker of the note has in the Ford; the team of horses is exempt from execution, and possibly the farm machinery, depending upon what it is and its value.

Descent of Property

A woman, married, with no children, dies. Her sole kin are the husband and one sister. How can the sister ascertain the amount of the estate left or if a will had been made? How does the property descend? Does the same rule of succession apply in all states?—Subscriber, Modesto.

The estate must be probated within the county within which the party dies. This rule is general throughout the country. If there is a will it must be proved within the county. Information as to these points could be procured from the county clerk. In this case, in the absence of will, the separate property would descend one-half to the surviving husband and one half to the sister. The rules of succession are not necessarily the same in all states.

Poultry Queries

(Conducted by Jean A. Koethen)

Chicken Pox

Chicken pox has just appeared in our flock and I would like to head it off. We have sprayed the house and disinfected the water but still it spreads. What is a good preventive in addition to perfect cleanliness?—Subscriber.

You should write Poultry Division, University of California, Berkely, California, in regard to vaccination. If you have a large flock and the hens are kept in units of 100 or so, it may be you will only need to vaccinate the hens in the yards where there have already been cases. Sulphur in the mash, one pound of sulphur to 50 of mash, is sometimes recommended as a preventive, but vaccination has been generally successful in this state and is probably the more certain remedy.

Weasel or What?

Some small animal has dug under the coop and killed nearly all my chicks by eating holes in their heads. They seem to be safe after they are large enough to roost. I see no signs of rats.—Subscribers, Palmdale.

Perhaps it was a weasel. A cement floor built several inches above the ground all around is the best protection against depredations of this sort. If you cannot manage this try a very tight board floor.

Too Much Corn

My pullets 5½ months old are dying. On examination I find the liver greatly enlarged, covered with yellow blotches and very soft. I feed scratch consisting of 1 1/3 parts wheat, 1/3 part corn, 1 1/3 parts milo and growing mash consisting of 17 per cent protein, 5 per cent fiber and 11 per cent ash. They have a yard 50 by 60 feet planted to barley for 100 pullets.—Subscriber, Lankershim.

That enlarged liver tells the story. The ration you are using is too fattening for hot weather, and if you are depending on growing barley for greens I suspect your pullets are suffering from lack of green feed as well. Poultrymen in your district say they cannot feed much milo in summer. If you should omit the milo and put barley in its place I think you would not need to drop the corn provided it is cracked. Whole corn is especially fattening. The pullets are too old for a growing mash. Let them have a laying mash and put their energy into making eggs. Give plenty of green feed—alfalfa is best for summer—and make them scratch for every bit of grain they get. You do not say how much grain you are feeding 100 pullets each day, but from six to seven quarts is sufficient. Make them eat more mash and they will lay more eggs.

Swellhead

During the spring and early summer I noticed some of my chicks with eyes swollen, at times entirely shut. On examination I found matter resembling milk curd but more solid and varying in size from a small pea to a dime. When this was removed the chicks were all right.—Subscriber, Orland.

What gave these chicks swellhead, I wonder? Did they roost in a coop where they had not room enough and then take cold when they came out into the chill morning air or was it merely lack of ventilation? Chicks do not have swellhead (which is a form of roup) if they have been kept under perfectly sanitary conditions—clean coops, fresh air, plenty of room inide and out, and a chance to run. Cleaning the eyes with boric acid is all the treatment required if the cause is removed.

SOUTHERN CALIFORNIA EGG-LAYING CONTEST

Southern California farm bureaus have united with the Poultry Producers of Southern California in planning for and financing an egg-laying contest which will begin October 1, at Pomona.

Those intending to enter birds should forward entries without delay as the number of entries will be limited to 50 and it will be "first come, first served."

Entry blanks can be obtained from G. E. Gordon, Room 361 Court House, Los Angeles; from L. A. Brooks, Secretary of the Poultry Producers; from M. A. Schofield at Gardena; from E. J. Houser, at Fontana; or from C. G. Ross or C. E. Bayer, secretary of the chamber of commerce, at Pomona.

At the special meeting of the stockholders of the Poultry Producers of Central California, on July 14 at the office of the association in San Francisco it was decided to increase the capital stock to $750,000. There was also informal discussion of an educational campaign to more thoroughly acquaint the members with the principles of cooperation. General Manager J. H. Barber writes: "Subscriptions to the amount of nearly $15,000 have already been accumulated by deduction from egg shipments, and it will not be long until we have secured by this means a substantial addition to our working capital, which will be very welcome."

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California Farm Bureau Egg Laying Contest

By Prof. J. E. Dougherty

FOR the 30 days of June the contest flock averaged 62.7 per cent, or 19.1 eggs per hen. Hanson's pen still holds the lead, with Hollywood Farm, Geo. Gray and S. L. Gibson still holding second, third and fourth places respectively as in May, but W. A. Ford's pen has forged ahead into fifth place and forced Marshall back to sixth place. The total production since November 1 has averaged 54.5 per cent for the contest flock as a whole.

The line-up to date follows: Hanson's Poultry Farm, Corvallis, Oregon, 1,723 1/3 eggs; Hollywood Farm, Hollywood, Washington, 1,654; Geo. Gray, Santa Cruz, 1,643; S. L. Gibson, Santa Cruz, 1,625 1/3; W. A. Ford, Umatilla, 1,622; W. H. Marshall, Santa Cruz, 1,616; Gibson, 1,537 1/3; R. J. Kenter, Santa Cruz, 1,509 1/3; Santa Barbara Poultry Ranch, Santa Barbara, 1,507; Gibson, 1,470.

Among the high individuals to date, Hollywood's hen is still leading with 201 eggs to her credit, but Lehman's hen has dropped to sixth place and hen from the La Rita Farm has moved up into second position with Conrado's hen third and Hanson hen fourth. The ten high hens to date are: Hollywood, 201 eggs; La Rita, 192; Conrado, 192; Hanson, 190; Hollywood, 189; Lehman, 188; Oregon Ag. College, 188; Crewdson, 186; Hanson, 186; Brenneke, 186.

June records produced a general shake-up in the monthly standings of the various pens. Alex Stewart jumped from sixth place in May to first place in June. S. L. Gibson moved up to second from fifth place, forcing out Geo. Gray, who dropped to third position which was held last month by pen of D. B. Walls.

The new line-up of leading pens for June follows: Alex. Stewart, Santa Cruz, 230 1/3 eggs; Gibson, 228 1/3; Gray, 226 2/3; Ford, 224 2-3; Ed Butler, Oakland, 221; D. B. Walls, Petaluma, 219 2/3; W. J. Neef, Santa Cruz, 218; J. S. Conrado, Santa Cruz, 217; Geo. Wood, Santa Cruz, 217; Wood, 215.

During the month Oregon agricultural college Barred Rock jumped into the lead as the highest June layer with a final total of 28 eggs in 30 days. Four others tied for second ribbon with a production of 27 eggs, and ten more tied for third position with a yield of 26 eggs each.

The high hens for June follow: Oregon Agricultural college (Barred Rock), 28 eggs; La Rita Poultry Farm, 27; Walls, 27; Dr. C. K. Hale, Santa Cruz, 27; Hale, 27; Gray, 26; Gibson, 26; Hanson, 26; Harry Beernink, Lynden, Washington, 26; C. E. Hyde, Seabright, 26; Oregon agricultural college, 26; H. C. Klinesmith, Hoff, Oregon, 26; N. C. Westerfield, Modesto, 26; Walls, 26; La Rita, 26.

Hen in Chas. Lehman's pen has been running the leading hen a close race for the past few months but evidently couldn't hold off her strong maternal instincts for sport's sake any longer, for she went broody this month and has dropped back to sixth place. The first hen to hit the 200-egg mark was Hollywood hen No. 54, which laid her two hundredth egg June 29th. Many more will cross the 200 line and begin advancing toward the 300 mark before July is past.

All birds, unless otherwise indicated, are S. C. White Leghorns.

Fractional figures in pen yields are due to floor eggs being equally divided between the three entries in each pen.

Poultry Producers Annual

The stockholders' meeting of the Poultry Producers of Southern California will be held on August 3 at the office of the company, 1560 Industrial Street, Los Angeles. The management is urging members who cannot come to have proxies in hand of the secretary at least five days prior to the meeting. Two-thirds of the stockholders must be present.

In a recent membership letter Chairman Ross of the executive committee writes "About Ourselves."

"The growth of our organization since 1917, when we started with 120 shippers and an initial pool of 10,449 dozens of eggs, may be briefly indicated by stating the maximum number of shippers in each year, and the number of dozens of eggs in the largest pool of that year.

"In 1917 we reached a maximum of 442 shippers and our largest pool was 99,253 dozens of eggs. The following year brought a decrease in the number of shippers and the maximum pool was only 83,268 dozens. The next year, 1919, brought a material increase in the number of shippers over the previous year, but the increase came late in the season and the maximum pool was about the same as in 1918.

"In 1920 there was a rapid increase in membership. We were receiving eggs from a maximum of 538 shippers, while the largest pool was 128,477 dozen, an increase of over fifty per cent above the previous year.

"The present year began with 430 shippers, but this has increased rapidly until we are now receiving eggs from about 650 shippers, and our maximum pool was number 18, when we received 152,328 dozens of eggs.

"During these years there has been a wide fluctuation in the market for fresh eggs and our pool prices have reflected this accordingly. In 1917 the range was from a minimum of 25 cents to 57.55 cents; the following year the lowest pool returned to members was No. 15 when the price was 35.61 cents. This steadily increased until pool No. 45 was 80.61 cents. The next year, 1919, had a minimum of 36.19 cents and a maximum of 81.02 cents; last year the minimum pool was No. 12 at 38.85 cents, while the highest pool yet paid our members was No. 45, when we returned 84.54 cents. These figures are the 'Pool Prices' as given on the statements sent out with the remittances."

DON'T

Don't ship "dirty" eggs during the non-storage season, but clean all soiled or dirty eggs carefully.

Don't pack two grades of eggs in the same filler.

Don't pack your washed eggs with those which are unwashed, but separate them and mark all washed eggs with the special colored slips provided for that purpose.

Don't ship any eggs without grading. Pack the "Extras," "Pullets" and "Pewees" separately, and if less than a full case mark each with a slip of paper.

Don't guess at the weight when in doubt as to grade; use your scales.

Don't handle a bucket of eggs like you would a box of "spuds"; remember eggs are fragile and every time you set your bucket down on the ground, unless you are extremely careful, you will crack one or two, and so reduce their value.

Don't leave a bucket or a case of eggs in the sun for even five minutes, because it does them harm.

Don't store your eggs in a warm place, a dirty or dusty place, or where they are subject to currents of air, as this will make "seconds" of a first class article very quickly.

Don't permit your nests to get filthy, but keep them well filled with clean planing mill shavings. Attend to this regularly.

Don't expect to receive returns for "Extras" unless you are delivering "Extras." The same applies to other grades as well.

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ARTHUR R. MAAS, CHEMIST 308 EAST EIGHTH ST., LOS ANGELES, CAL.

Los Angeles Markets

Los Angeles, July 27, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price 45 cents.

July	20	21	22	23	25	26
'21 ...	44	..	45	45	45	45

CHEESE

Brokers' prices:
California flats, 22@24.

EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 37; case count, 35; pullets, 33; pewee pullets, 23.

July	20	21	22	23	25	26
'21 ...	37	..	37	37	37	37

POULTRY

Price to producers: Hens, 15@27; colored, 31; broilers, 25@27; roasters, 33; old roosters, 12; fryers, 30; ducks, old, 12; ducklings, Pekin, 3½ up, 30; others, 25; geese, 25; turkeys, live, young tom, 50; dr., 55; old, live, 40; dr., 44; hens, live 40; dr., 44; squabs, 45@47.
Belgian hares, live, 11@14; old 8.

LIVESTOCK

Los Angeles, July 26. — Weighed and delivered off cars without food or water:
Hogs, hard grain fed, 125 to 175 lbs., 11.00; 175 to 225 lbs., 11.50.
Cattle (on foot, gross weight): Steers, good, 7.00; medium, 6.50; cows, good, 5.50; medium, 5.00; bulls and stags, 3.00@3.50; calves, 125 to 150 lbs., 9.00; 175 to 225 lbs., 8.50.
Sheep: Ewes, 5.00@5.50; lambs, 8.50@9.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock July 26, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.
Potatoes: Supplies heavy, market steady. New stock: Wide range in prices, mostly 45@50; few best 60 per lug; poorer, 35@40 per lug; No. 1 sacked per cwt. mostly 1.25@1.40; poorer, 75@1.00; bakers, 2.00@2.25. Sweets: Supplies moderate, market weaker. Locals: 10@12 lb., poorer low as 7 per lb.
Onions: Supplies moderate, movement slow. Stocktons: Australian Browns, 90@1.00 sacked per cwt. Local: Whites, 80@90 per lug; Browns, 65@70.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock July 26, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.
Beans: Supplies light, market firm. Kentucky Wonder mostly 4@5; jobbing 3@3½; Limas: Supplies increasing, market weaker, mostly 7@8; poorer 6 lb.
Beets: Doz., mostly 40.
Cabbage: Field crate mostly 2.00@2.25.
Carrots: Doz., mostly 40.
Celery: Supplies liberal, market steady, cr. 6.00@6.50; poorer 5.50.
Corn: Supplies liberal, movement moderate, market firm. Local: Per lug 60@75, mostly 70.
Cucumbers: Supplies liberal, market steady. Local: Lugs mostly 50@60; poorer 40.
Lettuce: Local field crate mostly 90@1.00; few fy., 1.25@1.50.
Peppers: Supplies liberal; market weak. Imperial Valley: Bells mostly 15@16; fy. 20; Chili, 12@13; poorer 7@11.
Radishes: Supplies moderate, market steady, mostly 15 per dozen bunches.
Tomatoes: Supplies heavy. Good demand for fancy stock, market steady. Wide range in quality and condition, considerable ordinary condition. Local: Per lug mostly 1.50@2.00, fancy 2.25, No. 2, 1.00@1.25, No. 3, 50@75.
Turnips: 40 per doz. bunches.

FRESH FRUITS

Apples: New Stock: Supplies liberal, market weak, mostly 50@75, few fancy 1.00@1.10 per lug. Crabapples mostly 75 per lug, few 65.
Blackberries: Supplies limited, market strong, 30 pint crate mostly 4.25@4.50; fy. 5.00.
Cantaloupes: Demand and movement slow, market steady. Home-growns arriving on market. Standards, wide range in prices 1.75@2.00, poorer 1.25@1.50. Homegrowns: Per crate 3.00@3.50; few 3.75. Jobbing: Standards 1.50@1.75, few best 2.00, over ripe and ordinary 1.00@1.25.
Casabas: Supplies liberal. Demand moderate; market weaker, 2@2½ per lb.
Figs: Supplies moderate, market firm. Northerns: Flats, Black Spanish mostly 1.15. Locals: 15@20 per lb.; Calimyrna, large flats 2.00.
Grapes: Supplies liberal. Demand good, market weak. Per lb. Malagas mostly 10@13, few fancy Thompson Seedless 8@10 per lb.
Peaches: Supplies heavy, market weaker. Wide range in quality, mostly ordinary. Lugs, various varieties 1.00@1.25, poorer 75@90, fancy 1.50@1.75, Early Crawfords, fancy 1.65@1.75.
Pears: Supplies light, market steady, Bartletts 7@8 per lb.
Plums: Supplies light, market stronger. Santa Rosas mostly 6@8. Prunes: 6@8 per lb. Satsumas 3½@4½ per lb. Burbanks 2½@3½ per lb. Wicksons 5@5½ lb.
Raspberries: Supplies light, market stronger. Cuthberts 4.50@5.00.
Strawberries: Supplies light, market weaker. Per crate No. 1, 3.50@4.00, No. 2, 3.00@3.25.
Watermelons: Supplies liberal. Demand moderate, market firm, considerably ordinary condition. Mostly 2¼@2½, Klondikes 3½@4½; homegrowns 5. Jobbing: Various varieties, best 30.00@40.00 per ton, poorer 20.00@25.00, few Klondykes 60.00@70.00 per ton.

CITRUS FRUITS

Grapefruit: Supplies liberal, market firm. Local: per box, market pack 2.25@2.50, special packed brands, 3.00@3.75.
Lemons: Supplies light, market firm, demand good. Local: Packed box mostly 7.50@8.00; loose, per box, 4.00@5.00; mostly, 4.25@4.50; lug boxes 1.25@1.50.
Oranges: Supplies liberal, market steady. Valencias, best brands, all sizes, 4.00, few 4.50; ordinary 2.50@3.50; loose pack 1.00@1.50.

HONEY

As reported by the Bureau of Markets: Los Angeles: Supplies of White Sage, White Orange and Light Alfalfa, heavy. Light wire inquiry. Movement very slow, market steady, little change in prices. Carloads f. o. b. usual terms at loading points: White Orange new crop 12@12½; old crop 10@11; Light Amber Alfalfa old crop 5@6, new crop 5½@6½; White Sage 12@12½. Hawaiian, no sales reported. Beeswax: Market weak, very light demand. Dealers asking 30@33 for light and 24@26 for dark. Estimate of crop unchanged from last report. Sage and Orange crop very uneven, some places normal, others practically none. Exchange expects stronger market but other brokers expect weak and dull market.

GRAIN AND FEEDS

Grain Exch. price bid July 26:
Corn: Bulk No. 2, Yellow 1.58¾.
Milo: Eastern No. 2 bulk, 1.80; No. 3, 1.70.
Wheat: Utah-Idaho, 26.00.
Barley: Carloads, 1.25.

HAY

Alfalfa Growers of California report prevailing prices f. o. b., Los Angeles, receipts alfalfa and grain hay week ending July 23, 1,900 tons; 500 holdover.

No. 1 Dairy	19.00
Standard	15.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats	18.00@26.00
Barley	16.00@24.00
Alfalfa, No. 1 Dairy	20.00
Standard	16.00
Straw	10.00

San Francisco Markets

San Francisco, July 26, 1921.

Quotations made daily by San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

BUTTER

Dairy Exchange quotations July 26:
Extras Choice 43½
Dairy Exchange prices extras this week and year ago:

July	19	20	21	22	23	25
'21 ...	..	43	43½	43½	43½	43½

CHEESE

Dairy Exchange quotations:

Jack, full cream, street prices	14½@16
Oregon, Y. A.	34
Oregon Trips	21
Ore. Young America	24
Cal. Flats	25
Cal. Y. A.	26

EGGS

The prices paid by wholesalers to producers are eight per cent less.
Dairy Exchange quotations, dozen including cases, July 19:

Extras	43½
Extra Firsts	39½
Dirties No. 1	36
Extra Pullets	35½
Pullets Extra Firsts	34
Undersized	24

July	19	20	21	22	23	25
'21 ...	..	42	42½	41½	..	43½

POULTRY

Wholesale prices are:
Young chickens: Leghorns, 1 to 1¼ lbs., 25@26; 1½ to 1¾ lbs., 2 lbs. and up 35; heavy breeds, 1½ to 1¾ lbs., 27@30; 2 lbs. and up, 43@47. Staggy roosters, 20@25; old roosters, Leghorns, 15; do, heavy breeds, 18. Hens: Leghorns, large, 20; do, small to medium, 17@20; heavy breeds, 30@32.
Ducks: Young, 35 per lb., old, 25; geese, 25 per lb; turkeys live, 35; dressed, 45@50; Belgian hares live, 13@14; dressed, 18@20; squabs fancy, 45@48: do, common, 3.50 per doz.; old pigeons 3.00.

LIVESTOCK

Western Meat Company prices are:
Cattle: Steers, No. 1, 6@6½; do, second quality, 5½@6.
Cows and Heifers: No. 1, 4½@5; do, second quality, 4@4½.
Calves: Light weight, 7½@8; heavy 5½@6.
Sheep: Wethers, 3½@4; ewes, 2½@3.
Lambs: Milk, 6½@7.
Hogs: Hard, fat, grain-fed, weighing 125 to 200 lbs., 12; do, 200 to 250 lbs., 11; do, 250 to 350 lbs., 10; light sows, 10; heavy sows 9.
California Farm Bureau Association:

No. Hogs	Ave. Wt.	Dock	Price
Turlock, July 19			
44	180	...	$11.25
22	232	...	10.00
3	307	...	8.00
One car, nine consignors, $1,474.65.			
Fresno, July 22			
36	171	10	13.65
43	165	...	13.15
6	230	...	12.65
4	272	50	10.65
2	265	...	12.15
1	460	180	5.00
18 feeders	147	...	11.50

One and one-fourth cars, 12 consignors, $2,441.54.
Total for the week, two and one-fourth cars, 21 consignors, $3,916.19.
These prices are net to the farmers, while the prices as quoted in the papers of other markets are f. o. b. packers' yards.

POTATOES AND ONIONS

Wholesale prices:
Potatoes: Street prices: New, Garnets, 1.25@1.50 per 100 lbs.; do, White, 1.50@1.75.
Onions: Australian brown, 35@50 per bag; new red, 75@1.00 bag; green, 1.50@1.75 bag.
Garlic: New, 6-8.

VEGETABLES

Wholesale selling price:
Artichokes: Crate, 3.00@12.00.
Beets: 1.75@2.00 per sack.
Beans: Kentucky Wonder, 8@10 lb.; garden, 10@11 lb.; Italian, 12@13 lb.; Lima, 10@12; wax, 4@8; Blue Lake, 10.
Carrots: Sk., 1.25@1.50.
Celery: New, 8.00@9.00 cr.
Corn: Alameda, 3.00@5.00 per crate of about 9 dozen ears; 2.00@4.00 per sack.
Cucumbers: 25@50 lug; English 2.00.
Eggplant: Lb., 10.
Okra: 8@12½ lb.
Peas: Lb., 5@7; fcy., 7; sk., 1.00.
Peppers: Bells, 10@13; Chili, 15@20.
Squash: Bay, 75@1.00; Los Angeles, 1.00@1.25; Italian, 50@75.
Spinach: Lb., 2@4.
Tomatoes: Merced, flats, 1.40@1.50; San Pedro, per small lug, 2.50@3.00; No. 2, as low as 50; river, lugs, 2.50@3.50; Merced, large, 28-lb. box, 2.25@2.50; small, 1.75@2.00; 18-lb. box, Merced, 1.50.

FRESH FRUITS

Apples: New crop white Astrakhans, 50@75 per small lug; do, reds, 50@75 per lug box; fancy Gravenstein, 75@1.50.
Apricots: 1.00@1.25 per 4 basket cr.; 60@1.00 per lug; 3@5 lb.; fancy 6.
Avocados: California, doz., 3.00@6.00.
Bananas: Lb., 8½@10.
Blackberries: 35@40 per drawer; cr., 1.75.
Cantaloupes: Standards, 1.50@2.00; do, Turlock, 1.75@2.50; ponies, 1.50@1.75; do, Turlock, 1.50@1.75; flats, 50@75; Honey Dew, 1.25@1.75 per crate; flats, 75@1.00; casabas, 1.75@2.50.
Cherries: 1.50@1.75 per box.
Currants: 1.15@1.30 per drawer; 8.00@9.00 per chest.
Figs: Black, single layer, 40@65; double, 75@1.00.
Gooseberries: 7@8 lb.; English, 15 lb.
Crabapples: 2.00@2.50 per box.
Grapes: Per crate: Seedless, 3.25@3.50; Malaga, 3.25@3.50; Fontainbleu, 2.00@2.25.
Huckleberries: 20 lb.
Loganberries: Red, 7.00 per chest; 40@55 per drawer.
Loquats: 6@7.
Nectarines: Wrapped, 1.75@2.00 per 20-lb. box; unwrapped, 1.25; Sacramento river, 2.00 per crate; No. 2, 1.50@1.75.
Peaches: 1.00@1.75 cr.; 2.00@2.25 lug; extra fancy, 4.00.
Pears: Bartlett, 2.00@3.75; others 1.50@1.75.
Plums: Santa Rosa, 1.50 per crate; others 1.00@1.25 per crate; lugs, 1.00; Satsuma, 1.50@1.75; Burbank, 75@1.00; Clyman, 1.00@1.50.
Prunes: Cr., 1.50.
Raspberries: 60@75 per drawer; 12.00 chest.
Strawberries: Peninsula and Watsonville, 50@70, some higher; Salinas, 1.20@1.60 per crate; Watsonville, 1.00@1.25 crate, according to quality.
Watermelons: 1¾@2½ per lb.

CITRUS

Valencias, 3.50@4.75 box. Lemons, 8.00@9.50 per box; Lemonettes, 3.00@4.25; grapefruit, 2.50@4.00.

DRIED FRUITS

Prices have been named on peaches, figs and apricots by the associations; prune prices not yet named. Sales Manager Wallace of the California Prune and Apricot Growers writes that they will not be for three or four weeks.
Apples, 1921 (Packers' Quotations):

Choice (in 50s)	10¼
Extra choice (in 50s)	10½

Apricots, 1921 (California Prune and Apricot Growers) Bulk Basis:

	Sunsweet	San Joaquin
Standard	12	10½
Choice	16	13½
Extra Choice	17	14½
Fancy	19	15½
Extra Fancy	21	....

Peaches, 1921 (Cal. Peach and Fig Growers), Aug.-Sept.-Oct. shipment, guaranteed to Jan. 1:

	Yellow	Muir
Slabs (in 50s)	8¾	....
Standard (in 50s)	9	9¼
Choice (in 50s)	9½	....
Fancy (in 50s)	10½	11
Extra fancy (in 50s)	11½	12
Practically Peeled—		
Standard (in 50s)	10	10¼
Choice (in 50s)	10½	....
Fancy (in 50s)	11½	12
Extra fancy (in 50s)	12½	13
Cartons, 30 11-oz., per case		3.10
Cartons, 60 11-oz., per case		6.00
Cartons, 24 2-lb., per case		6.50
Carton, 10 5-lb., per case		6.60

Figs, 1921 (Cal. Peach and Fig Growers), Sept.-Oct. shipment, guaranteed to Jan. 1:

White—	
Standard (in 50s)	6½
Choice (in 50s)	8
Fancy (in 50s)	10½
Bricks, 12 No. 10s	1.10
Bricks, 24 No. 8s	1.80
Bricks, 50 No. 6s	2.80
Bricks, 70 No. 4s	2.95
Layers, 10-lb., 4-row	1.60
Layers, 10-lb., 5-row	1.40
Calimyrna—	
Standard (in 50s)	7½
Choice (in 50s)	10½
Fancy (in 50s)	13
Bricks, 24 No. 8s	2.05
Layers, 10-lb., 6-row	1.90
Black—	
Standard (in 50s)	6
Choice (in 50s)	8
Fancy (in 50s)	11

Prunes, 1921 (Packers Quotations):

Size	Basis Price	Per lb. in 25-lb. Boxes
30-40s	8½@8¾	12¼@12½
40-50s	7 @7¼	10¼@10½
50-60s	5½@5¾	8¼@8½
60-70s	4¾@5	7 @7¼
70-80s	4½@5	7 @7¼
70-80s	4½@4¾	6¼@6½
80-90s	4¼@4½	5½@5¾
90-100s	4¼@4½	5 @5¼

Raisins, 1920 (Cal. Assoc. Raisin Co.):

Seeded—	
Sun-Maid, 16s	21⅞
Bulk, bakers, in 25s	20⅞
Loose Muscatels—	
3-crown, in 25s	24⅜
2-crown, in 25s	23⅝
1-crown, recleaned, in 25s	20⅞
Seedless—	
Thompsons, 16s	21⅞
Thompsons, bulk, in 25s	21⅜
Thompsons, bakers, in 25s	22⅜
Sultanas, bulk, in 25s	21⅛
Bleached Thompsons—	
Choice, sulphur, in 25s	23⅞
Fancy, sulphur, in 25s	26⅞
Extra fancy, sulphur, in 25s	30⅜
Soda dipped, in 25s	24⅞
Oil dipped, in 25s	23⅞
Bleached Sultanas—	
Oil dipped, in 25s	23⅜

BEANS

Below California Bean Growers Association shippers prices choice recleaned:

Large Whites	3.95
Small Whites	3.55
Pinks	6.40
Mexican Reds	8.00
Red Kidney	9.75
Henderson Bush	4.15
Cranberries	5.65
Bayos	10.50
Blackeyes	8.00

HAY AND FEED

Alfalfa Growers of California state that prevailing prices f. o. b. S. F. are:

No. 1 Dairy	16.00
Standard	14.00

Under wate of July 23, A. W. Scott Co. says:
Receipts, 1,706 tons compared with 1,539 tons last week. Probably the local market is at as low an ebb as it will reach during the season. Consuming demand is less than ever has been known in San Francisco. Alfalfa is still decidedly off, with consumers buying not more than a few days' supply at a time. Mill feeds are unchanged, with demand reduced to its very lowest.
We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers charges of switching, cartage, commission and handling expenses must be added according to conditions).

Wheat Hay, fancy	15.00@18.00
Wheat Hay, fair grade	13.00@15.00
Tame Oat Hay	12.00@15.00
Wild Oat Hay, new crop	10.00@12.00
Barley Hay	10.00@12.00
Alfalfa Hay, new 2nd cutting	12.00@14.00
Alfalfa Hay, new first cutting	9.00@11.00
Stock Hay	8.00@10.00
Barley, Ground	31.00@33.00
Barley, Rolled	27.00@28.00
Oats, Rolled Feed	32.00@35.00
Bran and Millrun	33.00@35.00
Middlings	46.00@49.00
Linseed Meal	36.00@38.00
Coco Meal	22.00@25.00
Alfalfa Meal	22.00@24.00
Cottonseed Meal	35.00@40.00
Sugar Beet Pulp	32.00
Molasses, Tanks	21.00
Molasses, Bbl.	25.00
Milo	40.00@45.00
Corn Meal and Cracked Corn	40.00@43.00
Scratch Feed	46.00@48.00

GRAIN

Wheat: Milling, 1.90@1.95; feed, 1.90@1.95.
Barley: Feed, 1.20@1.35; shipping, 1.30@1.45.
Oats: Red Feed, 1.25@1.35.
Corn: California yellow, 1.55@1.60; white Egyptian, 2.20@2.30 per cental; California red milo, 2.00@2.10; Eastern red milo, 1.85@1.95; Eastern kafir, 1.75@1.80.

Citrus Markets

Los Angeles, July 27, 1921.

Oranges are going forward rapidly, sometimes reaching as high a shipment as 200 cars daily. As a rule, however, totals do not exceed 100 to 150. Large size fruit has advanced slightly from quotations last week. Market for small offs is rather weak.
The spectacular phase of the lemon market has been eliminated, but very strong condition still exists. There are now some 70,000 boxes of foreigns in transit or in dock.

Shipments

Shipments of citrus fruits to date since November 1, 1920, Southern California: Oranges, 32,277 cars; lemons, 9,271; total, 41,548. To same date last season: Oranges, 25,725; lemons, 6,494; total, 32,219. From Central California to date this season: Oranges, 6,637; lemons, 212; total, 6,849. To same date last season: Oranges, 5,377; lemons, 289; total, 5,666. From Central California to date this season: Oranges, 305; lemons, 5; total, 310. To same date last season: Oranges, 261; lemons, 22; total, 283.

AT THE AUCTIONS

July 20

New York: 21 or., 3 mixed, 2 lem. Val. 3.25-7.00, grapefruit 3.00-3.55, lem. 3.70-5.90.
Philadelphia: 7 or., 1 lem. Val. 3.40-5.95, grapefruit 2.65, Mikes. 3.05-3.50, lem. 7.00-10.35.
Boston: 14 or., 3 lem. Val. 3.15-5.65, lem. 8.75-11.75.

July 21

New York: 23 or., 2 mixed, 1 lem. Val. 3.25-6.85, grapefruit 3.15-3.85, lem. 6.00-8.25.
Pittsburg: 1 or., 2 lem. Val. 4.60-5.40, lem. 2.40-8.60.
St. Louis: 5 or., 2 lem. Val. 3.35-4.75, lem. 7.70-7.95.

July 22

New York: 17 or., 1 grapefruit. Val.

3.25-6.80, grapefruit 3.25, Tanges. 2.00, lem. 6.25.
Cincinnati: 2 or., 2 lem. Val. 3.90-4.85, lem. 8.90-10.20.
Boston: 5 or., 1 lem. Val. 4.55-5.30, grapefruit 2.25-2.65, lem. 10.10-10.20.
Pittsburg: 2 or., 2 lem. Val. 4.40-7.80, lem. 7.20-9.40.
Philadelphia: 4 or., 3 lem. Val. 3.95-8.00, grapefruit 3.20, Mikes. 3.30-4.00, lem. 7.05-8.35.
Cleveland: 4 or., 2 lem. Val. 3.50-4.95, lem. 4.45-9.45.
St. Louis: 5 or., 5 lem. Val. 3.30-4.70, lem. 3.70-10.90.

July 25

New York: 19 or., 5 mixed, 2 lem. Val. 3.85-7.15, grapefruit 2.30-4.75, Seeds. 3.60-4.20, lem. 5.75-9.45.
Boston: 4 or., 7 lem. Val. 4.85-6.40, grapefruit 3.55, lem. 4.50-10.50.
Cleveland: 7 or., 4 lem. Val. 2.90-6.65, seedless grapefruit 1.90, lem. 4.50-8.20.
Pittsburg: 6 or., 5 lem. Val. 3.65-5.25, seedless grapefruit 1.70-2.35, lem. 4.15-8.35.
Philadelphia: 10 or., 1 grapefruit, 5 lem. Val. 4.00-6.20, grapefruit 2.05-2.45, lem. 3.40-9.35.
Cincinnati: 2 or., 5 lem. Val. 4.00-5.30, lem. 6.10-9.75.
St. Louis: 7 or., 3 lem. Val. 2.45-4.85, lem. 6.13-8.65.

July 26

New York: 18 or., 1 grapefruit, 2 mixed, 2 lem. Val. 4.05-7.50, Mikes. 4.10-4.40, seedless grapefruit 3.25-4.75, lem. 5.75-9.00.
Boston: 7 or., 7 lem. Val. 3.90-6.55, lem. 6.10-9.45.
Philadelphia: 6 or., 3 lem. Val. 3.60-5.75, Mikes. 2.80-3.55, lem. 2.70-9.35.
Pittsburg: 1 or., 1 lem. Val. 5.15-5.35, lem. 5.95-7.75.
St. Louis: 3 or., 3 lem. Val. 3.55-4.85, lem. 5.25-8.70.

CATTLE MARKET SITUATION

The Chicago market has again improved during the past week approximately one-half cent, while the Portland market has held steady, as well as the San Francisco and Los Angeles markets. Receipts at Chicago have been approximately the same this week as last. Sales in California are reported from northern, central and southern points at 6¼ cents for steers and 5 to 5¼ cents for cows. These sales have all been f. o. b. shipping points and have been sent to Sacramento, San Francisco and Los Angeles markets. Information from 60 market points in the United States shows that the number of feeders sent to market during the first six months of this year has decreased 25 per cent from last year's figures.

The following list shows the number of cattle sent to market the first six months of this year from additional counties not listed in the last market report: Lassen County, 3,489; Modoc County, 4,220; Plumas County, 533; Shasta County, 2,776; Marin County, 135; Mendocino County, 217; Sacramento County, 1,541; Solano County, 1,584; Sonoma County, 602; Placer County, 1,516; San Francisco County, 30; San Mateo County, 71; Santa Clara County, 5,756; Santa Cruz County, 46; San Joaquin County, 1,554; Orange County, 838; Riverside County, 876; San Bernardino County, 1,226; San Diego County, 331; Santa Barbara County, 5,529.

Do not offer half fat cattle for sale. Market only prime beef.—R. M. Hagen, Secretary, California Cattlemen's Association.

IT PAYS TO CLEAN UP SQUIRRELS

Horticultural Commissioner Alley of San Luis Obispo County writes:

"The first week in July the U. S. government biological survey started poisoning the government lands in the southern part of Monterey County. The crews will move south and poison the Coast Range in San Luis Obispo County and if they have sufficient funds left will poison the Pozo and Avenales country.

"Last year the government had no crews at work in the county. The poisoning of government lands was done by the rancher whose land joined the forest reserve with poisoned grain furnished by the survey and under the direction of the county horticultural commissioner.

"Does it pay to clean up squirrels on property owned by an absentee and rented at 20 cents an acre? A 500 acre field near Templeton was treated with poisoned grain last year at 40 cents per acre. This year the owners had the land gone over with carbon bisulphide. Result: When the job was finished a nearby rancher wanted to rent the piece for $1 per acre.

"As the land is situated in a district where a gas campaign was carried on this year, the owners will begin to receive returns on their investment, as the district is squirrel free."

A year ago a bushel of oats bought three gallons of gasoline; today it buys one gallon. A year ago a ton of coal could be bought with four bushels of potatoes, while today it takes 57 bushels of potatoes to buy a ton. Hides and wool have gone begging for some months, yet look at shoe prices and many garments. They surely can't complain that the farmer hasn't stood the giant's share of loss taking—Holstein-Friesian World.

Alfalfa Weevil Quarantine

EVERY official of the state department of agriculture has watched with dread the gradual spread of alfalfa weevil in states to the eastward. So far as known not one of the pests has yet entered California, but they have been intercepted at the boundary line and the infestation has reached to the very gateways of the state. Campers and others driving into California and coming through the infested regions have no knowledge whatever of the deadly nature of the pest and have purchased bales of hay in infested districts and loaded in their wagons and driven straight for California. The seriousness of the siutation has made necessary Quarantine Order No. 34 from which we quote:

"The fact has been determined by the director of agriculture that an insect injurious to alfalfa and other forage and cover crops, known as alfalfa weevil (Phytonomus posticus, Gyll.), new to and not heretofore prevalent or distributed in the state of California, exists in the states of Utah, Idaho and Wyoming, and in certain counties in the state of Colorado, to-wit: Delta, Gunnison and Montrose, and in certain counties in the state of Nevada, to-wit: White Pine and Washoe, and in a certain county in the state of Oregon, to-wit: Malheur, all of which being hereinafter designated as infested territory, and that alfalfa hay and other hay and cereal straw, alfalfa meal, alfalfa seed, salt grass packing, baggage, emigrant movables, household effects, household implements, camping effects, camping implements, livestock, potatoes, nursery stock, used alfalfa meal milling machinery, and all machinery, implements, bags and other containers, that have been used in the milling, baling, harvesting or threshing of alfalfa, railroad cars, automobiles, automobile trailers, trucks and other vehicles are liable to be carriers of said alfalfa weevil into territories otherwise free from this pest;

"Now, therefore, it is declared necessary, in order to prevent the introduction of said alfalfa weevil into the state of California, that a quarantine be and the same is hereby established at the boundaries of the state of California, in accordance with the provisions of section 2319b of the political code of the state of California, against said alfalfa weevil, all alfalfa hay and other hay and cereal straw, alfalfa meal, alfalfa seed, salt grass packing, baggage, emigrant movables, household effects, household implements, camping effects, camping implements, livestock, potatoes, nursery stock, used alfalfa meal milling machinery, and all machinery, implements, bags and other containers that have been used in the milling, baling, harvesting or threshing of alfalfa, railroad cars, automobiles, automobile trailers, trucks and other vehicles from said infested territory except as hereinafter provided."

There is a series of ten regulations providing that under certain conditions of inspection, fumigation or proof of harmless nature of the shipment the alfalfa hay, seed, packing grasses, potatoes and other feeds, nursery stock, household goods, etc., may be allowed to enter the state.

As showing necessity for extreme care at the state line we note the following in weekly letter of the state department of agriculture.: State quarantine officers stationed at Nevada state line found live alfalfa weevil in the bedding of an auto camper on July 10. "The accupants of the automobile in which the weevils were found had camped in the auto camp at Sparks, Nevada, and had cut alfalfa to place under their blankets for a bed. A careful inspection of the blankets at State Line brought to light a few stalks of alfalfa and the accompanying weevil. This occurrence illustrates in a graphic manner the possibility of introducing injurious insects through the medium of automobile transportation and proves conclusively that commercial shipments do not constitute the greatest problem in the enforcement of quarantine regulations."

COMING EVENTS

Eden Township Farm Products Show, Hayward, August 11-14.
North of Bay Counties Fair, Santa Rosa, August 24-28.
Downey Community Fair, Downey, August 25-27.
Yuba County Agricultural Fair, Browns Valley, Aug. 29-31.
Vintage Festival, St. Helena, September 3-5.
California State Fair, Sacramento, Sept. 3-11.
Fall River Fair, McArthur, September 7-9.
San Joaquin County Fair, Stockton, September 12-17.
Tulare County Livestock and Agricultural Show, Tulare, Sept. 13-17.
Humboldt County Fair, Ferndale, Sept. 13-17.
San Fernando Valley Fair and Market, San Fernando, Sept. 13-18.
Glenn County Fair, Orland, Sept. 19-24.
Kings County Fair, Hanford, Sept. 19-24.
San Diego County Fair, San Diego, Sept. 21-24.
Fresno District Fair, Fresno, Sept. 26-Oct. 1.
Orange County Fair, Huntington Beach, Sept. 28-Oct. 1.
Arbuckle Almond Show, Arbuckle, Sept. 28-Oct. 2.
National Swine Show, Springfield, Illinois, Oct. 3-8.
Ventura County Fair, Ventura, Oct. 5-8.
Shasta County Farm Bureau Fair, Anderson, October 6-8.
Southern California Fair, Riverside, Oct. 11-16.
California Association of Nurserymen Annual Convention, Exposition Park, Los Angeles, Oct. 20-22.
Date Festival, Coachella Valley, Oct. 21-23.
California National Livestock Show, San Francisco, Oct. 22-30.
California Horse Breeders Association, Los Angeles, Oct. 30-Nov. 5.
Pacific International Livestock Exposition, Portland, Oregon, Nov. 5-12.
Stanislaus County Poultrymen's Association Show, Winter Garden, Dec. 4-7.

FINE LIMESTONE IS THE BEST

To secure best results limestone that is used for soil improvement should be finely ground. Experiments have shown that when everything is considered it is best to use material that is pulverized fine enough to pass through an eight mesh or ten mesh sieve. The Missouri college of agriculture, through P. F. Schowengerdt, soil specialist, cautions farmers against using coarser limestone unless it is applied in such large quantities that sufficient fine material will be supplied.

It will not be profitable to use the coarse limestone and apply larger amounts unless it can be purchased for considerably less per ton than the correct size would cost. This is true because, if only three-fourths of a given quantity of material will pass through the eight mesh sieve, it will be necessary to purchase, haul and spread about one-third more ground limestone in order to get enough on the soil to produce the desired results.

COST OF RAISING ALFALFA

The Alfalfa Growers Association of California has been collecting actual figures as to cost of production of a ton of alfalfa in various alfalfa raising sections of the state. Here is statement of cost of production in the Riverside district, one of the important alfalfa districts in the southern part of the state, which produces almost exclusively hay for marketing; this particular ranch confines itself altogether to it. It is managed very efficiently and its hay has the highest reputation for quality. The figures are taken from its last year's accounts and therefore show actual results, not estimates: Size of ranch 250 acres:

Interest on investment, $6,178.50, $24.71 per acre.
Taxes, $2,390.23, $9.56 per acre.
Water, $2,739.53, $10.96 per acre.
All other expenses, $32,081.86, $128.32 per acre.
Total, $43,490.17, $173.55 per acre.
Total production 1,759.56 tons.
Cost per ton, $24.77 f. o. b. cars.

Civilization is a state of human development that moves a man to pay the laundry for destroying his collars. —Toledo Blade.

EUCALYPTUS STUMPS

A South African asked how he could most easily remove large eucalyptus stumps and his government forester answered as follows: "The method generally followed in these cases is during winter to bore holes (the number varying according to the size of the tree. Bore the holes downward to a depth of 12 to 18 inches. The agent used may be saltpeter, equal parts of nitric and sulphuric acids, or arsenate of soda. The former method is the safest. Place an ounce to two ounces of saltpeter in the hole, fill up with water and plug the hole. The following spring pour in a little paraffin and set alight and the wood will smolder away to the roots."

The newly appointed national radio service commission at its organization meeting last week with Postmaster General Hays outlined a plan for distributing crop information by means of wireless telephones, perhaps fitted with amplifiers so that large audiences may hear the reports at banks, county agents headquarters or other selected centers.

WEATHER REPORT

San Francisco, Cal., July 23, 1921.

Stations	Rainfall Wk.	Season	Norm.	Temp. Max.	Min.
Eureka	.00	.00	.11	62	48
Red Bluff	.00	.00	.00	104	64
Sacramento	.00	.00	.00	96	50
San Francosco	.00	.00	.01	65	50
San Jose	.00	.00	.00	80	48
Fresno	.00	.00	.00	104	63
San Luis Obispo	T	T	.01	80	52
Los Angeles	T	T	.00	86	62
San Diego	T	T	.00	78	64

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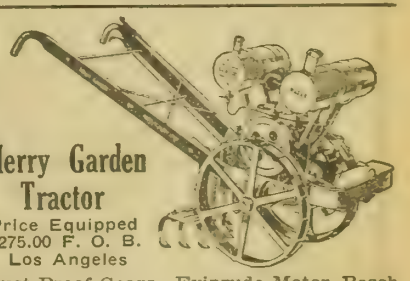

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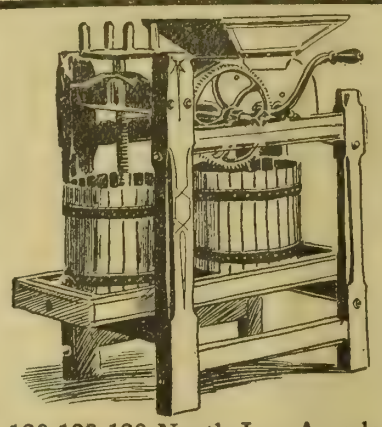

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LVII — August 6, 1921 — No. 6

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AUG 11 1921

Busy Scenes Where Cooperation Is

TO dispose of the fruit or not is one burning question with many California fruit producers. Last year it was not under consideration for before the producer was aware that harvesting time was approaching he was approached and a price made for his crop which made an immediate bank account possible, though, unfortunately, some agreements made as to f i n a l payments were never completed, for markets went bad and in some extreme cases the accounts were never closed. There were something like 1,500 people in California, however, who were not so seriously concerned. These were cooperators who had placed the canning and the marketing of their product in the hands of others.

These 1,500 people comprise growers who are members of two great cooperative canning concerns, one operating in the northern part of the state, and the other in the southern. The California Cooperative Canneries has its headquarters at San Jose, while the California Growers have offices in Los Angeles. These two canneries handle about 30,000 tons of fruit with value of, say, $25 per ton on the open market, but given an increase of at least 50 per cent because of the members placing the canning and marketing in the hands of one organization. This v a l u e to the grower is not large but good in that the return is sure, for it appears that all cooperative canneries, unless possibly one, will operate this year. Of the privately managed concerns hardly 50 per cent will open.

Established 1877 Forty-fourth Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877

Combined with California Cultivator 1914 Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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Saturday, August 6, 1921

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

If any of the 40,000 Cultivator subscribers fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

EDITORIALETTES

That busy scene is at Ontario. It is one of the five canneries operated by the California Growers Association, a non-profit organization made up of growers of California fruits, with five canneries located at Ontario, Hemet, Riverside, Fallbrook and Santa Ana, whle the California Cooperative Canneries has plants at Visalia, Tulare, San Jose and Modesto, under the general management of Vernon Campbell, while those in the South are managed by his brother, J. A. Campbell.

* * *

The one big lesson which these cooperative canneries are instilling into the minds of the members, at least—and we hope we may pass the word on to others—is that of security. Many a grower this year has been confronted by this situation: "Is it possible to get a buyer for my fruit at any price?" and not, "Can I get a satisfactory price?" The cooperator has not had to discuss this question; his own cannery, created by himself, gives him assurance that his year's work will not be entirely in vain. But in addition to that it now appears that the cooperator is reasonably well assured of at least 50 per cent more for his product than if he enters the open market, compelled to sell it in a fresh state.

* * *

An Eastern exchange suggests: "Every dairy farm should have a silo, and every farm that can afford a silo can afford a bathroom."

* * *

News headline: "Finds Money in Orchard." Lots of Cultivator readers are engaged in just that occupation. The trouble this year is that it takes a lot of digging to get it out.

* * *

Florida reports an everbearing orange tree. In habit it is similar to the lemon in that it carries flowers, small fruit and fully ripened fruit all at the same time. This everbearing tree is about 15 years old but its origin is a mystery.

GETTING ACTION

Californians are uniting — and effectively—in the tariff fight. The house hasn't treated western producers with justice, and the fight is being carried into the senate. It is true of wool; it is true of cotton; it is true of our fruits and nuts; it is true especially of poultry and eggs. At a recent meeting of the board of directors of the chamber of commerce in Los Angeles the fullest endorsement was given to the fight of Californians, and the schedule which California producers are working for was fully endorsed. The following gives some of the figures for which the California delegation now in Washington is working:

Citrus: oranges and grapefruit, 1 cent; lemons, 2 cents. Beans, other than Limas, 2½ cents. Almonds, unshelled, 5 cents; shelled, 15 cents. Walnuts, unshelled 4 cents, shelled 12 cents. Marmalade, 30 per cent ad valorem. Cotton, 1⅜ inch staple, 15 cents. Poultry, eggs per dozen, 12 cents; dried eggs, 36 cents pound, frozen, 15 cents; dressed poultry, 7 cents; live poultry, 4 cents. Olives: 70 cents per gallon olive oil bulk, 80 cents per gallon five gallon can or less, 20 cents per gallon non-edible oil, 25 cents per gallon olives in solution, 6 cents per pound olives not in solution.

CALIFORNIA STILL LEADS

California still leads so far as can be determined by figures yet released by the census bureau. We have one and perhaps two counties which exceed all others of the United States in value of crops. As may be recalled, in our issue of April 2 preliminary figures were given showing a crop production in Los Angeles County of a value of $62,212,843. Corrected figures given below, received within the last few days, indicate very slight reduction. At that time Aroostook County, Maine, was given second place with $52,541,205. Corrected figures are not received, but since that time Fresno's figures, which are the final and correct ones, are at hand and show that county to have a production of crops aggregated in value $51,861,252.

The value of all crops produced in the various counties of California during the year 1919 is given by the following compiled from the most recent bulletin issued by the department of commerce in its fourteenth census of the U. S.. These are final and corrected figures. They do not include any returns from sale of livestock or livestock products:

Total for state....	$587,600,591
Alameda	8,632,929
Alpine	83,742
Amador	682,186
Butte	11,582,730
Calaveras	593,610
Colusa	13,240,785
Contra Costa	10,044,871
Del Norte	358,355
El Dorado	867,083
Fresno	51,861,252
Glenn	11,571,013
Humboldt	4,082,555
Imperial	17,200,734
Inyo	1,503,195
Kern	6,085,421
Kings	11,940,369
Lake	1,619,428
Lassen	2,104,934
Los Angeles	61,366,608
Madera	4,697,938
Marin	1,452,334
Mariposa	260,064
Mendocino	4,124,824
Merced	13,288,914
Modoc	2,564,901
Mono	219,686
Monterey	9,593,270
Napa	4,722,663
Nevada	399,461
Orange	24,465,231
Placer	5,080,793
Plumas	562,728
Riverside	18,932,449
Sacramento	19,845,858
San Benito	4,115,671
San Bernardino	26,517,455
San Diego	7,829,041
San Francisco	150,684
San Joaquin	37,956,866
San Luis Obispo	8,071,813
San Mateo	2,445,026
Santa Barbara	11,266,645
Santa Clara	23,792,684
Santa Cruz	6,706,924
Shasta	1,928,099
Sierra	314,656
Siskiyou	3,136,775
Solano	11,246,439
Sonoma	17,477,370
Stanislaus	17,140,414
Sutter	11,640,133
Tehama	3,579,305
Trinity	355,558
Tulare	30,547,341
Tuolumne	429,121
Ventura	18,320,324
Yolo	14,927,215
Yuba	2,072,118

STATE CONTROL, DEVELOPMENT AND DISTRIBUTION OF HYDRO-ELECTRIC ENERGY AND WATER

As we noted last week, announcement is made as to an initiative campaign to place on the ballot a constitutional amendment providing for state control, development and distribution of hydro-electric energy and water.

The measure is known as the California water and power act. Among those who have participated in drafting it are: Rudolph Spreckels, San Francisco financier; S. C. Graham, Los Angeles; William Kent, former congressman; W. B. Matthews, attorney for the Los Angeles board of public works; L. L. Dennett, counsel for the San Joaquin Valley irrigation districts and representing San Joaquin counties in the state senate; Clyde Seavy, city manager of Sacramento and former chairman of the state board of control; Dr. John R. Haynes of Los Angeles; Dr. Horace Porter, mayor of Riverside; William J. Locke, executive secretary of the League of California Municipalities and city attorney of Alameda; E. G. Scattergood, engineer of the Los Angelees power bureau; Louis Bartlett, mayor of Berkeley; William Kehoe, former state senator; Esto Broughton, assemblywoman of Modesto; Franklin Hichborn, Santa Clara; Francis J. Heney, Los Angeles; Charles W. Cleary, assemblyman from Tulare County; Albert Braunschweiger, member of the Riverside board of public works; Senator William J. Carr, Pasadena; J. L. Matthews, Covina, member of the state water commission; J. P. Mallon of Colusa and Oakland; Judge D. J. Hall, city attorney of Richmond and chairman of the legislative committee of the League of California Municipalities.

The committee took advantage of the provision of the law which assigns the state legislative counsel bureau to the work of drafting legislation, and this bureau gave material assistance in preparing the amendment.

The measure, as it stands, is the result of combined efforts on the part of agricultural interests and the municipalities to unite all the elements of the state that are concerned in the development of cheap hydro-electric power and the distribution of water for irrigation and domestic purposes.

The foundation of the amendment is a provision placing the credit of the state behind community development and enabling municipalities and water districts to pay for the construction by returns from water and power developed, without additional taxation, or bonded indebtedness on land, and with the lowest possible rates to users.

The statement follows:

"The California Water and Power Act will enable the people of California to develop and use their own water and power. The necessity of state action has been indicated by public bodies which have investigated and reported upon the underlying problem of water and power shortage. The state railroad commission, in a special report to the governor, in which it summarized the findings of the water emergency conference, estimated that $1,500,000,000 must be spent in California on hydro-electric and irrigation development in the next ten years. Estimates by representatives of the power companies, as to expenditures necessary for the ten year period, vary from $1,000,000,000 to $2,000,000,000. Private companies are endeavoring to finance this work on the basis of interest rates from two to three per cent higher than rates which the public would have to pay under this amendment. In its report to the governor the railroad commission said:

" 'We believe that the time is past when the state as a whole can afford to sit by and wait for the spasmodic development of its resources by individuals. The problem, as a whole must be solved by the state as such, and it is our thought that now is the time for a comprehensive program to be outlined. This the state can do through its power in the enactment of laws and its ability to aid in financing.'

"The men who have associated themselves together in this undertaking believe that this statement of the railroad commission was warranted. They believe that the measure now offered answers the need suggested by the foregoing, inasmuch as it provides a comprehensive program, the enactment of a law and a provision for state aid in financing.

"In preparing the proposed amendment, the committee procured the services of attorneys, financiers, legislators, economists, public officials, engineers and publicists in all parts of California. It enlisted the cooperation of men who are representative of a wide diversity of public opinion and economic interest, so that the final draft would be genuinely responsive to public needs.

"The ends sought by this measure are:

"To place the credit of the state behind public development and use of hydro-electric energy and water, at rates which will attract population and industry to California and supply consumers at the lowest possible cost.

"A system by which development will keep pace with demand and by which construction will be paid for out of water and power earnings, without additional taxation.

"Immediate and permanent relief from water and power shortage, stagnation, waste, and high rates now paid by householders, farmers and manufacturers.

"An aggressive campaign to procure the necessary signatures on the initiative petitions and to place the measure on the ballot in November, 1922, has already begun. The campaign will be directed by a committee which will, to the greatest possible degree, be representative of all groups, sections and interests. This is not an urban or rural or northern or southern movement. It is a California campaign, in which all the people of California are urged to join. Campaign headquarters are being opened in San Francisco, Sacramento and Los Angeles, and the petitions will be immediately circulated. (Signed) William Kent, William Kehoe, Horace Porter, John R. Haynes, Rudolph Spreckels, L. L. Dennett, William J. Locke."

California Cultivator

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Let's Pull Together

By A. Layman

CALIFORNIANS are proud of their highways. We believe they take greater pride in them—and we are sure they take greater comfort—as they spin along pointing out the wonderful beauties with which the state has been endowed, than in any other improvement or public effort which the people have made. It is a common boast: "Come to California and we will take you for a spin every day for 30 days and each day over a new route of perfectly smooth highways of easy grade."

The state began this building a little less than a dozen years ago, and there have been built about 3,250 miles of graded and paved highways. California pioneered in this work and, the experience of others not being available, our own experience school had to be established. That school has shown that the work of the first few years resulted in many mistakes. The commissioners in charge of the work took advantage of the lessons of those mistakes and changed many specifications as to thickness, breadth, reenforcing and other methods of construction.

Many of the sections were built with the knowledge that construction was purely temporary and to meet immediate transportation needs. It has been asserted that the saving to the producers of the state has been greater during every one of the past few years than the entire cost of the highway system, that is, had the greater costs and the destruction to perishable fruits continued as under the old system of roads. The demand was insistent from every section: "We must have roads to get our products to market." State and county officials vied with each other in this building campaign and roads were extended as rapidly as possible. This work was so successful that it was a common remark of the autoist: "There is no danger of exceeding the speed limit in our cities; we can always tell when we pass municipal and county boundaries for we run onto bad roads." The cities have been grievously slow in the good roads building campaign.

Definite figures as to use of the highways by autos and heavily loaded trucks, made some years ago and recently, prove conclusively that the increase in wear on the roads has been beyond the imagination. It is sometimes asserted to have been thousands of per cent, and the best judgment of the best engineers under those circumstances has naturally proved at fault. But the first to see the errors of the lighter and more extended construction were the very engineers who planned it. This increase in use of the roads, especially by trucks loaded, including truck weight, to 12 or 15 and sometimes 20 tons, maintaining speed of 20 or more miles per hour, has pounded the roads so terrifically that some of them have gone to pieces, and this regardless of whether state, county or municipality had charge of the construction. On this point we will quote from "Have a Thought for the Road," an appeal made by M. L. Pulcher, vice-president and general manager Federal Motor Truck Company. This address had nothing to do with California roads; it was purely the talk of a truck builder with other truck builders:

"One of the largest office buildings in the world was recently erected in Detroit. An immense amount of yardage of earth had to be removed quickly. Result, contractors insisted on every truck hauling an overload. Three and one-half ton trucks carried five or six tons; five and six ton trucks were forced to load to eight and ten tons. Result, the absolute destruction of about 20 blocks of heretofore adequate pavement on one street. No truck on this job was sufficiently tired for the loads it carried. So the pavement was pounded into debris in a few weeks. Result, a more drastic ordinance, but surprisingly fair in view of the destruction caused by the penurious contractors who were willing to spend the public's money for new roads and the truck owner's money for repairs to put a few dollars in their own pockets.

"This story has been duplicated many, many times all over the country. The truck owner is not always wholly to blame although he is in the end responsible."

The school of experience has proved valuable to the engineers and to the whole state. The commission has changed its methods to meet conditions which did not exist a half dozen years ago. So far as possible repair of any defective section has been made. More funds were needed for that work.

One step was to present to the last legislature draft of a bill providing funds for highway upkeep. A strong fight was put up against this measure by both of the big auto clubs of the state, and it was defeated. The auto clubs say that in defeating it they have saved to the auto drivers of the state millions of dollars. This is doubtless true, but auto drivers who take satisfaction in this information should also bear in mind that the saving of this money has been at the expense of efficiency. If this loss to the fund is offset it must be through direct taxes or issuance of bonds, or else we must be content with holes in the road.

The board of directors of the Auto Club of Southern California, the board consisting of Fred L. Baker, W. L. Valentine, Horace G. Miller, A. V. Balch, H. W. Keller, Frank P. Flint, Edward T. Off, Harry Chandler and Edward D. Lyman, passed a series of resolutions from which we quote:

"Whereas, many complaints concerning the condition of the state highways were received at the office of the club, the board of directors caused to be prepared an engineering investigation and report on the highways of California with a view to ascertaining their true condition and of assisting in the preservation and further building thereof, which report was published and transmitted on March 17, 1921, to His Excellency, the governor of this state, to the state highway commission, to the members of the legislature and to the boards of supervisors of the counties of Southern California, and

"Whereas, this report has been amply corroborated by the recent report of the federal bureau of public roads, and

"Whereas, the report prepared by the engineers of this club, assisted by the county highway engineers of most of the Southern California counties, shows that our state highways are inadequate to meet the needs of the traffic over them, because built upon insufficient foundations, without proper preparation of sub-grade or study of sub-soil and drainage conditions; because too narrow, too thin and made of too poor a mixture of concrete—being narrower, thinner and poorer in quality than similar highways now being built by other states, 30 per cent of said highways being already in need of reconstruction, and the average life of said highways being but 15 years, while the final maturities of the three state highway bond issues are 1961, 1962 and 1965, respectively.

"Now, therefore, be it resolved, that the Automobile Club of Southern California hereby declares it to be the policy of the club to insist upon the completion at as early a date as possible of all the highways promised by the state of California; the building of such highways of material, foundation, quality, width and surface as will provide the people of California with highways that will be superior to, or at least the equal of, those constructed by any other state in the Union, such highways being essential to our traffic development, which will undoubtedly keep pace with the inevitable development of California; the preservation of such highways and bridges by the adequate regulation of traffic thereover, including the limitation of loads, and the careful, tireless and efficient maintenance of all highways heretofore or hereafter constructed."

As to the second of the paragraphs quoted we give the following from the report of the bureau of public roads of the U. S. department of agriculture. In its study of the California highway system the bureau made 7,500 photographs, "638 cores were drilled in the pavement at intervals on 800 miles of the highway between Red Bluff and San Diego. Soil mixture and sub-grade conditions were studied; state wide traffic census was taken at 103 substations; intensive special studies were made." The whole makes a printed report of some 500 pages, from which we take:

"The work of the state highway commission and of the highway engineer shows a continuous and intelligent devotion to public duty. Their construction operations have been widely extended under greatly varying conditions. A high degree of standardization was doubtless necessary and is evident. The failure (12.5 per cent) of D, E and F pavements are not extensive and some were unavoidable on large scale work. * * * The operations have produced large mileage of very serviceable roads and from an economic standpoint are conspicuously successful and of continuing benefit to the state. * * * The financial administration has been scrupulously honest and careful, and the administrative and engineering costs have not been excessive, nor have final costs much exceeded the engineer's estimates. There should be no hesitation in going forward with confidence."

Regarding 30 per cent of reconstruction necessary Chas. A. Whitmore answers:

"Whatever reconstruction is now necessary, except over adverse subgrade, has been occasioned by unprecedented increase in automobile traffic, and by gross overloading of trucks, and not by any essential fault in the structure of the pavement to meet traffic needs for which it was designed.

"When the construction of the state system commenced, the registration of motor vehicles was about 35,000, with trucks a negligible quantity. The increase of traffic was gradual for several years, but the war brought phenomenal development of truck use, there being now as many trucks registered in the state as there were automobiles and trucks combined in 1910. The total registration of motor vehicles of all kinds this year approaches 600,000 as against 35,000 ten years ago. It is manifestly unfair to criticize the construction of yesterday in the light of today's traffic. Furthermore the California highway commission was obliged by the highway needs of the state to provide an adequate mileage of serviceable highways. The people were led to expect and demand this mileage by the character of the system nominated in the original and succeeding highway acts. To have placed another interpretation upon the mandate of the people and to have constructed a comparatively small mileage of thick, wide concrete highways between population centers would have been to jeopardize the completion of the system and would have retarded construction of county systems to connect with the state system. A large mileage of serviceable highways is the measure of highway accomplishment in California and is appreciated by the U. S. bureau of public roads, if not by the automobile clubs of the state. In submitting its report, Thomas H. McDonald, chief of the bureau of public roads, says, in part:

" 'Within the past five years an unprecedented demand has been made upon the highway administrator and highway engineer to produce a large mileage of economical and serviceable highways. The extent to which he has produced this combined result is the true standard of measurement of his achievement.

" 'Let the present traffic service rendered by the state highways of California, conservatively estimated, we believe, at 400,000,000 vehicle miles per year, be multiplied by any reasonable unit rate to indicate the present annual returns to the people on the total investment to date of about $42,000,000.'

"Correctly interpreting the needs of the state in mileage of paved roads, the California highway commission designed a concrete base of minimum width and thickness, capable of being widened and thickened as traffic needs developed. Through this policy the state for nine years has had the use of over twice the mileage of concrete road that it would otherwise have had. These roads reach every important center of population. They are earning, according to the federal bureau of economists, 50 per cent per year on our total highway investment, or $20,000,000 per year on an investment June 20, 1920, of $42,000,000. They may be widened and thickened without any appreciable loss of ultimate road service and at a total cost for original investment, maintenance and reconstruction but little in excess of the present day cost of the construction of a wider, thicker highway.

"The commission's plans for bringing the trunk lines of the state abreast of the traffic needs of today include the construction of concrete shoulders 2½ feet wide and six to eight inches thick with the center section over the old concrete base covered with two inches of Topeka or four inches of reenforced concrete wearing surface. If the demand for this treatment is in advance of the ability of the California highway commission to meet it, the fault lies solely with the two automobile clubs of the state which maintained a lobby throughout the entire session of the late legislature opposing every effort of the California highway commission, through a gasoline tax and a moderate increase of motor vehicle license fees, principally on heavy duty trucks, to get the funds essential for this construction. This failure to increase motor license fees leaves California with a situation where a two ton White pneumatic tired truck pays the same license fee,

(Continued on Page 143.)

Agricultural News Notes of the Pacific Coast

Northern California

Alameda County farm bureau has membership of 611.

Placer County farmers are paying 35 cents an hour for unskilled labor.

Alameda County farm agent reports 20,000 fowls tested for egg laying capacity.

Nevada County voted on the formation of an irrigation district on August 4.

J. F. Campbell of Colusa has been appointed to the state reclamation board to succeed Frank Freeman of Willows.

Stockton has established a municipal camp at the old Gray Eagle mine in Placer County.

Because of loss of funds the Sonoma County farm bureau will lose the services of assistant farm adviser.

Machinery has been shipped for cooling and cold storage plant at the Durham land colony in Butte County.

The poultry department of the Alameda County farm bureau held picnic at Hayward Memorial Park, August 2.

Lower freight rates on canned goods and farm products are announced by the railroad, effective July 21 and August 22.

Sonoma County's appropriation for farm bureau work has been cut $2,500, making it necessary for one member of the staff to leave the work.

The Butte County supervisors have appropriated $2,000 for agricultural extension work, dispensing with the office of county agent's assistant.

Oroville's Orange and Olive Fair will be held in November. The chamber of commerce is urging exhibitors to be prepared with their best.

A new sawmill and box factory is being erected at Oroville by the Hutchinson Company. It will have daily cutting capacity of 400,000 board feet.

Colusa County fair at Arbuckle, September 29-October 1. Effort is to be made to have schools of the county close on September 30, which will be children's day at the fair.

George Stam of Kirksville, Colusa County, is shipping a barge load of barley, which will go direct by water from his ranch in Sutter Basin to Holland for malt manufacture.

Miss Lillian Clark, home demonstration agent of the university extension service, will visit Eldorado County, August 3 to 6, for the purpose of demonstrating home methods of fruit evaporation. She will visit Georgetown, Coloma, Camino, Eldorado, Rescue, Cool and Placerville.

The Humboldt County Cattlemen's Association has decided to purchase a number of pure bred bulls to head range herds in the county. Horned and polled Herefords and Durhams are the breeds selected. Stock purchased will be exhibited at the county fair at Ferndale in September.

The Garberville farm center of Humboldt County is outlining plans for the construction of a milk skimming station and is also signing up farmers to plant an acreage of blackberries sufficiently large to warrant the construction of a dehydrating plant to evaporate this product before it is placed on the market.

Central California

Turlock is now sending out more than 50 carloads of melons a day.

Madera County has added 8,356 acres to her vineyards during the past year.

Tentative dates for San Benito County farm bureau fair are September 22-24.

The second carload of figs sent from Dinuba to Chicago brought $1.58 per box.

A carload of Tokay grapes was shipped last week from West Colony near Manteca.

Sanger, Fresno County, irrigation district organization election will be held September 15.

The farm bureau hog auction at Turlock, July 19, brought top price of $11.25 per hundred.

Most of the farm centers of Stanislaus County have discontinued meetings until September.

The Carmel Pear Growers Association, Monterey County, has let contract for construction of a new warehouse.

The Hume cannery at Turlock is now running on peaches and will continue till the last of September. Fruit is of good size and quality.

Orange Cove house of the Grape Growers Association opened with a table grape pack last week, ten days or more ahead of the usual schedule.

In answer to question of the state railroad commission as to present status of Tulare Lake, County Supervisor May of Kings writes: "Plumb dry."

"Almost all farmers in Madera County have given their hearty cooperation in rodent control work in Madera," says Commissioner George Marchbank.

The U. S. bureau of markets is giving daily market reports to Turlock producers. Arrangements for this service were made by the local chamber of commerce.

D. H. Bitner, manager of hog auction sales of the farm bureau marketing association, is in Stanislaus County working with W. J. Norton in card indexing all hog raisers.

Farmers in the Riverside-Laton section of Fresno County are busy circulating petitions asking the board of supervisors to complete the Fowler-Hanford trunk line highway before any side lines are improved.

The Pratt-Low preserving plant at Modesto started on peaches July 19. Five hundred employees are busy handling the fruit. The Cooperative Cannery started on peaches on t same day. It has been running for several weeks on apricots.

Tester Wolf for the dairy department of the San Joaquin County farm bureau reports 486 cows tested during June, 57 making 40 pounds butterfat or better. A Holstein owned by Fottrell Bros. of Stockton held the record with production of 80.9 pounds fat.

About 100 dairymen from the district south of Bakersfield attended a meeting in the Panama school house to organize a dairy department with a cow testing association of the Kern County farm bureau. Owners of several hundred cows pledged membership.

Southern California

Imperial Valley is shipping out grapes, several carloads a day.

Placentia, Orange County, reports half the Valencia crop shipped.

The Oxnard sugar factory has opened for a run of 100 days or more.

The Beaumont Fruit Growers Association has sold 30 tons of cherries this year.

The Poultry Producers of Southern California is now receiving eggs from 650 shippers.

The Los Angeles County Poultry Club held a picnic at Manhattan Beach, July 28.

The sugar factory at Los Alamitos is busy slicing beets, employing 400 men in 12 hour shifts.

The hot weather of last week was not appreciated by the Lima beans say Camarillo growers.

The farm bureau egg laying contest opens at Pomona October 1. Cost of entry is $2 per bird, $24 per pen.

The supervisors of San Bernardino County have enacted measure to prevent sale of meat from tubercular cows.

A series of field meetings on the nematode is being held in Los Angeles County under auspices of the farm bureau.

The cannery of the California Growers Association at Santa Ana has started on the peach pack. Three hundred men, all whites, are employed.

Supervisors of San Bernardino, Riverside and Orange Counties are considering enactment of same requirements as to motor truck weights.

President Teague and Manager Thorpe of the California Walnut Growers have left for Washington to renew fight for four cent duty on foreign walnuts.

The Orange County farm labor association has employed a director to have charge of an office at Santa Ana. There will be no charge to laborers for placing them.

Los Angeles County farm bureau meetings were held at Downey and Glendora, August 1; Alhambra, 2; Zelzah, 3; Lankershim, 4; Whittier and San Fernando, 5.

New freight tariffs scheduled by the Santa Fe reduce the carload rate on fat sheep from Blythe and Ripley to Los Angeles from $102.50 to $81. On beef cattle the tariff is lowered from $136.70 to $113.

Another payment of a half cent a pound on last year's crop of Limas is to be made within a few days. This will make a total of five cents on recleaned basis. And there will be more to follow, Manager Churchill says.

An egg laying contest is to be inaugurated at Pomona, October 1. The poultry departments of Los Angeles, San Bernardino, Riverside and San Diego are cooperating with the Poultry Producers of Southern California in the contest.

Manager Powell and Assistant Manager Dezell of the California Fruit Growers Exchange are in Washington to appear before the ways and means committee to convince them of the reasonableness of California's demands for sufficient protection for lemons and citrus fruit products.

The Coast and General

Walnut growers of western Oregon expect a record crop.

Recent farm bureau picnic at Roseburg, Oregon, brought together 2,000 farmers.

Oregon loganberry growers say that prices offered by canners are less than cost of picking.

Wasco County, Oregon, grain farmers report 15 to 25 per cent of last year's crops still unsold.

The Australian government has levied a duty of one pence a pound on bananas imported from the Fiji Islands.

Stock judging by calf club members was the feature of the meeting of the Columbia County, Oregon, Jersey Cattle Club at Scappoose last week.

Spokane County beekeepers recently formed an organization to affiliate with the state association. The first regular meeting was held June 24 at Spokane.

The Pomological Committee of Australia held its annual conference recently at Melbourne. Vice-President Warren of the American Pomological Society was in attendance.

The London Times says: "It is officially estimated that within five years Victoria (Australia) alone will have 50,000 tons of tinned fruit for which she will require a market abroad."

Potato growers of Washington, Oregon, Idaho and western Montana are considering formation of a Northwest Potato Growers Association, and the holding of a fall show and conference, presumably at Spokane.

California has 1.1 per cent of all land in the state included in drainage districts; Indiana has 40.7; Ohio, 31.2; Washington, .2; Colorado, .3. Arizona, Nevada, New Mexico, Oklahoma and Oregon show no land in drainage districts.

At a recent meeting of the Oregon Cooperative Grain Growers Association, A. H. Lea, for several years secretary of the Oregon state fair, now general manager of the Western Wool Growers Warehouse Association, was elected general manager for the wheat growers. Headquarters will be at Portland.

Los Angeles and the board of public service commissioners of that city have filed an application with W. S. Norvell, state water commissioner of Arizona, for right to build a dam to store water on the Colorado River for power and irrigation purposes. This is said to be in accordance with general plans of the United States reclamation service.

Rains during the past few days have materially improved range conditions in some parts of Arizona. About one inch of rain fell at Tucson, nearly two inches at Nogales. Other points in the south part of the state where conditions were at their worst also report rainfall. Williams in the north part had a nice rain of more than an inch. If rains continue during the next few weeks, which will cover the usual rainy period, cattle losses will be stopped and range conditions will probably improve to an extent which will enable the cattle growers to carry over till fall.

Time Tables for Fruit and Vegetable Canning

By W. V. Cruess

DURING the rush of the canning season it is often troublesome and wasteful of time to have to read through several pages of printed matter to ascertain the proper length of time for the treatment and sterilization of home canned products. The writer has therefore thought it desirable to assemble in table form the most important data bearing upon the sterilization of vegetables and meats.

Precautions and Suggestions

Altitude: The tables are designed for altitudes from sea level to 1,000 feet altitude. For altitudes above 1,000 feet increase the time of sterilization at 212 degrees Fahrenheit ten per cent for each 500 feet increase in altitude. Example: If time of sterilization at sea level is 90 minutes, it would at 3,000 feet altitude be 40 per cent more than 90 minutes, or 90 plus (40%x90) equals 90 plus 36 equals 126 minutes. At 3,000 feet, 40 per cent more time is required because this altitude is 2,000 feet above the 1,000 foot level and 10 per cent is added for each 500 feet above the 1,000 foot level. Pressure sterilizers only should be used for high altitudes for vegetables and meats.

Size of Containers: The table is based upon the quart jar as the container. Smaller jars require slightly less time and larger jars slightly more. Gallon cans require the same time as quart jars; quart and smaller cans, about 10 per cent less time than quart jars.

How to Count Time of Sterilization: Do not count time of sterilization until the water reaches the boiling point, if a hot water sterilizer is used or until the desired pressure is reached in a pressure sterilizer. All other time is not counted. This point is of utmost importance.

Brines: Two kinds of brine are in common use, namely, plain brine and acidified brine. When the pressure cooker is to be employed the plain brine is recommended. Where the washboiler sterilizer is used, acidified brines are advised.

When using acidified brines 5 fluid ounces of lemon juice or strong white distilled vinegar and 2 level tablespoonfuls of salt are added to one gallon of water. Five fluid ounces is about 2/3 of an 8-ounce measuring cup. This brine is added to the jars when canning vegetables by the lemon juice method. Where other methods are used, omit the lemon juice or vinegar. A longer time of sterilization is needed when the vinegar or lemon juice is omitted.

Cooking Before Serving: All home canned vegetables and meats should be heated to boiling and boiled ten minutes after the jar is opened for use. This removes all danger of botulinus ("ptomaine") poisoning. Never serve salad from freshly opened home canned foods unless boiled after opening. Discard all home canned food of "off" odor.

Home Made Sterilizer: For sterilizing at 212 degrees Fahrenheit a sterilizer can be easily made by placing a frame made of several slats in the bottom of a washboiler. The jars are placed on this false bottom and water is added to half the height of the jars in the University method or to cover the jars in U. S. D. A. method. The cover is placed on the boiler and the water is heated to boiling. Count time of sterilization from the time the water boils.

Pressure Cooker: Use these if possible for vegetables and meats in preference to an open boiler and use 10 to 15 pounds pressure rather than lower pressures. Cans "behave" much better than jars in a pressure cooker. Breakage losses with glass in pressure cookers are excessive. Use glass jars in open cookers and tin in pressure sterilizers. It is usually necessary to permit the pressure of the retort to fall to 0 before release valve is opened if glass jars are used; or to release the pressure very slowly allowing at least 10 minutes for the pressure to fall to 0, in order to avoid excessive loss of brine or syrup from the jars. The release valve may be opened as soon as sterilization is complete if tin cans are used.

Can Sealers: The Burpee and other home can sealers are satisfactory and much superior to soldering outfits. Buy the small handpower reflanging type sealer adapted to No. 2 and No. 2½ cans. Buy Sanitary cans; that is, the open top commercial Sanitary cannery type of can which requires no solder. The cans may be used several seasons. This reduces first cost of cans.

Blanching (parboiling): Most vegetables require blanching in boiling water before canning. This process removes disagreeable flavors, causes the brine to be clearer, sets the green color of the vegetables and softens them so that more product may be placed in the jar. The table gives the time of blanching for each product.

Meats: Meat is more readily sterilized if it is not packed too tightly in the jars and if boiling hot brine or broth is added to fill the spaces. Some meats may be canned in acidified brines as directed for vegetables. All meats should be cooked after jar is opened and before tasting or serving. Broth is easily made by boiling some of the meat or bones in salted water. Corned beef should be canned in liquid containing pure gelatin.

TIME FOR STERILIZING VEGETABLES IN JARS (In Minutes)

	Parboiling or Blanching	One period lemon juice, 212 degrees F.	*One period 212 degrees F.	Water seal 214 degrees F.	Steam pressure 5-10 lbs.	Steam pressure 10-15 lbs.
String beans	5-10	90	120	90	60	40
Peas	5-10	90	180	120	60	40
Tomatoes (Peeling)	1½	....	60	30	20	15
Corn (Sweet), (before cutting)	5	120	180	120	20	60
Lima beans, gr.	5-10	120	180	120	60	40
Pumpkin-Squash	3	90	120	90	60	40
Peppers	5-10	60	120	90	60	40
Cabbage-Sprouts	5-10	90	120	90	60	40
Cauliflower	3	45	60	40	30	20
Carrots, Parsnips	5	60	90	80	60	40
Turnips	5	60	90	80	60	40
Beets (peeling)	10	60	90	80	60	40
Salsify	5	60	90	80	60	40
S. Potatoes	10	....	90	80	60	40
Greens	15	90	180	90	60	40
Asparagus	5	90	180	90	60	40
Artichokes	10	60	120	90	60	40

In the three day method sterilize one hour on each of the three successive days at 212 degrees Fahrenheit, counting time from the time the water reaches the boiling point.

*The one period is the least certain method and least to be recommended.

TIME FOR STERILIZING MEATS (In Minutes)

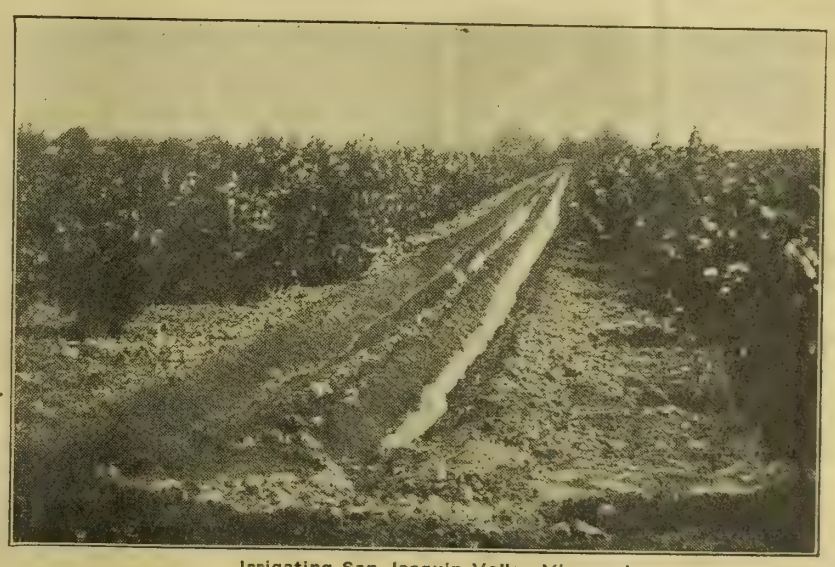
	Hot Water Sterilizer	Water Seal 214 deg. F.	Steam Pressure 5-10 lbs.	Steam Pressure 10-15 lbs.
Uncooked beef, pork, and mutton in broth	240	180	120	60
Game and poultry	240	180	120	60
Corn beef in water containing gelatin	180	180	120	60
Salmon and other large fish in dilute brine	240	180	120	60
Shellfish, such as clams, mussels, etc., in broth	240	180	120	60
Fried, stewed, baked, and other cooked meats in thin gravy or broth	180	180	120	60
Smoked meats, such as kippered fish, lightly smoked beef, etc.	180	180	120	60
Soups, concentrated (see Farmers' Bulletin No. 839 for preparation)	180	180	120	60

Making Quality Raisins

By Fred K. Howard

WHAT is necessary to make a quality raisin? This question is uppermost in the minds of all who are interested in the future welfare of the California raisin industry. Incidentally, this same question is on the minds of all who have given any thought to production, whether they are interested in the manufactures or in the products of the soil. The question is of prime importance because of the realization that future prosperity depends on whether or not consumers are offered a superior product. With raisins, as with other fruit foods, it matters little how attractive the package, how sanitary the packing houses, how large the advertising appropriation, if quality is not in the product itself continued successful marketing is impossible.

Everyone admits that quality is necessary, yet it is astonishing how many wish that the other fellow would produce the good fruit and in sufficient quantities to carry their own poorer grades—a selfish yet extremely human trait.



Irrigating San Joaquin Valley Vineyard

Water in sufficient quantities, applied when and where it is needed, and not after it is needed is of great importance.

There are two things which the raisin grower must consider when undertaking to produce the kind of fruit the consumer is most interested in, quality fruit. The first is that the grapes must be well grown; the second that the fruit must be well cured. We are going to touch on the vital points incident to the growing of the fruit in this issue of the Cultivator, leaving the other factor to be considered in a future issue.

The grapevine has certain functions to perform. The one we most frequently think of is the production of fruit, and very often we think of that function to the exclusion of its other duties. It is true that if a vine does not produce fruit it is worthless in

(Continued on Page 131.)

You Wouldn't Buy a Pony for Draft-Horse Work

IF you were buying horses for draft work, you would have no use for light-weight, under-sized teams. You would want strong and rugged horses, deep-chested, strong-limbed, with plenty of weight to throw into the collar and stay with the load. You would never buy ponies for draft-horse work.

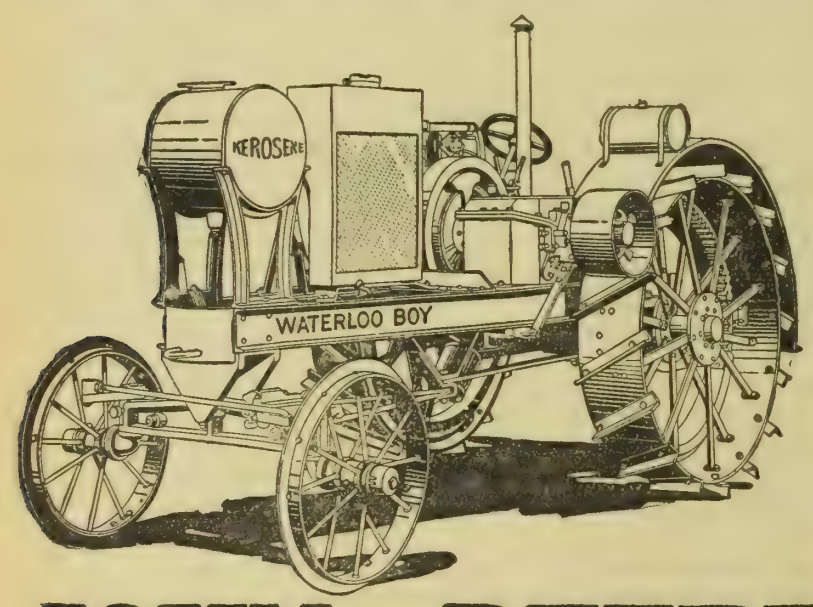
WATERLOO BOY KEROSENE TRACTOR

Remember that a tractor in its most important jobs has to do heavy-duty work continuously, often under difficult conditions. In plowing, in disking, at any drawbar job, the footing is uncertain, the going rough. But the load is always there, testing the tractor's stability every second. It is a load that a light-weight, low-powered outfit often cannot stand up under. It is a load that takes rugged construction and plenty of "brute power."

Use the same good judgment in buying your tractor that you did in buying your horses—get a Waterloo Boy. It has the power, the rugged construction, and the stamina to handle the load, day after day, week after week, year after year.

Inspect the Waterloo Boy at your John Deere dealer's. Have him demonstrate it for you on your own farm. Drive it yourself. It will do your work as you want it done.

A post card will bring you our big free booklet fully illustrating and describing the Waterloo Boy. Write to John Deere, Moline, Ill., and ask for booklet T 9 6.



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All of the recommended varieties budded on hardy Mexican Seedlings.

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ADDRESS

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Box A San Dimas, California

Founded in 1889 by R. M. Teague

First Avocado Field Day

By Ernest Braunton

SO many seedling avocado trees abound in California dooryards and so many poor varieties need budding or grafting to better ones that the California Avocado Association decided to hold a field meet to demonstrate the best methods of top-working. This picnic and field meet was held Saturday, July 30, beginning with a basket lunch and program at the Puente Valley Walnut Growers warehouse at Puente, said to be the largest in the world.

The forenoon was spent in friendly intercourse, just a "visitin' day." Everyone brought his lunch and free coffee and avocado ice cream were served at noon. Frank M. Colville, president of the Puente chamber of commerce and editor of the Puente Valley Journal, was master of ceremonies and delivered the address of welcome. He said the walnut packing-house in which we were gathered is the largest in the world, "having a daily capacity of a million pounds of nuts, and I am glad to see so many here today." This sally of wit evoked so much applause that he announced there were about 900 persons present, but a close count by the writer caught but 720 of them. Perhaps the remainder of the "nuts" had fled.

Demonstrating Grafting of Avocado

Before the crowd arrived in the orchard. Platform and one of avocado trees arranged for grafting demonstration on E. G. Hart Ranch at North Whittier heights.

Dr. W. L. Hardin, president of the avocado association, responded to the welcome, enumerating the many activities of the Puente people to make the meeting a success and a pleasure, for which he extended the sincere thanks of the avocado association, also speaking on behalf of those present. He then introduced Roy V. Wilcox, president of the California Association of Nurserymen, who told of the mammoth flower, fruit and plant exhibition to be held at Exposition Park, Los Angeles, October 20-23. J. A. Packard of the Southern California Fair to be held at Riverside, October 11-16, also invited those present to visit the fair. At both events there will be an avocado display, and it is expected the avocado convention will merge with that of the nurserymen.

The visitors then motored to the avocado orchards of the Edwin G. Hart Company, between Puente and Whittier, where the topworking demonstrations were given. Before departure the writer counted 234 automobiles ranged about the Puente warehouse, a testimonial to the affluence of the avocado "fans."

At the orchard forum a platform had been erected about a large tree, high enough so all could see in detail the workings of the grafters. The top of the tree had been sawed off and all made ready for immediate demonstration, under the direction of T. U. Barbour of the Hart Company. Dr. W. R. Manning of Fillmore was the first speaker and workman and showed, with full explanations, every detail of the cleft grafting so successfully practiced by him in his home orchard. This is practically the same method used in all cleft grafting of deciduous trees. S. W. Funk of Covina then showed how he performed bark or side grafting, a method equally as successful as the cleft grafting and more in favor among avocado experts. Both speakers distributed prepared grafts to those below so that all could see how easily and simply the work could be performed.

This was doubtless the greatest "avocado day" the world has ever seen and will be made an annual event.

THE FARM BUREAU BLOC

NO movement of producers of the land has ever secured such impetus, or power to do things, as has the farm bureau. It has taken up methods of work found successful by existing cooperative organizations and applied them with telling force. The greatest of national movements put through by the farm bureau is that of grain marketing which it now appears will be a complete success.

Its power in a legislative way has also made itself felt and it is now in a position to accomplish still more for producing interests. From the Berkeley office of the state farm bureau federation we have the following statement as to its future influence along legislative lines:

"The farm bureau has created a national legislative situation which has been given the uncommon term or name of 'bloc'. The American Farm Bureau Federation, through its Washington office, has, in cooperation with numerous agricultural units, developed a comprehensive agricultural legislation program in congress.

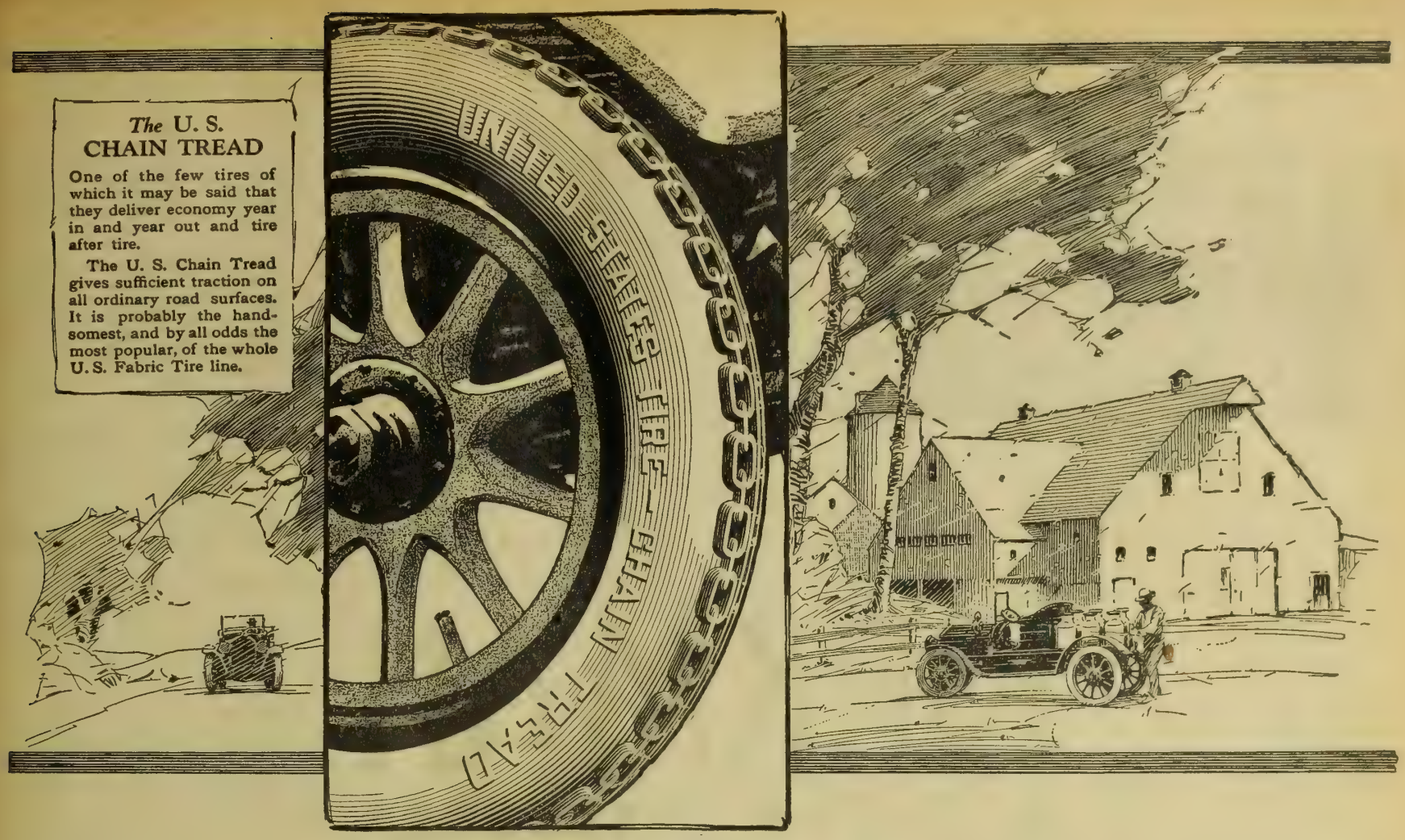
"In the senate there has been grouped an organized number of senators coming from agricultural states, with the purpose of building and controlling legislation affecting farmers. This group, or bloc, is not Republican nor Democratic in complexion and does not perform on party lines. It does not obey the caucuses of the two big parties when the issues are not in agreement with the bloc. The bloc in the senate holds caucuses of its own It controls a large influence and has the support of certain senators upon occasion who are not members of the bloc. This group represents the first great organized movement in congress for putting through definite legislation. Senator Kenyon of Iowa is chairman of the bloc in the senate.

"The house maintains a similar bloc with a membership of over 100 representatives. In both houses the bloc controls many more votes than the membership indicates.

"The bloc is alive and speaks plainly. It exists to get for the farmer such national help as he needs. Southern and western agricultural areas are mostly in the bloc. This group is working for a farm credit system, agricultural cooperative marketing statutes, a satisfactory agricultural tariff, packer control, truth in wool fabrics, agricultural roads, against grain gambling, and in fact the entire agricultural program of the farm bureau.

"Mr. Gilbert, of the Philadelphia Evening Public Ledger, says: 'These plans are ambitious. They rest on the farm bureau movement, which, with the federal and state aid at one end, have gathered the farmers into the most powerful and effective industrial organization ever brought together. The agrarian bloc in congress will become, if it is not already, the political representative of the farm bureau.

" 'The senate organization of agrarians is of profound significance. It cuts across party lines. Here is the biggest and most powerful group represented in congress by men owing in certain respects an allegiance to it admittedly superior to their allegiance to their party.' "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The August Vegetable Garden in Southern Arizona

By M. E. Bemis

BEANS of several varieties may be planted in August. Probably there is no variety that does so well in Arizona as the Pink, or Mexican frijole. This variety for the main crop should be planted early in the month. A sandy loam is best and if there is more sand than loam so much the more desirable, in other words, a soil that will not bake and form clods is preferable.

The land should be well prepared and the rows 20 to 24 inches apart. The ground should be well saturated with water before planting. Many bean growers prefer to plant level. With a well saturated soil the seed should germinate without further irrigation. As soon as the plants show, furrows should be run between the rows and water run in the furrows. If the seed does not germinate the furrow should be run anyway and the land irrigated, taking care not to flood. Beans require considerable water.

Pink beans will mature in about 90 days from planting, and as frosts may be expected about November 10 to 15 in the Salt River Valley, a little earlier in the vicinity of Tucson, and a little later in the Yuma Valley, it is obvious that the planting should be not later than the 10th of August. Pink beans are also used quite extensively for green or string beans and are very satisfactory for this purpose.

Other varieties of beans may be planted in August, and as some of these mature more quickly these early varieties may be planted later. Usually beans will not set well in hot weather, so it is advisable to plant as late as possible and have time to mature a crop.

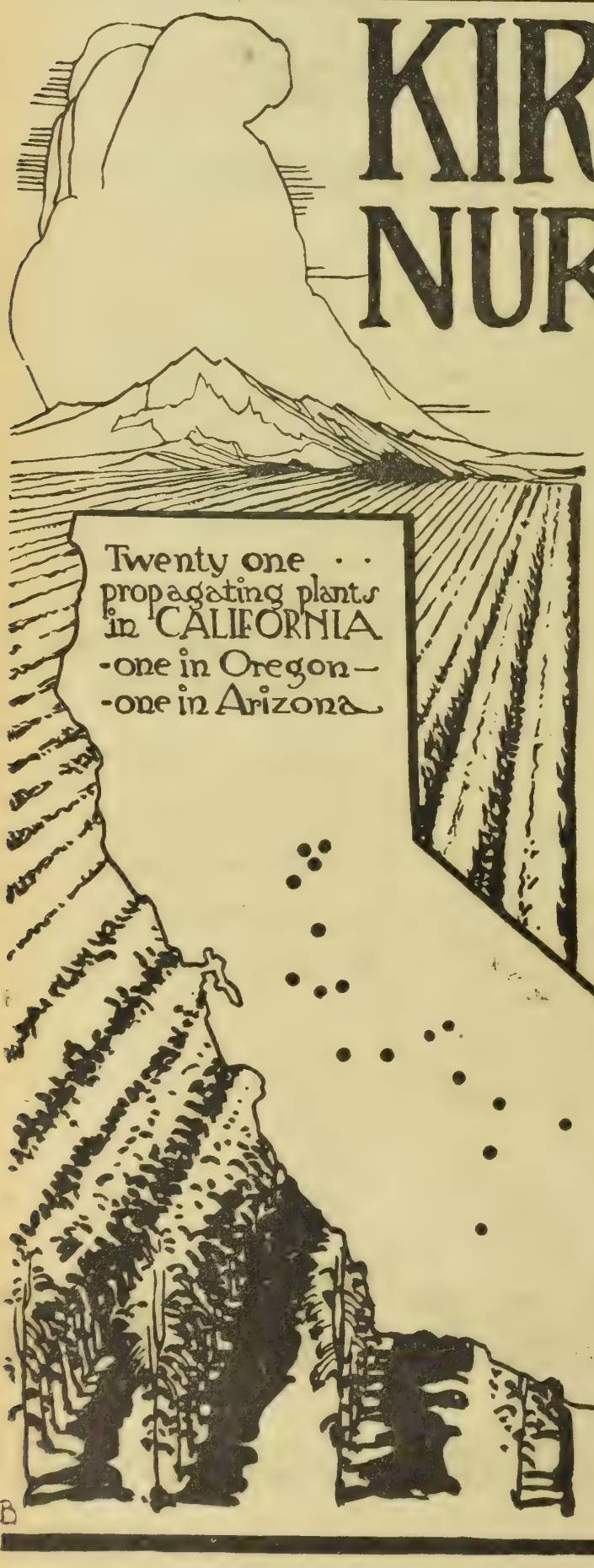
Usually it is not advisable to plant lettuce as early as the latter part of August; commercial plantings are usually made the latter part of September or early October. There is an advantage in planting early as the earlier planted the earlier will it mature, but usually it is too warm to permit of germination. Occasionally there are a few days and particularly cool nights the latter part of August when seeds of lettuce, beets, spinach and seeds of that kind may be planted with a very fair chance of germination. The gardener that has his ground ready to take advantage of these cool periods is able to mature his plants much ahead of the general crop. Sometimes germination is encouraged by mulching with well rotted manure, sometimes by shading. A little pains and planning enables one to beat his neighbors in early fall garden stuff or if he is selling for the market to get in on the early market when prices are top notch.

Early August is still time for planting Mexican June corn for roasting ears. The Indian sweet corn sometimes called "Papago" is coming more and more into well deserved favor. As this makes roasting ears in about ten weeks from planting there is time all through the month to plant a succession. The ears of this corn are small but as the cob is also small there is really much more grain than seems from a casual glance at the ear, and the small plant, prolificacy and, last and best of all, the quality makes this especially desirable for the home gardener.

Early peas may be planted the latter part of the month. These should mature before extreme cold weather. The late maturing varieties are best planted later in the season for maturing in early spring.

Cabbage seed may be started in shaded beds for plants to be set out later. Cabbage is grown commercially by some of the Japanese and Chinese gardeners, and no doubt could be grown for shipping were it not for the excessive transportation costs. Cauliflower also should be planted this month for early plants for later transplanting.

September begins a month of more activity for the fall garden, and to that end August is a month of preparation, manuring if it has not already been done and plowing to make ready for heavier planting when cooler days make germination less of a gamble.



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Deliveries made direct from nearest propagating plant. To serve the orchard and vineyard planters of California to the fullest satisfaction and efficiency is our aim. We are gratified to have entrusted to us the future of small orchards as well as the large projects. One acre of Kirkman Trees will draw to us greater future plantings. One California orchard has taken two hundred and fifty thousand of our trees. Another four hundred thousand trees. Another six hundred thousand trees and vines together. They have reservations with us for their next season's plantings. The Ex-Governor of Coahuila, Mexico, named his immense project "El Fresno" in honor of our deliveries of nursery stock. We plan to serve every customer so satisfactorily that his future profits will be assured. Correspondence solicited.

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STIMULATE CALIFORNIA POTATO INDUSTRY

W. V. Shear, potato inspector of the California department of agriculture, in summing up the present outlook for California potatoes, says: "After standardizing and grading the next big problem confronting the potato growers of California is that of the adaptation of selected potato varieties. Local conditions vary so greatly with reference to both soil and climate even within short distances and a variety adapted for one locality is quite often not the best for use in another district near by. Also, in a given section a change of variety is often advisable for different seasons of the year. It is therefore necessary in order that growers should get the best possible results that they understand the adaptation of different varieties for certain climatic conditions.

"Two examples may be mentioned of varieties that have different characteristics which make them adapted for certain purposes. The White Rose has been found to be well adapted for the production of early potatoes over a large section of the state, but this is especially true for the warmer portions. This variety does well in warm weather and where a minimum amount of moisture is available. They have a tendency to set but few potatoes to the individual plant, but these few usually become of marketable size and therefore nearly always produce a fair yield if certified seed is used.

"The British Queen, on the other hand, has not been found to be adapted to very warm climates, but delights in cool weather, sets a large number of potatoes, and the plant requires a productive soil with plenty of water in order to produce marketable tubers.

"Many other varieties might be mentioned which differ with reference to adaptability to climate and soil, as well as cultural and irrigation requirements. Added to this complexity of the situation is the fact that a given variety of potatoes is often sold under several different names, some dealers selling them under one name and other dealers under other names. This causes great confusion and loss to our potato growers. The whole question of potato varieties needs a more thorough study than has yet been given it, and some legislation which will prevent deception in renaming potato varieties should be enacted. Our potato varieties need a fuller classification and should be sold under uniform names throughout the country. The writer is at present growing a collection of a great many varieties and strains for the study of the peculiarities of each in the hope that in California we may be able to group the varieties being used and in some measure at least save duplication of names for a single variety."

August in the Ornamental Garden in Southern California

By Ernest Braunton

DAHLIAS are now regarded as proper prey for a two season crop of flowers and the autumn crop is usually better than the earlier one. If the plants bloomed in spring the tops may now be cut down to the ground or to within six inches as you choose, and new tops made which will give a splendid crop of flowers in late October or November. But they must not be neglected. Water and fertilizer must be given in good supply and clean cultivation practiced.

An examination of Iris germanica beds will disclose rhizomes too thick for good flower crops and some on top of the soil. While this appears to be a natural disposition it does not produce the best results. Now is a good time to divide and plant them beneath the soil. In the heaviest soil this may be an inch or two and in light sandy loam three or four inches. Iris are so easily grown and such a superb range of good varieties may be obtained very cheaply that no garden should be confined to the very common whites and purples. California specialists catalog named varieties by the hundred.

Watsonia bulbs may be divided and replanted during August and September, with good results. Last year bulbs planted in the spring brought small spikes of poor flowers or none, though all bulbs were of good size and quality.

It is still early to plant other bulbs except freesias and August plantings will bring early flowers. Too many garden owners regard this as a season of rest, go away for a vacation and leave the plants to care for themselves. We have no "interregnum" in California; Queen Flora reigns continuously and all should meet their August responsibilities by keeping the garden in proper state. It is doubtful if neglect during any other month will so quickly produce a shabby garden, for weather is warm, soil is warm and dry and plant needs, in moisture at least, are great.

Chrysanthemums must be closely watched and kept well watered at all times and until color shows in the buds should be fed once each week with liquid or commercial fertilizers. At this late date do not use raw bone meal, no matter how finely ground. As plant food it will not be available in time to aid the coming flower crop, though acidulated bone flour will. The hardy perennials common to gardens of all countries should be sown this month and will bring blossoms next summer. You may also sow seeds of cineraria (for shaded flower beds), calendula, Canterbury bell, cosmos, dimorphotheca (South African orange daisy), lobelia, pansy, pink, primrose, petunia and verbena. Also all Australian and South African tree and shrub seeds and those native to California. Plants to set out now are: carnation, daisy, phlox, petunia, and violet.

One may gauge the constant need of soil moisture by the distress quickly shown by lawns even slightly neglected during the month of August.

Annual Report

The 20th annual report of the bureau of agriculture of the government of the Philippine Islands for the fiscal year ending December, 1920, is a graphic presentation of the agricultural wealth of those islands. A general statement of agricultural conditions at the beginning of the report notes that: "It is gratifying to state that never before in the history of Philippine agriculture has there been greater prosperity among the farmers, nor has there been a year in which greater progress has been made in agriculture, than that of the year 1920. The increase in area planted to crops, the corresponding increase in yield, and the stupendous increase in value received, make a new record in advancement for this important industry. There are many causes leading up to this remarkable development. The food campaign which has been carried on for some time is an important factor. This has been aided by the rice and corn fund, which has stimulated increased production of these important cereals. The introduction of modern tractors and gang plows has become quite general in the sugar producing provinces and will no doubt be extended to the rice fields more generally just as soon as irrigation projects are completed, thus making their use practicable. Seed selection has been another important factor in increasing yields. The upgrading of livestock by the importation of pure bred sires has had a share in improving conditions. The establishment and remarkable growth of rural credit among the small farmers has taught many of them the much needed habit of saving a part of their scanty funds and has furnished financial aid to many members who could not have obtained it otherwise. The establishment of poultry-swine stations, provincial and municipal nurseries, the increasing of the bureau's field force of farm advisers and agricultural inspectors, has brought a better knowledge of farming to those most interested. There have been no serious invasions of locusts, due to the activities of the work of the plant pests control division, which has likewise organized a plant quarantine service to prevent the introduction of plant pests through importation."

We note in the frontispiece a group of the staff composing the bureau of agriculture and in this photograph is the assistant director of agriculture, Silverio Apostol, who, many Californians will recall, visited this state a few years ago. When Mr. Apostol was in this country he was gathering information as to rice production and the use of power machinery and American made implements in rice production.

TWO QUEENS IN HIVE

The Agricultural Gazette of the Canadian ministry of agriculture says a government expert reports on two queen bees to a hive: "As it would be of great utility to find an efficacious method for preventing swarming without too much work, the author tried to solve the problem by keeping two queens in each hive for 11 months of the year. He found that this is a practical method and will try it again in 1919.

"Two young queens, separated by a double partition of wire gauze, were wintered in a hive in a cellar from 1917 to 1918. When the dandelion flowered the bees and queen from one side of the gauze were removed to another hive; in this way swarming was avoided and the two queens gave a uniform and increasing production of young bees, thanks to which two strong hives were obtained in time for the flowering of the clover. The number of bees was much greater than the number which began the season with one queen. These bees yielded 480 pounds of honey.

"In order to avoid swarming when the clover flowers, and to obtain two queens again in each hive (all the following operations were carried out in several colonies), the author removed the old queen from the brood chamber when the clover flowered and eight days later destroyed all the royal cells save two, one on each side of the metal gauze. A special porch fixed in front of the hive separated the entrances to each half by eight inches. This was done to avoid the possibility that the queens leaving their cells might meet on returning from their nuptial flight. These hives did not swarm."

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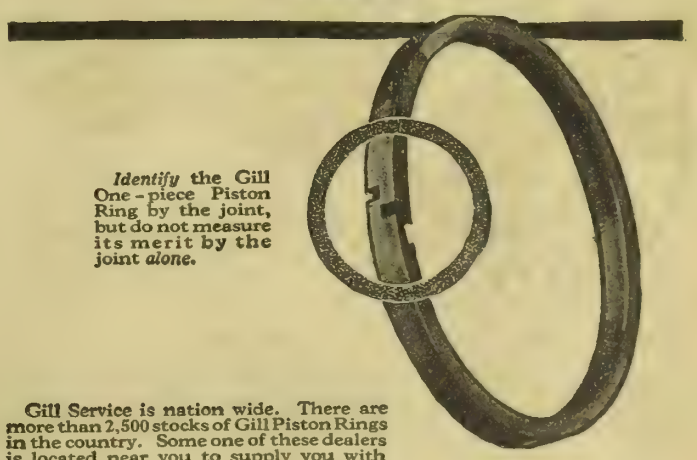

Identify the Gill One-piece Piston Ring by the joint, but do not measure its merit by the joint *alone*.

Gill Service is nation wide. There are more than 2,500 stocks of Gill Piston Rings in the country. Some one of these dealers is located near you to supply you with whatever size you may want and the number you want *when* you want them. If your garage or repairman or accessory dealer doesn't happen to carry Gill One-piece Piston Rings tell him to get them from his jobber or from the nearest of our 39 Branch Offices.

Owners Who Spray Have Orchards That Pay

There's no doubt about it—now. Citricola and black scale in Southern California can be overcome—and red spiders routed—with Balfour, Guthrie & Company's patented formulas for spraying. Your trees—like those our experts sprayed on 20,000 acres in Tulare County—can produce fancy packs and bigger profits.

It is not too late to succeed with this year's crop. But you must start spraying **now.** You don't have to experiment. You can take advantage of the field tests that already have proved the superior merits of

B. T. S.	15 lbs.	Per	B. T. S.	10 to 12 lbs.
TRIUMPH	1½ to 2½ gals.	200 gal.	TRIUMPH	1 gal.
GLUE	1 lb.	Tank	GLUE	1 lb.
(for citricola and black scale)			(for red spiders)	

(patented formulas)

Scale infested trees. as you know, set much less fruit. By spraying NOW with our tested materials, you save your foliage and fruit from the honeydew and that black, sooty fungus later.

Write or call at our headquarters in the H. W. Hellman Building, Los Angeles. Frank B. Herbert, assistant entomologist and his aides will examine your grove free of charge. They will tell you the right spray to use and how to use it. To get best results, spray today.

A new bulletin on citrus spraying by our expert entomologist, Paul R. Jones, is yours for the asking.

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On service stations and garages everywhere you will see the Red Crown sign.

It will pay you to look for it before you fill because Red Crown Gasoline is the gasoline of quality with a continuous chain of boiling points, giving ready starting, rapid acceleration and maximum power.

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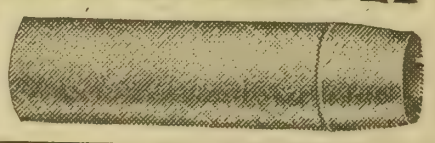

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Fire Damage in Reserve

To prevent spread of weeds I burned along my ditch line. A sudden wind caused the fire to escape into brush on the national forest reserve; I called the fire warden to assist in controlling it. Has the warden authority to assess fines to pay the expense of the fire fighters?—Subscriber, Valley Center.

Heavy penalties are provided for fires willfully or negligently caused in reserves, but if the fire was caused or escaped accidentally or unavoidably then the recovery shall be only for the actual damage sustained and the detriment to the land. The person causing any fire in violation of the act is liable for the full amount of the expense incurred in fighting the fire. The fire warden, of course, has no power to assess any penalty or award imprisonment as punishment for the misdemeanor which was committed in setting the fire without written permission. He would undoubtedly be vested with the right to compromise the civil liability, consisting of the damage caused to the forest reserve, whatever it might be, and the expense incurred in fighting the fire. It will undoubtedly be seen that under the provisions of the act his request for payment for the actual expenses of the fire fighters was exceedingly reasonable. The act as to its civil liabilities in a case such as yours, where the expense of the fire was caused by a mere accident, proceeds upon the general rule of the law that where one of two parties is injured, the party who first set the cause of injury in motion must be the one to pay. If you had set the fire under the supervision of the fire warden in the first instance, it would have been his duty to provide against any contingency of sudden wind.

Giving Up Contract

I bought land on an installment contract. I now find that it is not the right kind of land and I wish to let it go. I am required to pay the taxes. In case I fail to pay the taxes or the next installment on the contract, can I be required to pay anything else than money which I have already paid in, which I understand is forfeited on the default? Can I sell the contract?—Subscriber, Tulare.

The vendor in such a contract usually, depending, of course, upon the terms of the contract, has three different forms of action upon a failure to pay. He can merely bring action to quiet title to the land; he can bring action to rescind the contract for the default; or, he can affirm the contract of sale and bring suit against the vendee for the full purchase price. In such last event he could attach the land named in the contract, sell it under any execution obtained in the case, and make further levy upon any additional property of the vendee. You can undoubtedly sell the contract, subject to the terms of the payment. In any sale, however, it would be well for you to procure your release from the obligation which you assumed in the contract to pay the full purchase price, as in case your assignee failed to complete his payments the vendor could undoubtedly hold you therefor.

Minor Heirs

Can an estate in California be settled where the heirs are three adult children and two minor children of deceased child, residing in the East, without waiting until the minor children become of age? The mother of these minor children in their guardian.—Subscriber, Watsonville.

The estate may be settled in the usual manner and the proportion to which the minor children are entitled distributed to their guardian. The receipt of guardian will be a complete acquittance for the administrator of the estate.

Holographic Will

I have written the following will in my own handwriting, signed and dated it. Is it a valid will and how many witnesses are required?

"July 30, 1921. This is my last will and testament. I leave all of which I die possessed to my wife, Jane Doe, she to be executrix without bond. If she is not living at the time of my death, I leave all of my said property to my daughter, Mary Roe, said daughter to be executrix without bond. (Signed) John Doe."—Subscriber, Holtville.

Within the state of California, at least, the above will would be valid and would require no witnesses. It is known as an holographic will.

Boys Drive Illegally

My wife has an automobile which our boys drive. The law seems to make no restrictions on the age. In case of accident and damage suit, am I likely to be made a co-defendant? If so, how am I to protect myself?—Subscriber, San Jose.

You are in error in respect to there being no law placing a restriction upon the age of drivers. The motor vehicle act provides that each operator of a car shall be given a license or badge which he shall at all times while operating the car carry with him and upon his person and exhibit to any officer requiring to see the same. It further provides that no such license or badge shall be issued to any applicant under the age of 18 years and that it is unlawful for any person to cause or knowingly to permit his or her child or employe to operate or drive a motor vehicle upon a public highway whether as chauffeur or operator before having first obtained such license. No application to the department of a minor to operate or drive a motor vehicle shall be granted unless the parent or parents having custody of such applicant shall join in the application by signing the same. Any negligence of the minor so licensed in operating or driving such motor vehicle whether as chauffeur or operator shall be imputed to the person or persons who shall sign the application of such minor and they shall be held jointly and severally liable with such minor for any damages caused by such negligence. The operation of such car on a public highway without such license would undoubtedly render the minor liable for punishment for a misdemeanor, upon conviction of which he might be punished by fine nor exceeding $500, imprisonment in the county jail not exceeding six months, or both. The courts have also held where an automobile is purchased for pleasure, comfort and enjoyment of the family and the minor son is authorized and permitted to drive the autmobile, in such driving and using the car it is for the very purposes for which it was procured. In that sense he is in the business of his father as his agent and the father would be held liable. Under the familiar rule of the responsibility of a principal for the act of his agent in the course of his employment, the father has been held liable for any such damage. It is true that in several states the courts do not uphold this rule, but it has been upheld in California.

HOME CANNING

Home canning never proved more attractive than the present season. It seemed earlier in the season impossible to get any very definite information from canners or purchasers of fruits as to disposal of a crop at satisfactory prices. The grower with home canning facilities has been able to put his fruit into a form in which it can be permanently stored and the market awaited. It appears that canners are buying at prices which will make this season's profit cover their last season's losses. That is perhaps entirely allowable, but the grower prepared to protect himself has a great advantage. The best of it is that there are now home canning appliances which may be secured at reasonable prices. Some of the cruder home methods by which the wash boiler has been brought into use and ordinary kitchen utensils provided most of the other appliances were described in recent Cultivators.

In addition there are pressure outfits which make it possible for the grower to put up the fruit as safely in every way as the best equipped canneries. About the only handicap is that the grower has no established brand when it comes to marketing. We believe that through cooperation this objection may be overcome.

MISSED THE LADYBUGS

Says the Imperial Valley Farmer: "It is the concensus of opinion among cantaloupe growers that lady bugs can be used with good results in combating the aphis. For several years until this season ladybugs had been imported regularly to the valley and aphis did no considerable damage. Last year the state department of agriculture decided that the ladybugs had not done the work expected of them and none were shipped to the valley. The results have been apparent in the last three weeks during which time 13,000 acres of cantaloupes have been practically wiped out by the aphis, and an estimated yield of 750 carloads destroyed.

MAKING QUALITY RAISINS

(Continued from Page 125.)

the economic sense. On the other hand, to function properly the vine, like the human being, can not have all work and no play. That is, we should not expect to grow excessively large crops year after year any more than that a human being can long hold up under the strain of continued overwork. Sometime the breaking point will be reached and the productive ability decline until the conditions surrounding it are changed for the better.

Let us suppose you want to grow quality raisins. What is necessary? First of all study your conditions. Just because some one who is growing grapes on an entirely different soil than is found in your vineyard is able to produce three, or possibly four, tons to the acre is no reason to suppose that you can do the same under the conditions existing on your place. On the other hand, if you are producing only one-half ton of raisins it is not out of reason to believe that you can increase your production a great deal and have a better product. It is well to remember in this connection that if you are successful in producing fruit of good quality you will usually have little to complain about as to quantity.

Plenty of Water a Necessity

The value of plenty of irrigation water is perhaps little realized, and where it is realized, often too little care is taken to insure the application of water at such times that the vines will not actually suffer for water between applications. Many times the water may be applied to soils which naturally take it slowly, and without investigating one is led to believe a very thorough wetting has been given when in fact the water may have penetrated only a short distance below the surface. The remedy for these conditions, of course, is the soil auger. If this instrument, or implement, is used frequently and intelligently during the growing season, and the water applications regulated to conform with the story it truthfully tells, quality will become a fact rather than a hope.

Fertilization Pays

It is an established fact that the soils throughout the vineyard districts of the San Joaquin Valley are deficient in organic matter and nitrogen. With this knowledge at hand it is not surprising that the addition of manures or the growing of green manure crops is a wonderful help in increasing production and quality. The green manure question is of course a difficult one to solve, especially in vineyards of late ripening varieties. That the problem is not impossible, however, has been proven in a number of cases. With the addition of quantities of organic matter the question of water penetration and moisture retention becomes less difficult. In fact, it has been demonstrated in vineyard practice that even one good cover crop turned under and well rotted makes an appreciable difference in the water requirements of a vineyard. It is not fair to suppose that the fertilizer requirements of a vineyard stop at the growing of a green manure crop to furnish organic matter and nitrogen. Phosphoric acid, potash and, last but not least, lime all have an important place to fill when considering the application of plant foods, especially in the older vineyard districts.

Pruning for Quality

It would appear to be the height of folly to adopt any set rules for pruning in a vineyard when the conditions surrounding it are in such shape that the vine itself cannot properly function. With the proper application of fertilizers and the intelligent use of water,

Just Right for Plowing Under

A mass of green manure when turned under in the vineyard, especially if the plant is a legume, is an important step in improving the quality of raisins.

in a few years the vineyard will give an indication of what it can normally accomplish. There the skill of the pruner is required to leave just enough fruiting wood that the vine will be able to produce a maximum crop and still mature enough good strong fruit wood to insure a crop the following year. The grower who has studied his vineyard with such care that he can successfully maintain this balance of fruit and wood over a period of years is indeed entitled to be called a successful vineyardist. On the other hand, if a grower so prunes and handles his vines that he sacrifices quality, even though he may be able to grow a tonnage far greater than ever before produced, he is just as surely a failure when measured by the standards of the consumer, who after all is the ultimate judge of his efforts.

Other Factors Influencing Quality

The other important factors influencing quality are briefly stated. Insects and diseases which damage the fruit or defoliate or in any way weaken the vine must be fought and eliminated if possible. It should be remembered in this connection that the weaker the vine, whether the cause is lack of water or insufficient plant food in the soil, the more apt it is to be injured by these parasites and the poorer the quality will be. Insects and diseases are usually easily controlled if the proper remedies are applied in time, and the fact of their existence should not discourage the progressive grower.

The big need is for the grower to study and understand his particular conditions, and when he finds the reason for failure or success to act accordingly to the end that the California raisin may be of such quality that the efforts expended in advertising and marketing may have more than a fighting chance for success.

Do not forget

to demand that the tractor oil you buy resists Heat, Weight and DILUTION!

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TRACTO-RITE TRACTOR OIL "Resists HEAT, WEIGHT AND DILUTION. It is PURE PENNSYLVANIA."

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HIGGINS BLDG., LOS ANGELES, CAL.

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FRUIT TREES

Our trees are grown under most favorable conditions in the choicest spots in California.

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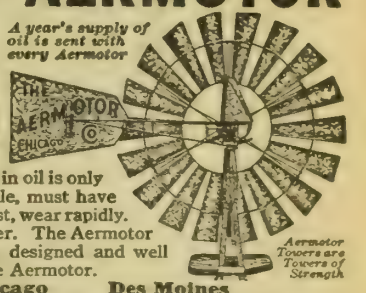

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Any windmill which does not have the gears running in oil is only half oiled. A modern windmill, like a modern automobile, must have its gears enclosed and run in oil. Dry gears, exposed to dust, wear rapidly. Dry bearings and dry gears cause friction and loss of power. The Aermotor pumps in the lightest breeze because it is correctly designed and well oiled. To get everlasting windmill satisfaction, buy the Aermotor.

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When Writing Advertisers Mention California Cultivator.

Household Department

LIFE

Life is not strife for gold
Nor metaled fame,
Its years in joy are told—
The hearth fires flame,
The roses nodding in the sun,
The children's happy feet,
Some little duty done,
A pleasure fleet.
Life is the joy of friends
And birds and trees,
The notes the lover sends,
Old memories,
Neighbors and sunny skys,
And little trips to make,
Tears when a loved one dies
And hearts that ache.
Life is a sum of things,
Laughter and cheery days,
Hope which the morning brings,
The future's rosier ways,
Faith when the clouds are gray,
Grief when the shadows fall;
So we must go our way
Knowing them all.

— Edgar A. Guest

The leanest people are those who try to keep all they get.—Associated Grower.

A HOME FOR JACK-O'-LANTERN

(Concluded.)

The song went on, and the woman with wistful brown eyes and tender lips turned impulsively to her husband.

"Isn't it beautiful, George?" she asked. "Aren't you glad you came?"

The man nodded and patted her hand.

It was not right. These were Ralph's parents. Miss Leech, being detained by one of the doctors, had asked Ruth to take this man and woman to room 211, and now on the very threshold Jack was singing them away from Ralph. Ruth tried to speak, but the woman put her finger to her lips. Her eyes were filled with tears.

"Let every heart prepare Him room
And heav'n and nature sing,
And heav'n and nature sing—"

Ermina came close to them. So engrossed had she become in the success of her scheme that she had forgotten Ruth.

"He is very plain," she whispered. They had reached the threshold of the room.

"Plain!" repeated the woman. "Plain! Look at him, George!"

Neither of them glanced toward Ralph with his soulful dark eyes and pensive mouth. Their eyes were upon Jack-o'-Lantern, and, sitting there, singing for a father and a mother, Jack-o'-Lantern was almost beautiful.

The woman went swiftly across the room and, kneeling by his bed, touched his hand.

"My little boy," she said, "would you like to come with us and be our little boy?"

"Sure," said Jack-o'-Lantern. "I was looking for you."

"It all came out just as I planned," said Ermina, squeezing Ruth's arm. "A home for Jack-o'-Lantern."

"But, Ermina, it isn't right, not a bit. That was Ralph's home, and those were to be Ralph's father and mother. They're wonderful people, and Ralph would have had a wonderful home."

"You mean Jack will have. After I saw that man and woman I couldn't have done differently, Ruth. I just had to have them for Jack-o'-Lantern. Others will want Ralph, he's so good to look at, but I promised Jack—" Conviction died out of Ermina's voice. She was not quite sure. She had never been quite sure.

"Poor Miss Leech," she said contritely. "I'm always confessing to her, and she's always forgiving me. There may be a limit to her forgiveness, Ruth. What do you think?"

"I don't know, Ermina, really, I don't. I wanted a home for Jack just as badly as you did, so badly that I didn't dare ask you about your scheme. I—I hoped it would work. I wasn't smart enough to think up one myself. If you go to Miss Leech, I will, too."

"I know what I'll do, Ruth. I'll tell that woman, Jack's mother. I'll ask her what we ought to do. She'll know."

Accordingly they drew Jack's new mother just outside the door, and Ermina began her story just where she should have ended it.

"Ruth Keniston says it was almost like stealing—having him sing like that—just at the right time. He always wins people when he sings, but at first—if he doesn't sing—he's so plain in spite of his grin, and he hasn't a very good way of expressing himself—except of course in music. Jack-o'-Lantern is really smarter than Ralph. Your husband will be surprised how much he knows about baseball—all the big pitchers' names and everything. Fairies, too—I told him to sing in hopes that a fairy would—"

"It was lovely to hear him sing then—just at the right time. I knew as soon as we heard him that my husband would—but I think anyway we—"

"I should have given Ralph his chance, though. It wasn't square."

"My dear girl, I can't get it through my head what you've done that isn't square. If it helped to give me my little boy, it couldn't have been very crooked."

They had been talking so busily and were so intent upon each other that they had not seen three people who, entering the corridor, had come down through it until they stood upon the threshold of room 211. Miss Leech and another couple, man and woman, were looking in at the boys.

"There he is," Miss Leech was saying. "I am sure he will be just what you wish. He is eight years old. We know of his parentage. His name is Ralph—a quiet boy of excellent mentality—"

Ermina's eyes flashed, and Ruth's pale cheeks were as pink as primroses.

"You didn't—then you didn't come for Ralph at all!" gasped Ermina.

"Oh, my dear!" said Jack's new mother, and she began to laugh. "Is that what worried you? You thought I had come for Ralph and that Jack's adorable singing had turned me away from him? I never once thought of Ralph. I had never heard of him. I've been here in the hospital, in the surgical ward, for two weeks, and I've heard Jack sing every morning. I sent for my husband so that we might see him for the first time together. We had a little boy of our own once. Plain and freckle-faced—" She hesitated, then went on gayly, "I was about ten days ahead of the fairies. I—we came for Jack-o'-Lantern."

"It won't be necessary for Miss Leech to forgive you this time, Ermina," Ruth said as they skipped toward the nurses' home.

"Will you, Ruth?" asked Ermina.

HOUSEHOLD QUERIES

Salads and Sandwiches

I am very fond of salads and sandwiches. Would the California Cultivator print some more recipes for them?—Lola McKenzie, Douglas City.

Canning String Beans

Could you reprint the recipe telling how to can green string beans? It was printed last summer and called for vinegar, sugar and salt. I lost my recipe.—Subscriber, San Dimas.

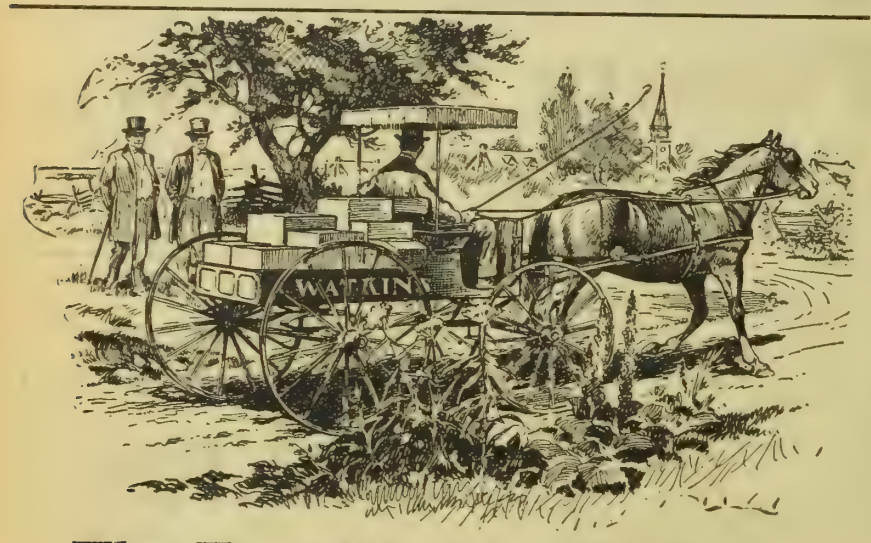
This recipe was given last September in the Cultivator by S. G. B., who wrote that she had used it several years and found it simple, quick and satisfactory, that she "never lost a jar of beans canned by this recipe, and others who have tried it like it very much: To half gallon fresh string beans add ½ cup vinegar, 2 level tablespoons salt, 2 level tablespoons sugar. Add water to cover beans and boil 20 minutes after they come to boil. Seal while hot. In winter I pour off all the water and cook as fresh string beans."

Cement Floors

We are contemplating building a concrete bungalow, Mission style, and were considering a concrete floor. We should be greatly obliged to hear from some of your readers through your columns as to how the housewives like the concrete floor.—Subscriber.

Our impression is that the concrete floors will not be entirely satisfactory in living rooms. We have known of their being laid, however, and then covering with strips of flooring. In

(Continued on Page 140.)



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The first Watkins wagon has now grown to **thousands** of automobiles and wagons. The first handful of Watkins customers has increased **to twenty million satisfied users!** Today, more than 4,000 Watkins Men are kept busy supplying the demand.

Why this tremendous growth? Service; and saving; and quality—that is the answer. Watkins products—**delivered right to your home**—mean convenience in buying. Watkins products—sold **direct to the user** through authorized Watkins Retailers—mean economy. Watkins products—put to the test for more than fifty years—mean **quality you can bank on!**

You gain by holding your orders till the Watkins Man calls at regular intervals. Do it. If a Watkins Man has not called recently, write to us—and we'll gladly see that you are supplied.

137 Quality Products

are brought to your home by the Watkins store at your door. Among the 137 Watkins products are: Livestock and Poultry Preparations; Household Medicines, Liniments, Balsams; Spices, Extracts, Coffee, Baking Powder, Washing Compound, Tube Flavors; Soaps, Shaving Cream, Perfumes, Toilet Waters, Face Creams, Powders, Tooth Paste, Tooth Brushes; Automobile Supplies, Tires, Tubes, Spark Plugs, etc;

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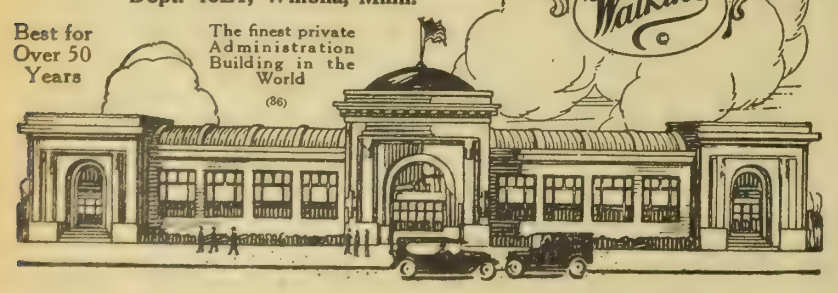

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$1 Delivers Your Sechrist

The Sechrist Pressure Cooker saves a woman more in labor and time than can be estimated. Besides that—a Sechrist saves about SIXTY DOLLARS in fuel and food in one year's time.

Use the "cold-pack method" and your Sechrist for your canning. You will realize its great helpfulness only when you see how much time and fuel you have saved.

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Today, every page in this big book tells the truth about present-day prices, and puts before the public the prices that should be paid for everything you buy.

WARD'S— The Oldest Mail Order House is Today the most progressive

Ward's today is filled with the spirit of Youth, of Aggressiveness—alert, progressive, forward looking—and is marching forward in giving even better service, even better merchandise, and always lower prices.

Every page in this book breathes the Spirit of Ward's—that of progress in Service and Saving—for YOU.

FOR WOMEN: Wonderful materials at prices that have not been possible for years—such as: "All-wool storm serge which sold for $2.28 a yard last year is now 98 cents per yard; 32-inch chambray is down from 38 cents to 14 cents a yard; 32-inch dress gingham which was 44 cents last year is now 19 cents per yard; 40-inch colored voile has been reduced from 59 cents to 26 cents a yard; good quality 27-inch outing flannel from 39 cents to 14 cents per yard.

And clothing, the daintiest underwear, corsets that give just the right figure and comfort, hose, shoes, toilet articles—everything for women's needs, all of the most beautiful and newest styles—at prices remarkably reduced.

FOR MEN: New Worsted Serge Suits are down at Ward's from $28.75 to $15.95. Men's Reversible Mackinaws are down from $16.95 to $10.95. Boys' Rain-Proof Corduroy Suits from $13.95 to $9.00. Men's Chambray Work Shirts are down from $1.75 to 69c. And so the price story runs on page after page of Ward's New Catalogue and Buyers' Guide.

FOR THE HOME AND FARM: Blue denim is down from 54c to 19c. A four-piece Ivory Enamel Bed Room Suite was $134.00, is now $82.45. Matresses are down from $25.50 to $13.95. Team Harness from $118.25 to $80.75, 100 feet Canvas Belting, from $80 to $29.50.

These are but examples of the Saving Your Copy of Ward's New Catalogue offers you. Every page is filled with similar big savings. And remember, all prices are for standard goods, merchandise of Ward Quality—all sold under our 49-year-old guarantee—Satisfaction or your Money Back.

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FOR all these forty-nine years Ward's has been dealing fairly with the public. We pledge our customers continued fair dealing — also Better Service, Better Merchandise and even Lower Prices.
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Complete Index Pages 507 to 522
CATALOGUE AND BUYER'S GUIDE
No. 95
Fall and Winter 1921-22

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This great new-old institution of Montgomery Ward & Co. today marches in the lead among the alert, progressive, low-price-making business houses of America. It is a house of experts, searching the markets with ready cash, buying at today's lowest prices for YOU.

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These are new stocks of goods, manufactured at the new low costs of production, and our customers will get the benefit of these new money-saving prices.

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This page is published to tell you the story of Ward's New Fall and Winter Catalogue and Buyers' Guide. And to print for YOU the coupon below for your convenience in writing for Your copy of this new and complete Guide to today's correct prices.

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CHICAGO FORT WORTH **Portland, Oregon** KANSAS CITY SAINT PAUL

MOLASSES

"I have been feeding Cane Molasses for years" writes Mr. H. L. Wakeham, of Santa Ana

And there are scores of other successful dairymen in California who have had the same experience that Mr. Wakeham mentions; they have found that Camo Pure Hawaiian Cane Molasses is a stock feed that can be fed the year around to cows on test or production, day in and day out, **and at a decided profit.**

Here Is Where the Profit Lies

By adding Camo Pure Hawaiian Cane Molasses to your cheaper roughages, such as straw, you can convert an otherwise wasted feed into a profit maker for you. There is nothing that so pleases the appetite of a cow, or acts so beneficially as a tonic as Camo Molasses. Get all the details. Write for our **new and lower prices** and booklet.

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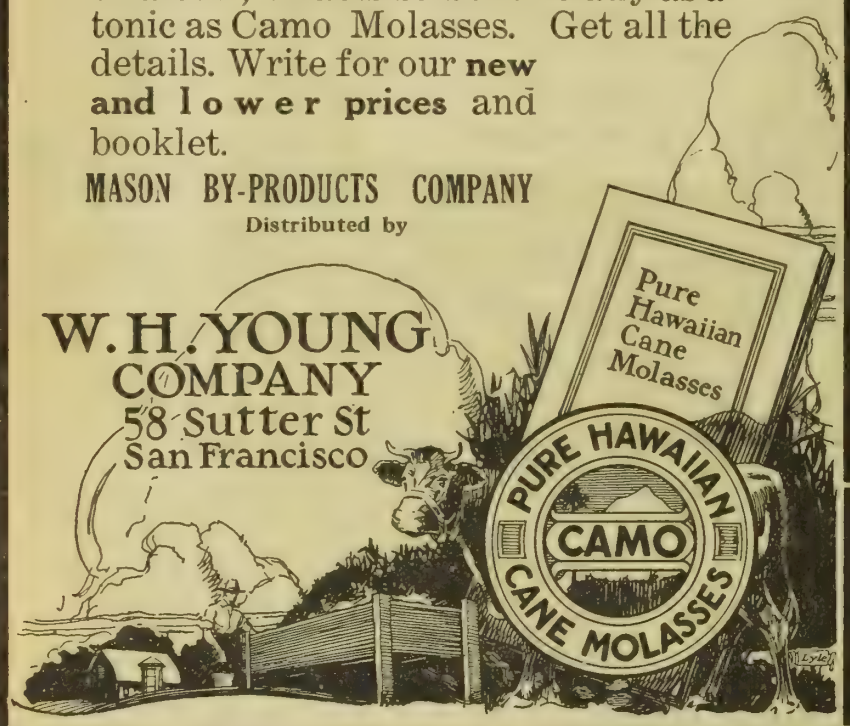


Show Bull at a Bargain

Born Dec. 10, 1920

A young bull that combines the great qualities of **Sir Pietertje Ormsby Mercedes** and **King Segis Pontiac.**

TYPE PLUS PRODUCTION

Sire — Tritomia Pietertje Ormsby, a line bred son of Sir Pietertje Ormsby Mercedes and out of Alice Tritomia Ormsby, who made 34.43 lbs. butter in 7 days and 1,048.6 lbs. from 24.287 lbs. of milk in a year. **This bull carries 62½ per cent of the blood of Sir Pietertje.**

Dam—K. S. P. Queen Burke, a daughter of King Segis Pontiac. Her record is 31.12 lbs. of butter from 584.3 lbs. of milk in 7 days at 4½ years of age. **His seven nearest dams average 31.3 lbs.**

Tuberculin tested and guaranteed in every way.

MAXWELL FARMS

Near Universal City R.F.D., Hollywood, Cal.

HOLSTEIN Fred Hartsook RANCH CATTLE

We have assembled an excellent foundation herd of females and will be glad to have breeders call. Fred Hartsook, Lankershim, California.

Sir Aaggie Hiske Walker

SHOW TYPE and PRODUCTION

He was first in two year class at Riverside last year.
His dam is a 34 lb. daughter of Prince Gelsche Walker.
His sire is the 36 lb. Morris bull—Sir Aaggie De Kol Acme.
A limited number of approved cows will be accepted for service.

E. D. BARRY, JR. Workman and Azusa Ave., Covina, Cal.

Guernsey Meet in Humboldt County

A SPECIAL meeting and general jollification of Humboldt County Guernsey breeders and their families was held recently on the C. S. Rasmussen farm near Loleta, nearly 100 enthusiastic Guernsey fans participating.

During the forenoon the notable Rasmussen herd of Guernseys was inspected by the assembled breeders. Rasmussen has a herd that is attracting nation wide attention, the remarkable records of his mixed grades and pure breds being the subject of comment in many Eastern breeding journals and magazines. The history of the herd and the systematic way in which it was built up was given later as a part of the afternoon program.

One of the livestock experts present at the meeting was E. L. Westover, western representative for the American Guernsey Cattle Club, and before noon Mr. Westover gave an interesting demonstration of the breeding points upon which Guernseys are judged, utilizing a number of the Rasmussen Guernseys as subjects for his demonstration and address. Among these Westover made an earnest appeal for the continued cooperation of all the breeders in boosting not only for their own organization and the Guernsey breed, but for united efforts and enthusiasm in working for the upbuilding of all the dairy breeds in neighboring localities. He stressed the three great points of the Guernsey breed in the phrase: "Economy of production, quality of product, and ruggedness of constitution," and urged the assembled breeders to take a lesson from the Guernsey cow (noted for her persistency in production) and persist tirelessly in developing and promoting the dairying industry, with especial efforts for the Guernsey breed.

STOCK JUDGING CONTEST

"Summer Doings at Chaffey" reports as to the first annual stock judging contest recently held by the animal husbandry class at the Italian Vineyard Ranch as follows:

"There were 33 contestants and keen rivalry was displayed. Besides the contestants there were many others who were placing the animals and getting ideas.

"There were four classes of stock: Guernsey cows, Duroc-Jersey aged sows, Berkshire aged boars and Berkshire aged sows. The contests were divided into two parts: First, the placing in the order of rank; and second, the giving to the judges of the reasons for this placing by each contestant.

"The judges were Prof. E. H. Hughes of the college of agriculture of the University of California; Prof. R. A. Condee of the George Junior Republic and the Chaffey Junior College of Agriculture, and Robert Walker of the Diamond Bar Ranch.

"The ribbon winners in the Guernsey cattle division were: 1st, E. D. Woodhouse; 2nd, F. E. Onyett; 3rd, John Bartlett; 4th, J. D. Kirkpatrick.

"The successful contestants in swine judging were: 1st, N. H. McCollom; 2nd, F. E. Onyett; 3rd, E. D. Woodhouse; 4th, R. W. Merrick.

"The championship ribbon awarded for the total highest number of points for both cattle and swine was presented to E. D. Woodhouse. The ribbons for this contest were given by the Southwestern Berkshire Congress.

"One of the most enjoyable events of the contest was the fine collation given by Alex M. Wilson and family at the noon hour. All visitors and contestants did ample justice to it and came away singing praises of their royal treatment."

A Quartette of Winners

Four grade daughters of Pacific May King Masher 41595, (sired by Isabella's May King of the Pacific, 30775 and out of Golden Rod of Chestnut Hill, 25501) owned by C. S. Rasmussen of Humboldt County. From left to right these cows and their records are: Queen, 449 pounds fat in ten months; Horney, 318 pounds fat in nine months; Guernsey, 452 pounds fat in ten months; Buck, 500 pounds fat in ten months. These records were all made as two year olds on two milkings daily, running in pasture and receiving no grain.

was Rasmussen's outstanding herd sire, Proud King of Edgemoor, one of whose two year old daughters made an average production of 413 pounds fat in Rasmussen's herd, this record being made on two milkings a day with the cows running to pasture and receiving no grain. Three other two year old daughters of this bull made, under the same conditions, records of 388 pounds fat in nine months, 380 pounds fat in ten months, and 375 pounds fat in ten months.

The mid-day feature of the Guernsey meet was a bountiful luncheon, served temptingly at two long tables. At its conclusion a program of addresses and discussion of Guernsey topics was launched. Clyde E. Niles, superintendent of the River Banks Farm at Grants Pass, Oregon, was among those who spoke. He told of the work being done on this farm and the results of various experiments. He expressed much surprise at the wonderful natural conditions favorable to dairying and the breeding of dairy cattle in Humboldt County. Among others who spoke were W. A. Beer of Arcata, C. S. Rasmussen, Charles Ford of Arcata and L. D. Smith of Hydesville. The main address of the afternoon, however, was given by E. L. Westover, who mentioned in his talk the fact that Humboldt County has the national record for its average production of grade cows, this average being higher by a goodly margin than the production record of any like number of cows in any county in the United States. This is largely due, he said, to the excellent natural dairy conditions, the good and intelligent care given to the cows, and to the fact that many of the high producing cows can be traced back to the good old Guernsey sire, Hemlock, the first pure bred bull to be brought to the county. He emphasized the need of securing better bulls to keep up the high average.

Melba 15th of Darbalara, a red Shorthorn cow, has established at 21,635 pounds milk and 954.5 pounds butter fat in a year, an average butter fat test of 4.41 per cent, a new world's record for both milk and butter fat for Shorthorn cows. Melba is owned by the Scottish Australian Investment Company, and is one of the Shorthorn cows on the Darbalara Estate in New South Wales.

Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins

October 4, S. O. Walker, Visalia.
October 5, Robt. T. Curtis and Son, Tulare.
October 6, Alex Whaley, Tulare.

Herefords

October 27. Pacific Coast Hereford Breeders' Association, California National Livestock Show, San Francisco.
November 1, J. H. Cazier and Sons, Sacramento.

Shorthorns

October 28, California Shorthorn Breeders' Association, California National Livestock Show, San Francisco.
November 2, W. M. Carruthers, Live Oak.

J. D. Rowe and Sons, Davis, lessees of the famous Innisfail herd of milking Shorthorns, are planning an extensive exhibit for the fall fairs and will include in their circuit the state fair, Stockton, Fresno and Hanford, the California National, the Pacific International at Portland and the Western Royal Show at Spokane. At present 15 cows are on semi-official test and all are making splendid records. Messrs. Rowe experience a very active demand for the surplus of the herd and are usually sold down very close.

Harvey M. Berglund of Dixon has sold two Duroc service boars to a South American buyer; one to R. Sale of Red Bluff and one to the Eldorado Ayrshire Farm, Knights Landing. Berglund says that many farmers are becoming interested in pure bred hogs as a means of marketing a part of their surplus barley.

R. R. Engle of the Englehaven Ranch, Ukiah, recently visited the Shorthorn herd at Caledonia Farms, West Sacramento, and purchased six well bred females, four of which had calves at foot. In addition Mr. Engle secured 12 head of unregistered Shorthorns from Senator B. F. Rush of Suisun. Mr. Engle is just entering the pure bred business and hopes to build up a creditable herd.

Secretary Paine of the California state fair announced last week that he has secured the services of the well known Poland China judge, J. C. Meese of Nebraska, to tie the ribbons in the Poland classes. Meese is one of the best known swine judges of the cornbelt and for years has officiated at the leading shows.

Homer L. Graham, manager of the Eastman Ranch, San Fernando, has recently added several very high class sows to the Eastman Poland China herd. Three junior yearlings were secured from the Glover herd in Missouri and include a daughter of Giant Buster, one by Checkmaker and one by K's Big Jones. It is expected that all three will be shown at the coming state fair.

H. C. Witherow of Live Oak and Clayton Slocum of Willows are each getting ready to cop off the special prize offered by the American Duroc Jersey Record Association for the best five sows farrowed between March 1, 1920 and March 1, 1921. Witherow will show junior yearlings and Slocum will have out senior sow pigs. This prize was offered last year but no exhibitor qualified.

Miss Aaggie Acme Burke, the great Young Holstein cow owned by A. W. Morris and Sons of Woodland, whose record of 24,338.9 pounds milk completed last spring was a world's record for age at that time has been on test for seven months and in that time has to her credit 18,393.1 pounds milk and 825.68 pounds butter.

July 29th, 1921.

California Cultivator,
Los Angeles, Cal.
Dear Sir:

Received your letter of July 20th, with the enclosed check for $25 for the California Cultivator prize for the best record of five grade cows during the month of June, for which I thank you very much. Also many thanks for your good wishes.

With best wishes, I am,
Yours truly,
Nate Hauck.

Twenty-seven California Jerseys representing 10 herds appear in the list of Jerseys that produced 50 pounds butter fat during the month of April. T. B. Purvine of Petaluma heads the list with seven; J. W. Coppini of Ferndale is second with six; Dr. H. G. Gross of Eureka is third with four. The California leader is Fairy Boy's May Margaret, owned by T. B. Purvine, with 88.63 pounds fat to her credit.

Mollie, a Canadian Milking Shorthorn cow, has given 11,938 pounds milk and 711 pounds butter fat in a year, breaking the American butter fat record and being the first American Shorthorn to make over 700 pounds butter fat in a year. The new record displaces the record made by Snowdrop of Sherwood Farms, Far Hills, New Jersey, that completed a record of 15,550 pounds milk and 691 pounds butter fat last fall.

THE LICE AND THE HOGS

At this time of the year did you ever notice a bunch of hogs when not eating, rubbing themselves against the fence and hog houses apparently trying to shake the structures to pieces and at the same time emitting grunts suggestive of delight at the destruction of property?

There is no doubt that the rubbing produced a feeling of delight, but their evident joy was not due to the fact that they were demolishing their rubbing places! A careful examination of the hogs, most busy at rubbing, will reveal the well known parasites commonly known as hog lice. Sometimes one may fail to find the parasites but will note small yellow deposits on the bristles, particularly on the back portion of the neck. These yellowish deposits are the eggs of the lice destined to become full grown pests to further annoy the host.

In seeking the parasites on a lousy hog you will most frequently find them on the ears, neck, flanks and inner surfaces of the legs. Observant hog raisers inform us that hundreds of dollars are lost annually through unthriftiness of their hogs due to these pests.

There are various simple methods of ridding hogs of lice. When dipping is impracticable waste oils from tractors will be found to be cheap and effective. Get the oil on the louse or the egg and as the old hog man says, "It will do the trick!"

Some hog raisers construct home made oilers by wrapping an old sack around a post in the hog lot and keeping it well oiled. This serves as a "scratcher" and an automatic oiler. Another method is to crowd the hogs into close quarters and spray them with oil. Kerosene emulsion is also known as an effective louse destroyer. Where the premises are infested, any effective preparation must be repeated from time to time if the hogs are to be kept practically free from louse annoyance. When oily preparations are applied to hogs, care should be taken that they are not unusually warm as the oil has a tendency to interfere with radiation through the skin.

PURE BREDS PAID A THIRD MORE

The Pettis County cow testing association has shown conclusively that pure bred dairy cows in the right hands are more profitable than grades, according to E. M. Harmon of the Missouri agricultural extension service. A comparison of the production and profit of the pure bred cows owned by the Pettis County Holstein Company with all other cows in the association during the past year showed that the pure bred produced a net profit nearly 40 per cent greater than the grades.

It is significant also that the pure bred cows owned by the company were kept in farm herds with other cows included in the test. The records show that the pure breds averaged 7,782 pounds of milk, 269.4 pounds of fat and a net profit of $115.63 a year. The grades averaged 6,127 pounds of milk and 239.9 pounds of fat and a profit of $83.01 a year.

A well filled self feeder and a thrifty shoat make a combination which is hard to beat for quick returns, large profits, little labor and diminished risk.

AUCTION

Holt Caterpillar & Implements
20 Head of Horses 20

On the Von Schriltz Ranch, 4½ Miles Southwest of SANTA ANA

Wednesday, August 10th at 10 A.M.

It is seldom that buyers have an opportunity such as this to secure Caterpillar implements at your own price. Included is a Holt 60 Caterpillar engine, 1 extra heavy Killefer Mouldboard plow, 4 gang with subsoilers, 1 16-inch Killefer Mouldboard 2 gang plow, 4 14-inch deep tillage Oliver engine plows, 3 and 2 gang, 2 16-inch heavy 2 gang engine Jumbo plows, one 12-inch 2 gang power lift John Deere engine plow, 1 heavy 5 gang Holt engine disc plow, 2 heavy 5 and 8 gang Sanders disc plows, etc. There are a large number of other implements for beet and bean farming to be sold. These implements are all in A-1 condition, many being used only one season. The work stock is extra good. If you are in the market for a Caterpillar and heavy Caterpillar tools, don't miss this big closing out sale.

I. M. Von Schriltz, Owner

RHOADES & RHOADES, Auctioneers

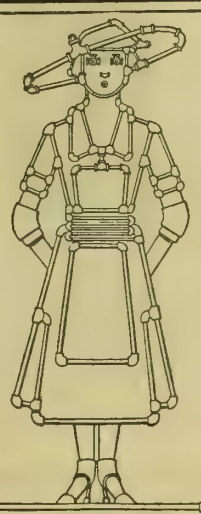
GUASTI BERKSHIRES

The Big Modern Type

Weanling Trios a specialty: two gilts and unrelated boar. Specials for farmers and pig club boys. Herd tuberculin tested and cholera immune. Breeding stock of all ages.

ITALIAN VINEYARD CO.

Alex. M. Wilson, Supt. Guasti, Cal.



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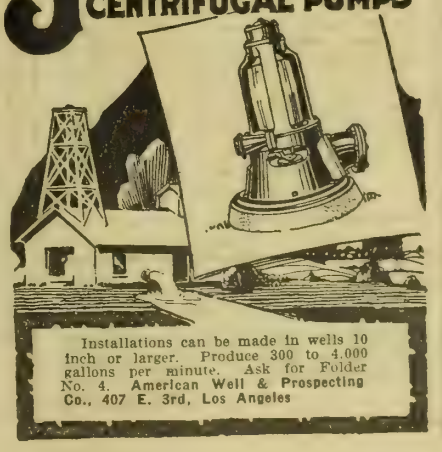

Installations can be made in wells 10 inch or larger. Produce 300 to 4,000 gallons per minute. Ask for Folder No. 4. American Well & Prospecting Co., 407 E. 3rd, Los Angeles

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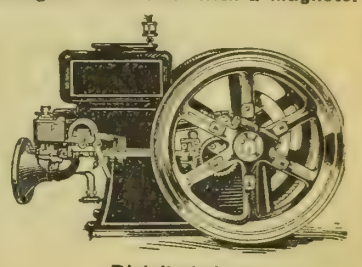

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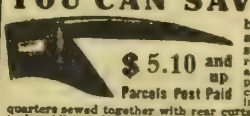

$5.10 and up Parcels Post Paid

by recovering your old auto top frame yourself. We make these recovers to fit all makes and models of cars. Any person that can drive a car can put it on. We furnish instructions. Roof and quarters sewed together with rear curtain, fasteners, welts and tacks. All complete. Give us the name, year and model number of your car and we will send you our catalog with samples and quote you exact price. LIBERTY TOP & TIRE CO., Dept. B-1, Cincinnati, O.

Poland China Hogs
For Sale

Fall boars, sired by Yates Big Orphan and out of Glenn Chief and Long Jumbo sows. Guaranteed breeders.

25 spring gilts of March and April farrow, sired by Yates Big Jones and Young Bob. Tops from 100 head.

Tried sows, bred for August and September farrow, bred to Yates Big Jones and Young Bob. All in perfect breeding condition.

This stock is all priced in accordance with present financial conditions and is cholera immune.

Owner:
Fred. A. Clark, Orland, Cal., R.F.D. No. 2
Herdsman: R. J. Yates

The California Cultivator
Costs Only $1 Yearly

Prince Albert's a new note in the joys of rolling 'em!

Talking about rolling your own cigarettes, you've got a handful-of-happiness coming your direction when you pal it with Prince Albert and the makin's papers! For P. A. is not only delightful to your taste and pleasing in its refreshing aroma, but our exclusive patented process frees it from bite and parch! You smoke P. A. with the bars down!

And, for a fact, rolling up Prince Albert is mighty easy! P. A. is crimp cut and stays put and you whisk it into shape before you can count three! And, the next instant you're puffing away to beat the band!

Prince Albert is so good that it has led four men to smoke jimmy pipes where one was smoked before! It's the greatest old buddy-smoke that ever found its way into a pipe or cigarette! And you'll o. k. that say so!

Prince Albert is sold in toppy red bags, tidy red tins, handsome pound and half pound tin humidors and in the pound crystal glass humidor with sponge moistener top.

PRINCE ALBERT

the national joy smoke

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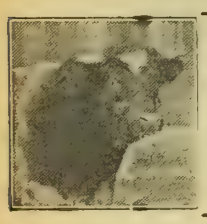

When Shorthorn cows yield near 20,000 pounds of milk per year and Shorthorn steers continue selling at the top of all the beef markets the landowner or tenant can readily understand the advantage of growing Shorthorns.

"Other breeds may come and go but the Shorthorn goes on forever."

AMERICAN SHORTHORN BREEDERS' ASSOCIATION
13 Dexter Park Ave., Chicago, Ill.

INNISFAIL MILKING Shorthorns
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Two Young Bulls From High Producing Dams

A May 1920 son of the champion Westward Ho and out of a 10,500 pound daughter of the 1919 Chicago champion. A 14 months old son of Glenside Royal and out of Princess Clay a cow of beautiful type and with over 12,000 pounds milk. Also have a few younger bulls and heifers. Prices moderate and all guarantees. Here is your chance. Address

J. D. ROWE & SON, Lessees, Davis, Cal.

NOVEMBER 2

is the date of my

Fourth Public Sale of Shorthorns

30 Scotch Females
10 Scotch Bulls

All of My Own Breeding

W. M. CARRUTHERS
Live Oak Cal.

Rosebud Shorthorns

A Choice Herd of Fifty Females
Headed by Milmar Stamp
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FOUR BULL BARGAINS:

We have for sale at real bargain prices four extra good yearling bulls that are well bred and of good color. These calves are just right for the range man who wants to improve his cattle. Visit our herd or write for prices. Satisfaction guaranteed.

Edinger-Johnson Company
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Watch La Tierra de Uva Durocs

Pathfinders, Orions, Sensations
Three Top Boars

Fannie's Orion King assisted by Uneeda Orion B, 2nd prize aged boar at State Fair, 1920, and grand champion at Glenn County Fair, 1919, and Valley View's Sensation, 3rd prize junior boar pig and litter mate to 1st prize and reserve champion at State Fair, 1920, and a wonderful string of prize winning sows and gilts, including Miss Sensation, 1st sow pig and reserve champion at State Fair

C. C. ELLIS Exeter, Cal.

WHY NOT STOCKYARDS?

By A. L. Spellmeyer

CALIFORNIA has in the past boasted that the fine price it enjoyed for livestock was because California had no stockyards. California with its five cent fat cows and six cent fat steers f. o. b. ranches is not, in view of a top Eastern market at 8.50 to 9.75, boasting today.

Credits in the cattle line are at present frozen. The strongest argument any man can make for a stockyard, preferably owned and supported by associated cattle, sheep and hog men, is that such yards mean a concentration of livestock, buyers and sellers, and easier loans with a certain outlet.

We all know livestock are cheap, and that now is a great time to start into the business, if one has feed and money. We all know livestock will not continue to sell at the terrible loss prices today prevalent and that when the turn comes every man in this country will be trying to get into the livestock business. We know today a man can't get a half dozen cars of hard fed hogs in Southern California and that it will be equally as hard within a short time to get a half dozen trains of fat cattle for our city people.

Livestock will come back through the small men, and to insure the small men's interest in cattle or sheep or hogs there must be a market for their goods, not a presentation of any small lots, as exists today. Without a stockyards men have no focus; they don't know what to pay or what they can get or when they can get it.

The great argument against a stockyards is made that there will be market gluts, that when people arrive they must sell at any price given and that feed will eat them up.

You Cultivator readers know very well from the past that the California Cultivator has always been pro-producer. You know it was opposing meat packers' bad practices when such action was almost unique, and in any consideration of the stockyards question there is no hidden incentive on the part of this paper or myself personally in writing this.

This stockyard question to my mind is merely the establishment of a modern facility to promote trade. It's a question to my mind, here in California, of the small man in the livestock business. I believe our bulk meat supply of the next decade or later must come from the small men, that our farms need more cattle and that our people and communities will be more prosperous with a general diversified farm effort that must be based partly upon cattle and sheep and hogs, and that such small lots must have a ready cash market instead of being penalized as at present one to two cents or more per pound for being a small instead of a large lot. Stockyards will give the cash market.

The principal argument against a stockyards is market gluts, etc. I do not consider this point well taken. East of Los Angeles where the northern Arizona and Utah cattle would enter this market there are from Riverside to El Monte great alfalfa acreages, together with hill lands, that cattle associations could lease for holding up and resting of cattle. North of Los Angeles the San Fernando Valley offers a resting place in hill pasture and alfalfa for coast and northern cattle. Almost any place within 20 miles of Los Angeles are facilities to rest and hold up cattle for 30 days to the extent of 20,000 head if desired, at a total cost of ten cents per head per day. The least intelligent action on the part of the cattle and sheep associations would in this wonderful, snowless, all year grazing in the open country prevent any serious gluts.

The concentration of buyers and sellers would promote a competition that could certainly hurt no one, and loans would be easier when there was a definite outlet.

Kreso Dip No. 1

(STANDARDIZED)
WILL
PROTECT YOUR PROFITS
BY KEEPING
All Livestock and Poultry Healthy

Effective. Uniform. Economical.

Kills Lice, Mites and Fleas.
For Scratches, Wounds, Scab, and Common Skin Troubles.

PREVENTS HOG CHOLERA

Experiments on live hogs prove that a 2 1/2 per cent dilution of Kreso Dip No. 1 will kill virulent hog-cholera virus in 5 minutes by contact.

FREE BOOKLETS.

We will send you a booklet on the treatment of mange, eczema or pitch mange, arthritis, sore mouth, etc.
We will send you a booklet on how to build a hog wallow, which will keep hogs clean and healthy.
We will send you a booklet on how to keep your hogs free from insect parasites and disease.

WRITE FOR THEM.

Animal Industry Department of
PARKE, DAVIS & CO.
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CUT FEED BILLS

Free Information

Edwards Bros., of Alderdale Herford Farm, Mayville, Ore., saved $480.00 in 5 months by changing rations of 20 bulls to sunflower silage. Mammoth Russian Sunflowers practically equal corn silage infeeding value. All stock like sunflowers. Write for full information and free list of government bulletins telling of this wonderful new stock feed. Our new book on silos is ready now. Do you want a copy free? Address

SPAULDING LOGGING CO.
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Offers some excellent young bulls ready for service. Sired by Japs Perfection Owl. Out of cows with Register of Merit records. Also a few heifer calves.

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BREEDING DATE BOOK--FREE

We have issued a convenient little book for the keeping of breeding dates of cattle, hoping to aid the breeder and cattle owner in maintaining accurate records. We will gladly mail you a copy free if you request it. A postal will do.

CALIFORNIA BREEDERS SALES AND PEDIGREE CO.
C. L. Hughes, Sales Manager
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USE SHIRE HORSES

Breed your mares to Shire Stallions, good Shire Geldings are in demand. Get some registered Shire Mares.
Shire owners, record colts young, fees are double after one year old. Prepare Shires for fall shows, premiums are very liberal this year. For information on Shires write
W. G. Lynch, Secretary, American Shire Horse Association, Tonica, Illinois.

Pure Bred Rams and Ewes

For sale cheap. Overstocked. Large smooth frames. From the very best strains of this country and France. Immediate delivery. P. O. Address

Windell Orchards, Glenn, California
8 Miles South of Hamilton City

For Profitable Durocs

As we have sold out of bred sows and gilts, we are now offering big growthy fall pigs, either sex, at attractive prices.

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BERKSHIRES
universally recognized as the
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breed for economical pork production. Send for literature and information
Southwestern Berkshire Congress
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RAISE GUINEA PIGS FOR US.

We supply stock and buy all you raise Laboratories need thousands - big money — easy to raise
Send 25¢ for Book on
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DR. J. A. ROBERTS LABORATORIES
6634 Sunset Blvd HOLLYWOOD, CAL. — Dept CC

State Dairy Cow Competition

By Prof. F. W. Woll

List of cows producing 50 pounds of butter fat or over during June:

Adohr Stock Farms, grade Guernseys: C-269, 1,239 lbs. milk, 56.99 lbs. fat; C-115, 1,485, 51.98.

Arden Dairy, grade Holsteins: 982, 1,776 lbs. milk, 78.14 lbs. fat; 58, 1,488, 55.06; 48, 1,542, 50.89; 976, 1,176, 50.57; 203, 900, 50.40.

Anita M. Baldwin, Holsteins: Ellen Walker Hartog, 1,704 lbs. milk, 50.78 lbs. fat.

Dean Beeman, Holsteins: Jacobina, 2,168 lbs. milk, 63.74 lbs. fat; Bernice NaDean DeKol, 1,739, 61.37; Capunista, 1,824, 55.64; Bylaria, 1,518, 52.57; Jean NaDean DeKol, 1,373, 50.81.

Eug. Biondini, grade Jerseys: Twinnie, 1,334 lbs. milk, 73.10 lbs. fat; Brownie, 1,413, 71.78; Midget, 1,542, 71.70; Rosalie, 1,119, 71.17; Rachel, 1,560, 70.98; Shortie's Best, 1,205, 70.49; 1910, 1,490, 67.94; Hannah, 1,194, 64.48; 62, 1,025, 62.73.

Bonnikson Bros., Jerseys: Financial C's Loretta, 1,051 lbs. milk, 61.82 lbs. fat; Bonnie's Financial L., 845, 51.49.

N. L. Browning, Holsteins: Segis DeKol Bess, 1,919 lbs. milk, 61.21 lbs. fat.

Leo Christen, grades and Jerseys: Mama Jersey, 1,584 lbs. milk, 86.65 lbs. fat; Buttercup, 1,200, 73.08; Black Beauty, 1,560, 63.18; Young Lumpjaw, 1,869, 61.63; Blue, 1,683, 61.60; Newberg, 1,773, 57.98; Mousie, 1,119, 55.17; Roane, 1,230, 54.24; Lily, 1,311, 52.18; Daisy, 1,146, 51.34; Coaly, 1,257, 51.16.

D. F. Conant, Jerseys: Lady Kate's Rosette, 994 lbs. milk, 53.20 lbs. fat.

J. W. Coppini, Jerseys and grades: Noble's Sayda Polo, 910 lbs. milk, 67.68 lbs. fat; Lady Mc, 1,478, 65.92; Hazel Marigold of F., 1,094, 62.77; Olga Fern's Olga, 1,141, 61.26; St. Helier's Mabel Darling, 961, 58.04; Olga Fern Smith, 873, 52.03; Marigold of F., 902, 50.23.

L. A. Driver, Holsteins: Anselmo DeKol Burke, 1,879 lbs. milk, 57.13 lbs. fat; Miss Gerben Colantha F., 1,735, 56.56.

W. F. Early, grades: Rose, 1,434 lbs. milk, 71.41 lbs. fat; Little Darling, 1,160, 61.83; Butterfly, 1,374, 61.14; Little Rose, 1,601, 57.16; Humboldt Maid, 996, 56.77; Pencil, 1,316, 55.44; Roany, 1,494, 54.83; Granny, 1,428, 54.26; Cripple, 1,140, 53.58; Goldie, 1,128, 53.02; Novene, 1,050, 51.98; Black Ward, 1,118, 51.43; Lineback, 1,038, 51.28; Pet, 1,266, 50.77; Creamcup, 974, 50.06.

M. J. and B. A. Edwards, Holsteins: Sarcastic Dora of M., 1,686 lbs. milk, 57.32 lbs. fat.

El Mirador Dairy, grade Holsteins: 53, 1,311 lbs. milk, 59.00 lbs. fat.

J. A. Genzoli, grades: Dollie, 1,883 lbs. milk, 88.50 lbs. fat; Blue Spot, 1,586, 76.29; Jill, 1,260, 74.09; Princess, 1,226, 73.56; Fannie, 1,289, 73.47; Sarah, 1,382, 69.51, Brownie, 1,149, 67.79; Pansy, 1,268, 65.48; Baby, 1,341, 63.16; Star, 1,082, 59.51; Josie, 1,146, 59.25; Maggie, 1,010, 58.68; May, 957, 52.54.

Giacomini & Perlotti, grades: Georgie, 1,149 lbs. milk, 59.75 lbs. fat; Pearl, 1,062, 58.41; Roan, 1,086, 57.56; Gladys, 1,284, 56.50; Pearl Smith, 966, 51.20; Sassy, 1,083, 50.90; Six Teats, 900, 50.40.

Earl Graham, Holsteins and grades: Niger, 1,830 lbs. milk, 76.86 lbs. fat; Princess Maida Veeman, 2,690, 76.14; Pinkie, 1,671, 75.20; Gamma Sarcastic of L., 2,114, 74.62; Pansy, 1,605, 70.62; Hauser, 1,776, 67.49; Cora Jarie Pontiac, 1,484, 62.63; Montana, 1,449, 62.31; Valentine, 1,575, 58.28; May Walker, G. K., 1,580, 55.30; No. 5, 1,350, 54.00; Peg, 1,221, 52.50; Black Emma, 1,305, 52.20; Miss Segis Pontiac, W., 1,351, 52.15; Smithy, 1,617, 51.74; Brownie, 1,254, 51.41; Tomie, 1,329, 50.50.

W. B. Gries, grade Jerseys: Nig, 1,068 lbs. milk, 57.24 lbs. fat; Bessie, 903, 56.26; Whitie, 1,161, 55.15; Molly, 1,335, 53.80.

H. G. Gross, Jerseys: Lydia's Valentine, 948 lbs. milk, 60.67 lbs. fat; Cynthia of Butter Valley, 1,134, 53.88; Francesca of Eureka, 962, 51.30.

J. B. Harbers, grade Jerseys: Nellie, 1,110 lbs. milk, 58.50 lbs. fat; Champion, 1,044, 57.52, Polly, 1,155, 57.17; Bertha, 1,113, 55.09; Helen, 981, 53.76; Daisy, 1,029, 53.51; Clara, 870, 52.98; Olga, 855, 51.13; Edith, 996, 50.60; Coaly, 969, 50.10.

Fred Hartsook, Holsteins: Bessie Snowball De Kol, 2,463 lbs. milk, 84.46 lbs. fat; Alexandria De Kol P., 2,412, 80.09; May Altoona P., 2,137, 77.34; Segis Tubie Colantha, 2,245, 75.89; Athenia Rodwick Leucke, 2,709, 75.57; Parthenia Champion, 2,042, 74.75; Fascination De Kol II, 2,164, 73.56; Annie Langtry De Kol, 2,017, 71.21; Junette Hengerveld C., 2,488, 70.90; Parthenia Paul Segis II, 2,348, 70.68; Miss Aaggie De Kol M., 2,142, 68.12; Sarcastic Blanche C. De K., 2,206, 66.19; Miss Aaggie Ormsby S., 2,202, 62.75; Queen Canary Segis, 2,115, 61.95; Mutual De Kol Johanna, 1,759, 59.97; Beryl Mortum L. DeK., 2,253, 57.22; Dora Netherland Segis, 1,966, 56.24; Juliana Elza of Rock, 1,814, 54.42; Ciruela Carolina W. DeK., 1,966, 52.11; Rosemaines' Dora Jeeks, 1,483, 51.74.

Nate Hauck, grade Jerseys: Brindle, 2,144 lbs. milk, 91.76 lbs. fat; Red, 1,738, 78.04; Nigger, 1,557, 72.87; Speck, 1,643, 69.34; Beauty, 1,385, 62.74; Brownie, 1,307, 62.35; Bird, 1,414, 61.79; Lily, 1,295, 61.51; Slow, 1,212, 60.60; Ring, 1,313, 57.90; Strap, 1,187, 50.21.

C. D. Hayworth, Jerseys: Duchess of Ransom, 1,307 lbs. milk, 59.74 lbs. fat; Harriet of Rico Vegas, 1,291, 58.87; Lorna of Rico Vegas, 1,452, 55.76.

Chas. F. Holman, grade Holstein: 55, 1,614 lbs. milk, 56.49 lbs. fat.

A. B. Humphrey, Guernsey: Calla Grove Itchen M., 1,056 lbs. milk, 51.09 lbs. fat.

Peter Iversen, grade Jerseys: Old Jersey, 1,107 lbs. milk, 69.52 lbs. fat; Baby, 1,077, 61.28; Red, 1,191, 61.22; Poor, 1,257, 59.20; Yellow Jersey, 1,041, 58.40; Marcella, 1,137, 57.76; Kicker, 1,335, 56.50; Freddie, 1,074, 53.59; Black Jersey, 1,167, 52.52.

C. D. Kennedy, Holstein: Selma Bess DeKol, 2,641.3 lbs. milk, 68.673 lbs. fat.

Los Angeles County Farm, Holsteins and grades: Trinity, 2,156 lbs. milk, 81.49 lbs. fat; Whittier Pontiac N. IV, 1,842, 70.01; Tuolumne, 2,266, 69.33; Amador, 1,544, 55.41; Princess, 1,372, 55.17; Blossom, 1,513, 51.43.

Napa State Hospital, grade Holsteins: 651, 1,768 lbs. milk, 63.29 lbs. fat; 715, 1,814, 61.32; 663, 1,347, 51.99.

Palo Alto Stock Farm, Holsteins: Klatta Pontiac Pride, 3,652 lbs. milk, 100.06 lbs. fat; Thelma Hartog S. De Kol IV, 2,327, 75.15; Alta Pappoose, 2,133, 71.03; Alta Johanna Princess, 2,017, 67.58; Irene Segis Pontiac, 2,024, 57.07.

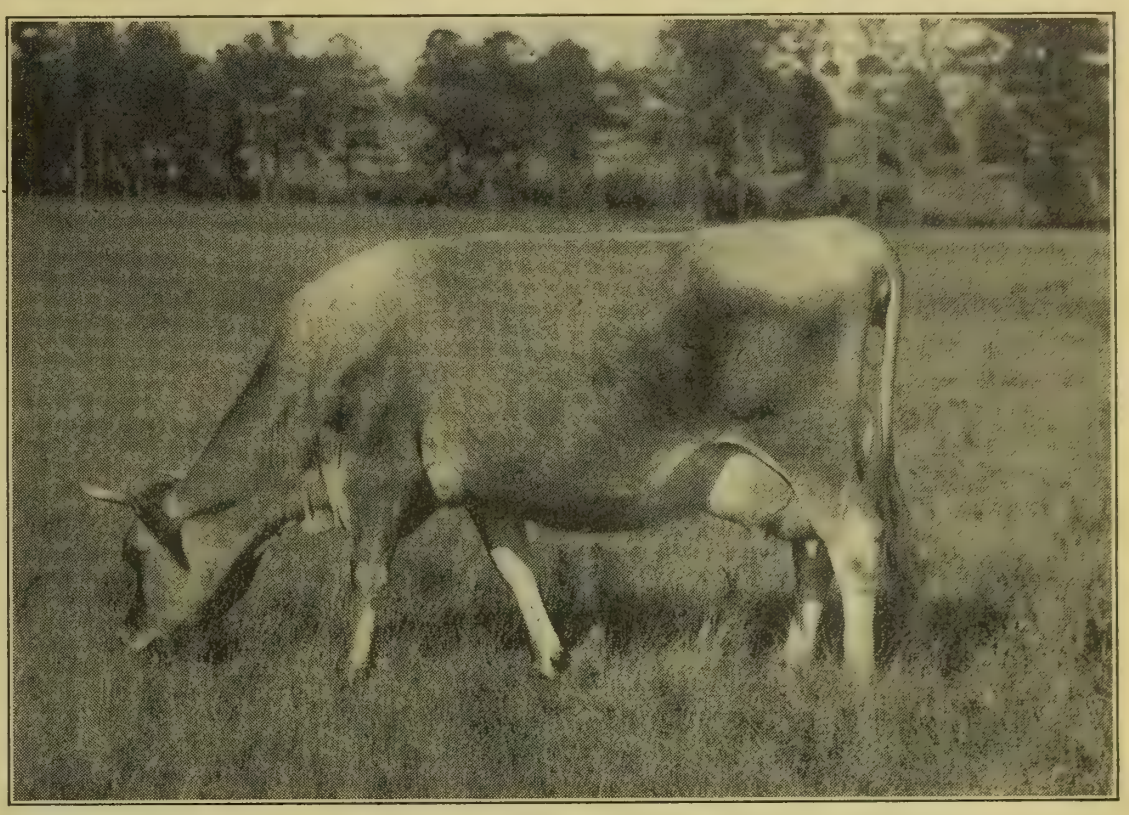
F. F. Pellissier, Holsteins and grades: 2640, 2,600 lbs. milk, 80.60 lbs. fat; 2403, 1,749, 69.96; 1772, 2,112, 63.36; Princess Tolia Walker, 1,968, 62.58; 2479, 2,073, 62.19; 1917, 1,593, 55.75; 2416, 1,734, 55.48; 2423, 1,713, 54.81; Brudorin, 1,578, 50.02.

M. L. Pontoni, grade Jerseys: Klamath,1,467 lbs. milk, 76.87 lbs. fat; Mabel, 1,386, 71.38; Rolley, 1,676, 71.23; Mousie, 1,470, 69.09; Beauty, 1,221, 68.25; White Tail, 1,334, 63.63; Berne, 1,335, 59.67; Arcata Girl, 1,239, 59.47; Meschini, 1,371, 55.39.

H. F. Richards, Jerseys: Teddy R.'s Silver Beauty, 1,341 lbs. milk, 62.64 lbs. fat; Victor's Lady Queen II, 1,293, 61.27; Teddy R.'s Poppy Girl, 885, 52.23.

Olga Saxer, Holstein: Moorland

(Continued on Page 139.)



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Kodak serves a double purpose on the farm. The pictures of the children and of the home, the Kodak story of the picnic, even the snap-shots of the pets go to make the Kodak album the most thought of book in all the house.

But there's another side to picture-making on the farm—the business side. Pictures of live stock help in making sales; pictures of the orchard and of growing crops help in keeping worth while records; pictures of the line fence and the "party ditch" prevent or settle arguments—oftentimes can prevent arguments from growing into lawsuits.

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Day Old Pullets—Here is your chance to get day old White Leghorn and Ancona chicks guaranteed at least 90 per cent pullets. We are taking orders fast for August and September delivery. We also have R. I. Red and Barred Rock chicks but do not separate the sex. All chicks are from strictly thoroughbred laying stock and are hatched right and shipped by Special Delivery Parcel Post. Send for prices and get your orders in at once. We also have a limited number of pullets from two to four months old and yearling hens. Orange County Hatchery, Santa Ana, California.

Mission—FALL CHICKS—Hatchery **White Leghorns** — Our superior laying strain means early maturity and heavy laying hatched right; priced reasonable; any quantity. Also trapnested Brown Leghorns that are winners. R. I. Reds, Barred and White Rocks, Black Minorcas. Prices run from 13 to 18 cents depending on breed and quantity. Safe delivery, parcel post or express. Write for circular at once as fall supply will soon be booked up. Mission Hatchery, Campbell, California.

S. C. White Leghorn Baby Chicks from the heaviest laying (Hoganized) stock. Safe delivery live vigorous chicks guaranteed. No money in advance; pay on delivery. Price from July 15 to August 31, $4.00 per 25, $8.00 per 50, $15.00 per 100. Special prices 500 and 1000 lots. Largest electric hatchery in the world. Established 1898. MUST HATCH INCUBATOR COMPANY, 438 Seventh Street, Petaluma, California.

Petaluma Hatchery, established 1902 by L. W. Clark. White Leghorn chicks from heavy laying free range stock during August 17c each, $8.00 per 50, $15.00 per 100, $140.00 per 1,000 prepaid. Brown Leghorns one cent more than White Leghorns. We positively guarantee safe arrival and full count of good strong chicks and no questions asked. L. W. Clark, 615 Main Street, Petaluma, California.

Fine Young King Pigeons $3 a pair. Guineas $5 a pair. Wyandotte, Partridge Rock and Leghorn eggs $3 a setting. Are disposing of some of our breeding geese; offering them at a bargain price. Yearlings $15 a pair, 2 year old birds $20 a pair. All bred from imported stock. Send for catalog. Paradise Valley Poultry Ranch, National City, California.

It's no wonder so many poultry raisers make a failure of the business. Without any knowledge of raising poultry people will branch out expecting to make a success. By putting in practice the valuable contents of POULTRY FOR PROFIT, $1.00 postpaid, success is assured in the poultry business. Cultivator Publishing Company, Los Angeles, California.

White Leghorn Baby Chicks — Walter Hogan stock. We get all our eggs from one flock of over 4,000 Walter Hogan hens that have been carefully Hoganized. Our specialty is first class White Leghorn hens that satisfy our customers. We will have chicks September 1st. Lyon Hatchery, Gardena, California.

Eggs from purebred Mammoth Bronze Turkeys, $1.00 each, or $10.00 per 11. Eggs from purebred Buff Orpingtons $3.00 per setting of 15. Incubator lots furnished reasonable. Mrs. M. L. Trewhitt, Route B, Box 47, Hanford, California.

Chicks Every Week from good layers. Fall Broilers pay. Pullets make good layers. R. I. Reds, Barred Rocks, White Leghorns. Safe arrival guaranteed. Write for circular. Stubbe Poultry Ranch & Hatchery, P. O. Box 67, Palo Alto, California.

Baby Chicks from my carefully selected, heavy laying strain of pure bred S. C. White Leghorns. Am booking orders now for August and September delivery. Write for prices. J. R. Heinrich Poultry Yards, Arroyo Grande, Cal.

I Am in the Market for 100 to 200 Black Minorca Pullets from 3 to 4 months old. I do not want just black chickens but **Black Minorcas**. J. H. Kaufman, R. 1, Box 6, Newman, California.

Baby Chix from selected, mature S. C. White Leghorn hens. Safe arrival, full count, strong chix, insured. Hawley's Hatchery & Poultry Farm. Route A Box 315A, Lodi, California.

Barred Plymouth Rocks — "Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Vodden, Los Gatos, California.

White Leghorn Baby Chix from Petaluma's heaviest producing stock. We guarantee safe arrival. Literature on request. Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

March-April Pullets—Barred Rocks, $1.50 and $2.00 each. Fairmead Poultry Farm, Fairmead, California.

White Wyandotte Cockerels for Sale—Extra fine for the price. Write at once. J. W. Nicholson, Wasco, California.

Success in business is attained by experience and knowledge. The poultry business can be made to pay by following the teachings and information contained in POULTRY FOR PROFIT, $1.00 postpaid. Cultivator Publishing Company, Los Angeles, California.

SEEDS AND PLANTS

Reliable Seeds—Ask your dealer or write for our Reliable Seeds and instructive catalog. AGGELER & MUSSER SEED COMPANY, 620 S. Spring Street. Branch—767 S. Central Avenue, Los Angeles, Cal.

R*O*S*E*S—$1.50 per dozen. Ornamental and shade trees, shrubs, palms, vines, plants, etc. Write for catalogue KAVAN NURSERIES, San Bernardino, California.

FARM LAND FOR SALE

640 Acres Stock Ranch, Well Equipped—Good buildings, all fenced and cross fenced, plenty of water and timber, fine vineyard of 2,000 vines, all kinds of fruit and nut trees; wine making outfit, blacksmith shop and tools, all farming implements; house furnished; 35 head of cattle, 50 hogs, 3 horses, hay in barn, in fact, everything needed on a ranch. A great bargain at only $25 per acre for all; move in. Part cash or trade for L. A. property, rooming or apartment house preferred. Address G. E. Williams, Route A, Box 175, Bakersfield, California.

CALIFORNIA IRRIGATED LANDS
Irrigation plus California climate eliminates chance in farming. Let us tell you about Safe Farming on Sutter Basin Irrigated Bottom Lands. Write for literature to Land Department, SUTTER BASIN COMPANY, California Fruit Building, SACRAMENTO, or to W. L. White, 509 Balboa Building, SAN FRANCISCO, or to C. D. Saunders, 509 Security Building, LOS ANGELES.

For Sale—40 acre ranch under three different irrigation systems. Two sets of buildings, would divide. Rich sandy loam suitable for alfalfa, fruit or gardening. Located in Monterey County in the Fort Romie Colony. Half mile from good grammar school; 4 miles from town. At $600 an acre. If interested inquire of owner, L. E. Pugh, R. F. D. Box 14, Soledad, California.

For Sale—160 acres 8 miles N. E. of North Bend, Oregon, on county road; $2,500.00 cash, or will give terms. For further information address: William M. Brown, 544 Union Street, Salem, Oregon.

For Sale—80 acre ranch, well improved. Good soil, excellent water right. Terms reasonable. Price $16,000. Address P. O. Box 103, Laws, California.

For Sale — Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

CATTLE

AUCTION SALE
Registered Holsteins
29 Cows—3 Bull Calves

43 head in sale, all tuberculin tested and individual certificate furnished the buyer for each cow. An exceptionally good working lot of cattle, some Eastern bred cows and from well known families. Bred to the great bred bull, Finderne Soldene Pontiac Valdesso 206927. A part of herd just fresh and milking good. Sale at ranch, 4 miles south of Corcoran, California, Wednesday, August 10th. Free lunch at noon. Terms cash. J. Leslie Barneson. Geo. W. Bell, auctioneer, Tulare. Write auctioneer for catalog at once.

Guernseys — Grape Wild Farms—Berkshires—Young bulls, from calf age up to 16 months old, of May Rose breeding and out of A. R. cows. Bred sows and gilts, service boars and pigs of both sexes for sale. Grape Wild Farms, Escalon, California. A. B. Humphrey, Proprietor.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome. Information cheerfully given. T. T. Miller, Hollister, California.

Berylwood Stock Farm—Breeders of registered Holstein cattle and Duroc-Jersey swine. Every cow an A. R. O. and T. B. tested. Bulls and females for sale. J. W. Snodgrass, Hueneme, California.

Yearly Record Holsteins—Bulls from 500 to 1,000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Some Choice registered Holstein heifers and bulls of serviceable age for sale. J. W Scudder, Escalon, California.

Three Cows and Two Heifers registered Jerseys $750. Terms. J. R. Carhart, Fullerton, California.

Winsor Ranch Jerseys—Bull calves with production behind them, at reasonable prices. BONITA, CALIFORNIA.

MACHINERY

For Sale—12 inch Krogh Cent. Pump, 25 H. P. Gas Engine, Pipe and Fittings, 16 inch Jackson, Double Suction with Pipe and Fittings. Lisle-Powers Well Drilling and Boring Outfit complete, all in fine condition. Must sell. Ada V. Barr, 735 4th Street, Woodland, California.

For Sale 40 rebuilt windmills, tanks, pumps, steel towers, cylinders, rods. Special new 1,000-gallon galv. tanks, $39.25; 2,000, $53.25; 3-in. irrigating pipe, $14.75; 4-in., $18.75; also used pipe. Why pay more? Demmitt, 120 N. Main, L. A.

For Sale—Pomona Pump, 28 head; 30 Holt tractor, Saunders plow, disk cultivator. Clarence Wagner, Terra Bella, California.

WANTED

Wanted—An experienced orchardist with some money for investment to take charge of 170 acres of young Winter Pears with other interested owners. Land near Salinas, Monterey County, on State Highway. Write California Coast Fruit Co., Salinas, California.

Wanted — Management of farm or fruit ranch by California farmer, stock and fruit grower. Has experience, has ability. Can get results. Address 224 West Lime Avenue, Monrovia, California.

Wanted To Hear from owner having farm for sale; give particulars and lowest price. John J. Black, 116th Street, Chippewa Falls, Wisconsin.

Wanted—Unsulphured dried figs and other unsulphured fruit. Write for information. Martin A. Witt, 120-122 West Ann Street, Los Angeles.

TREES

For Sale—100,000 Sour Orange Seedbed Stock. Also Washington Navel, Valencia Late Orange and Eureka Lemon trees. T. J. Walker, First National Bank Building, San Fernando, California.

For Sale—Grafted walnut trees, also citrus and deciduous trees. Order now for 1922 delivery. Get my prices. Ketscher's Nursery, 1101 E. 4th Street, Santa Ana, California. Phone 572-W.

Avocado Trees—Get your orders in now. Mathers Avocado Nursery, Ventura and Rose Streets, Pasadena, P. O. Box 586. Phone Colorado 6044.

Citrus Nurseries, Murphy Oil Company, East Whittier California. Selected stock for sale; inspection invited.

DUROC-JERSEYS

Weanling Boars and Gilts by Pathfinder Wonder (Great Wonder I Am ex an 800 lb. Pathfinder sow) for $10 each. Bred sows and gilts. Derryfield Farm, Capital National Bank Bldg., Sacramento, California.

Greenwood Farm Durocs — Moderate prices on bred gilts and weanling boars. Select individuals. Most popular breeding. H. C. Witherow, Mgr., Live Oak, Sutter County, California.

Boyanna Big Type Durocs — Breeding stock, priced right for sale. Inquiries invited. Satisfaction guaranteed. J. Boyd Harrold, Dixon, California.

Big Type Durocs—Better Durocs at right prices. Harvey M. Berglund, Dixon, California.

Winsor Ranch Durocs—The best of stock at reasonable prices. BONITA, CALIFORNIA.

BERKSHIRES

Lark Meadow Berkshires—Bred or open gilts. Bred sows. Prominent blood lines. Geo. A. Stingle, El Monte. BUY A BERKSHIRE BOAR.

Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Calac Orchards. Martinez, California.

POLAND-CHINAS

Lendorris Ranch Polands — Big type Poland Chinas of all ages for sale. The kind that makes weight quickly. Weanling boars and gilts sired by Lendorris Liberator out of Lendorris Liberty Bond sows. Now ready for delivery. W. L. Haag & Son, Hanford, California.

Registered Poland Chinas. 40 tried brood sows; 40 gilts. Some choice young boars all at reduced prices to move at once. These Polands are as good as can be had anywhere at any price. W. D. Trewhitt, Route B Box 47, Hanford, Calif.

Big Boned Poland Chinas—Bred gilts and young boars priced to sell at once. Young stock, either sex, for sale at all times. Bassett Bros., Hanford, California.

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Roofing Paper Firsts, Complete
1-Ply $1.25; 2-Ply $1.60; 3-Ply $2.20.
Best Bungalow Paint.....$2.25 a gal.
Roof Paint Special.....40c a gal.
Prompt Deliveries on Mail Orders.
AUGELUS ROOFING & PAPER CO.,
764-766-768 So. San Pedro Street,
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Save Your Roof for 15c a gallon with Asphaltoid. Direct from producer to consumer permits this low price. The finest roofing and preservative paint under sun. This is a natural product—why pay more for acid treated asphalt that eats your roof? Mail orders, barrel lots, promptly shipped. Woolner Oil Co., 4th and Commonwealth, Los Angeles.

RABBITS

Pedigreed Flemish Giants — No fancy prices. Maud Beeching, 1578 W. 46th St., Los Angeles.

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Catalogues and Booklets, office forms and correspondence stationery for the nursery, seed and florist trade; half tone cuts of many standard plants. Correspondence invited. The Kruckeberg Press, 236 Court St., Los Angeles.

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Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

Lumber, Lath, Millwork—Get our direct-to-consumer prices before building. Catalogue, plan book free. Contractor's Lumber Supply Co., 452 Lumber Exchange, Seattle, Wash.

Avoid Law Suits by having your property lines properly surveyed and established by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

GOATS

For Sale—Pure Swiss Toggenburgs, does and bucks, from finest milk strains. La Corona Goatery, R. 1-416, El Monte, California.

For Sale—7 goats for sale at a sacrifice. Three milking now. W. B. Robbins, 6534 Aldama St., Los Angeles. Telephone Garavanza 2053.

TURKEYS

Large Number of Choice Bronze Toms and hens, also geese and herding Collie Dogs. Shipped from St. Helena and San Miguel. John G. Mee, San Miguel.

Bourbon Red Turkeys, Buff Orpingtons. The Ferris Ranch, Reservoir Street, Pomona, California.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

LIVESTOCK

Shorthorns, Shropshires, Berkshires, Shetland Ponies, Bronze Turkeys, W. P. Rocks, Butte City Ranch, Box C, Butte City, Glenn County, California.

Polled Herefords and Durocs — Diablo Stock Farm, G. W. Emmons, Prop., Danville, California.

Queries

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Golden Beetles

Here are specimens of beetles having a metallic or even golden appearance. What are they?—Subscriber.

These beetles have been sent the rounds and Harry Smith of the state insectary identifies them as follows:

"This is one of the Hoplia beetles which belong to the June bug family. The larvae breed on the roots of various plants but the adults at times become quite abundant and do serious damage to various fruit trees and berries. They are rather difficult to kill with arsenical poison and unless the infestation is covering a large area the best method of handling them is to jar them off the plants in the early morning onto sheets of paper covered with crude oil or into vessels filled with oil."

Capri Figs Dropping

My capri figs dropped early this season from the tree and am left no fruit for caprifying the orchard. What is the cause?—Subscriber, San Diego.

This question was referred to G. P. Rixford of the U. S. department of agriculture, located in San Francisco and he replies:

"As to the cause of the dropping of caprifigs would say that if he refers to the overwinter, or mamme crop, which has been extensively lost during the past winter, the principal cause of dropping was injury by frost. The loss of the overwinter crop, containing insects which oviposit in the spring, or profichi crop, so reduced the number of blastophaga that only a very small portion of the spring crop was oviposited in by the insect. All such figs turn yellow and fall off. These figs contain the usual cluster of staminate flowers, but none of the galls that constitute a perfect caprifig. It is a curious fact that the presence of the larva of the insect in the saprifig is just as essential to make the caprifig hold on and mature as is the pollen in the Smyrna fig to cause it to hold on and mature. This is one of the most interesting features (so-called symbiosis) of the insect and the plant known to botanists."

Strawberries Don't Bear

I planted about 200 strawberry plants in 1919, but have never had a crop of berries. The plants are vigorous and are always covered with blossoms. I have been told that they need mates. Is this the cause of my trouble?—Subscriber, Placerville.

Presumably this is a case of lack of pollination which would be corrected by planting strawberries having flowers of other sex than those now planted. The subscriber does not give name of the variety. Of course there are many strawberries which bear complete or perfect flowers and pollination from other varieties is not needed. Planting along this row of berries a staminate variety will probably change your conditions and you will get good crops from the vigorous plants. Any nurseryman or plant dealer can tell you which of the varieties are self fertile. Most of the new varieties are self fertile and do not need this interplanting. Presumably there are nurserymen in your own town; certainly there are in Sacramento. The Valley Seed Company, Sacramento, can give you fullest information as to the proper plants.

Canada Thistle

In a recent issue someone asks how to exterminate Canada thistle. When I was a girl back in Michigan my

father put the Canada thistle patch on pasture and in three years time they were about all gone. You cannot hope to eradicate them so long as you cultivate your soil. I would say cut and burn as well as pasture them.—Mrs. Luade Miner, San Diego.

Soft Brown Scale on Fern

I am inclosing a piece of my Boston fern, which upon close inspection I find has little brown bumps on it. Is this some kind of a scale? If so, what treatment would be advisable? These bumps, which look like little ticks, are on all of the old leaves on the fern and they are white and woolly inside.—Subscriber, San Marcos.

The fern fronds were infested with soft brown scale, one of the easiest to control or exterminate. It is best to pick off and burn all old scale. If too many, cut off old fronds and burn. Then pick scale off from remainder and dip or spray in strong soap suds and repeat once each week for four weeks. Soap suds destroy the young scale and will not harm the fern. Place one hand on soil so it will not fall out and turn fern upside down to dip in basin or bucket of suds.

Globe Artichokes

What soil and culture do artichokes require? Can you take the offshoots from the old plants, and when?—Subscriber, Santa Paula.

Heavy soils, retentive of moisture, are best for artichokes. They are both thirsty and hungry at all times and may be fed heavily with barnyard manure. Offshoots may be removed at almost any time of the year, except during cold weather, and will readily root if sufficient base is taken with the young plant. The culture is not difficult as the plants escape from gardens and run wild in low damp lands.

Avocados at Belvedere

About eight months ago I planted the seed of an alligator pear in water. It has grown to the height of two feet and is now planted in a pot of soil and is still growing. Do you think it would grow if I planted it in my garden in Beldevere, Marin County (an island very warm during the day but cold at night)? Do you think it would bear fruit?—Subscriber, San Francisco.

Certainly it is worth the trial to put these trees to a test at Belvedere. The avocado has shown its liking for coast influence but not so severe a coast influence as that about San Francisco Bay. However, the eastern and southern slopes of Belvedere are wonderfully protected and it is barely possible the avocado might live, but we fear there are not enough heat units to permit the production of high grade avocado fruits. The avocado has been planted successfully from Tulare and Fresno Counties to the southern part but its best development seems to be several miles inland and yet near enough to the ocean that the greater valley heat is tempered.

STATE DAIRY COW COMPETITION

(Continued from Page 137.)

Colantha Rose, 2,677 lbs. milk, 75.22 lbs. fat.

Walter Terkelsen, grades: Christina, 1,539 lbs. milk, 84.18 lbs. fat; Laura, 1,467, 78.04; Amy, 1,077, 72.59; Annie, 1,302, 70,18; Dinah, 1,455, 66.49; Friday, 1,058, 63.06; Pale Face, 1,860, 61.75; Ethel, 1,046, 60.46; Evelyn, 1,442, 59.12; Edna, 977, 59.11; Lucy, 1,220, 56.12; Monday, 932, 54.52; Babe, 1,044, 53.14; Lena, 1,032, 52.22.

H. L. Wakeham, grade Jerseys: Jim's Wonder, 1,722 lbs. milk, 86.10 lbs. fat; Big A, 1,152, 59.90; Brown Jersey, 1,326, 57.02; Jap, 1,200, 54; Tony's Perfection, 870, 50.46.

R. H. Walrath, grades: Pansy, 1,359 lbs. milk, 57.08 lbs. fat; Minnie, 1,176, 54.10; Tilly, 1,164, 52.38.

Warne & Sons, Holsteins: Fayette Segis, 1,702 lbs. milk, 59.24 lbs. fat; Bessie Abbek. Col. II, 1,594, 51.16.

The influence of the advancing lactation of the cows and of less favorable feed conditions in many cases is seen in a somewhat smaller number of high records during the past month as compared with earlier months. One cow produced over 100 pounds butterfat during the month, viz., Kiatta Pontiac Pride, a four year old pure bred Holstein, owned by the Palo Alto Stock Farm (3,651.7 pounds milk, 100.06 pounds butterfat, average test, 2.74 per cent; distance from freshening at the beginning of the month, 31 days.).

One cow produced between 90 and 100 pounds butterfat during the month, eight produced between 80 and 90 pounds, and 38 between 70 and 80 pounds.

The California Cultivator prize for June was won by Nate Hauck of Alton for an average production by five grade Jerseys of 74.95 pounds butterfat (ranges, 62.7 to 91.8 pounds). These grades stood first among similar groups of cows in 27 different herds that competed for the Cultivator prize the past month. The average production of all but seven of these groups came above 50 pounds butterfat, the lowest producing grades averaging 27.98 pounds butterfat for the month. Grades in the herds owned by the following dairy farmers produced, on the average, over 50 pounds butterfat: N. Hauck, 74.95 pounds; W. Terkelson, 74.30; J. A. Genzoli, 71.69; M. L. Pontoni, 71.36; E. Graham, 69.69; L. Christen, 69.24; E. Biondini, 65.46; F. F. Pellissier, 62.13; P. Iversen, 61.92; W. F. Early, 61.66; H. L. Wakeham, 61.50; Los Angeles County Farm, 57.31; Arden Certified Dairy, 57.01; Giacomini and Pedrotti, 56.68; J. B. Harbers, 56.41; W. B. Gries, 54.48; Napa State Hospital, 54; and Adohr Stock Farms, 50.40. This is the third month in succession that the Cultivator prize has been won by a Humboldt County farmer. Since the competition started this prize has gone six times to Los Angeles County, three times to Humboldt County, and once to San Joaquin County.

POLAND CHINA SALE

In announcing sale of Poland Chinas Fred A. Clark of Capay Rancho, Orland, writes:

"The stock we are offering for sale needs no special recommendation as it is generally recognized that this herd is at least as good as any in the state. Special attention has been given to breeding to bring out the desirable features of the Big Type Poland China stock. The blood lines represented in this herd were founded on the best known to the breed. The young stock is sired by Yates Big Jones and Black Bob. Yates Big Jones is a grandson of F's Big Jones, the Iowa grand champion of 1919. On the dam's side he is a grandson of Longfellow Giantess and she is recognized as the largest sow of the breed. Black Bob is a grandson of Old Big Bob on his sire's side and a grandson of Big Bone Leader on his dam's side."

FAT HOG AUCTIONS

The California Farm Bureau Marketing Association auction dates for August are: Wasco, Saturday, August 6; Tulare, 9; Visalia, 10; Hanford, 11; Corcoran, 12; Turlock, 16; Merced, 17; Madera, 18; Fresno, 19; Bakersfield, 20; Tulare, 23; Visalia, 24; Hanford, 25; McFarland, 26.

California now has four cow testing associations on the 100 per cent pure bred bull list. These are: Santa Ana, San Diego. Sacramento-Yolo and Kings Counties.

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Examine your shingle roofs *now*. Last winter was one of the heaviest in the experience of the Pacific Coast. Your shingles need attention. Put them in condition to stand up under next winter's weather. An application of Oronite Shingle Oil *now* will save your roof and help save your building.

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ORONITE *means* QUALITY

HOUSEHOLD QUERIES

(Continued from Page 132.)

the kitchen it would be fine but doubtless more comfortable if covered with linoleum. Nothing could be better for all the porches, though on the front porch a cheerier effect would be secured through liberal use of rugs. However, this is a question we will pass on to our subscribers and we will appreciate very much information from those who have tried concrete floors.

HINTS FROM HOUSEKEEPERS

Steam Pressure Cooker

A Stanislaus County subscriber recently called at the Cultivator office, told us she liked us and the paper in general and the household page in particular, but wouldn't we please boost the pressure cooker. She has one; several of her neighbors have them; several more are going to have them; and they are all double-dyed enthusiasts over the work saved, the time saved, the fuel saved, the heat and worry saved by the use of the steam pressure cooker. They use them for quick meals and, best of all, they say, for canning.

In compliance with our subscriber's suggestion we call attention to Mr. Cruess' article in this issue on canning meats and vegetables. Note in the tables he gives exact time required for canning each article under certain steam pressure. Note that he says of pressure cookers: "Use these if possible for vegetables and meats in preference to an open boiler." * * * "Pressure sterilizers only should be used for high altitudes for vegetables and meats."

Below we give two recipes which will show how time may be saved in preparing foods which require long slow cooking—according to old time ideas.

New England Boiled Dinner

Ready to serve after 10 to 15 minutes pressure, according to size of vegetables.

Put one-half cup of water and four or five slices of bacon in bottom of cooker, add one head of cabbage cut in eighths, four medium sized turnips, two or three carrots cut in two inch lengths, four onions and four medium sized potatoes. Season to taste. Cook at 20 pounds pressure 12 minutes. Open pet cock outside to keep odors out of house. Serve on large platter garnished with pickled beets. Save liquid for vegetable soup stock.

Chicken With Rice

Singe, draw and cut one fowl into neat joints; season with salt and pepper. In the cooker melt four tablespoonfuls of butter, add four tablespoonfuls of finely chopped onions, pieces of chicken, and fry with cover off cooker until lightly browned. Add one cupful each of hot stock or water and stewed tomatoes, one green pepper chopped, one-half teaspoon of salt and a little celery salt. Put cover on cooker and cook 30 minutes under 20 pounds pressure. Release steam carefully. Serve chicken in a border of hot boiled rice or barley, pour sauce over and garnish with parsley.

Watermelon Sweet Pickles

I am sending recipe for watermelon sweet pickles which I think excellent:

Peel the rind and cut up in squares or any desired shape, place in earthen jars and pour enough boiling vinegar over to cover, drain second and third day, let vinegar come to a boil and pour over again. On fourth day drain, throw away the vinegar. Weigh your fruit and to 5 pounds of watermelon rind use 3 pounds sugar and enough vinegar to cook fruit in. Add a few whole spice cloves and stick cinnamon, let cook until transparent, then put fruit in jars and boil syrup down until just enough to cover. Put away and they are ready for use.—Mrs. Geo. S. Hewett, Corning.

Stating it differently, the repressionist tries to control his passions, desires and appetites and makes these his servants. The expressionist conscientiously and consistently trains his passions, desires and appetites to control his own actions—and becomes the servant.—Kansas Industrialist.

Why Do Turkeys Die?

By Jean A. Koethen

WILL some turkey raiser kindly give me advice on the following," writes a Whittier subscriber. "I have lost many young turkeys between two and four weeks old. They eat well and seem well until about 24 hours before they die. In some cases there are slight indications of white diarrhea, never any other sign of illness. They have green range in favorable weather, have at all times absolutely clean, dry, disinfected quarters with abundance of fresh air, have never been out in the rain or dampness nor been infested with lice or mites. When shut in because of rain they have had ample room. Clean, fresh water was before them constantly, also grit, charcoal and sour milk. Their feed consisted of hard boiled eggs, young onions, wheat flakes and charcoal, all ground together and sprinkled over with fine grit. This was fed three times daily on clean boards. When crops began to feel full all food was removed. In an hour or two they had lettuce heads to tear up. Sometimes the 15 poults ate as many as five lettuce heads in a day. Dissection showed the intestines of the dead poults, including appendix, hard and bony and containing a little offensive whitish substance, the liver sometimes full of sores, sometimes normal, other organs normal. During the rains the floor of their house was kept covered with clean, dry barley straw, and I have many times drawn from their mouths long straws that they had partly swallowed. Could swallowing straws like these have caused the trouble?"

This complaint voices the perplexity of nearly every man and woman who ever tries to raise turkeys. These turkeys died as 19 out of 20 of the little turkeys that drop off the first two months die, in spite of the most exacting care and with very slight symptoms of illness. Sometimes they are well at night and gone in the morning. Sometimes they are droopy in the morning and we find their lifeless bodies before night. The older they are the longer they live, but as a rule those less than a month old go very quickly. Why? The question has not been finally nor fully answered.

What Is Blackhead?

This much we do know, that almost without exception our little turkeys are victims of the disease known as blackhead because of the darkening of the head in some but by no means all cases. This disease has been the scourge of the turkey tribe the country over, starting in the East and working gradually westward. At first it was believed to be contagious, but that theory seems to have been finally disproven. Dr. Philip Hadley of the Rhode Island station, who has done more careful and exhaustive work than any other scientist in investigating this disease, said in an article published last year: "The writer does not know of a carefully controlled experiment in which it has ever been conclusively demonstrated that blackhead has been produced in healthy flocks by the introduction of infected birds. During one year of experimental work in the field the writer made it a point of removing the ceca and livers of poults which died of blackhead, chopping them up in a meat cutter and feeding them en masse to other poults as a partial substitute for beef scrap. The mortality from blackhead in the fed group and in the control group was essentially the same. Most of the poults died after several weeks with gape worm infection and with no sign of pathologic changes in either ceca or liver. The writer would have no apprehension in feeding to "healthy" poults any reasonable amount of pathologic material from blackhead cases, provided it were done in such a way as not to upset the normal digestive equilibrium and not to introduce pathogenic bacteria nor bacterial toxins."

The blackhead germ, which bears the name Trichomonas, is found, Dr. Hadley says, in the intestinal contents of nearly all animals. Ordinarily it remains in the intestinal tract and does no harm. It is only when it invades the deeper tissues that it is deadly. The question scientists are trying to answer is what causes the germ to depart from its ordinary peaceful career and become the invader and devastator of liver and intestinal walls.

Diarrhea the Beginning

Diarrhea is always, or almost always, one of the first symptoms of blackhead. The question is are the germs (scientifically called flagellates) which are always found in great numbers in this diarrheal condition, the cause of the diarrhea, or are they its result? Dr. Hadley believes the diarrhea is the primary condition and the increase in number of parasites secondary. In other words, whatever causes diarrhea is likely to cause rapid multiplication of the blackhead parasite with consequent weakness and death.

Now we are getting so close we can almost put our finger on the cause of blackhead. What causes diarrhea in little turkeys? "Indigestion," say we all of us with one voice.

And what causes indigestion? Ah, there we have it. What causes indigestion in little children- Overeating; irregular eating; improper food; lack of sufficient food; chill. And these are exactly the causes of indigestion and diarrhea in poults.

An Evasive Parasite

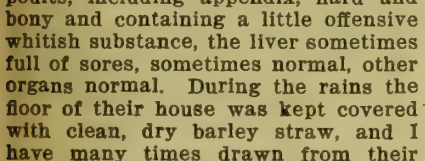
Whenever we can fully determine just what feed and what amount of it can be fed and under what conditions without causing indigestion we shall have conquered the blackhead germ. The difficulty is that turkeys, like children, are not all alike in their powers of resistance. Some have stronger digestions than others and so we must keep searching for the

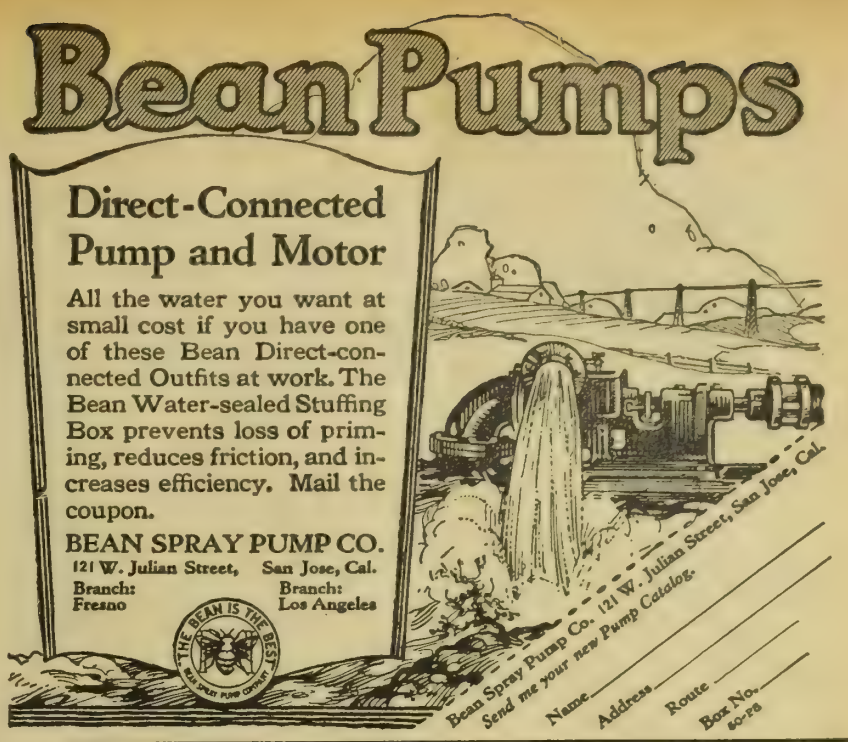
(Continued on Page 143.)

POULTRYMAN'S CALENDAR—AUGUST, THE VACATION MONTH

The poultryman never does get a real vacation. If he slips away from his cares for a few days he still keeps their crows and cackles in his ears and wonders whether Mother will remember to let out those broodies or Bob will paint the roosts after he cleans the droppingsboards. Two weeks with all his work behind him is impossible. How can he help reading the produce quotations or talking shop with the chicken farmers along his route of travel?

But it is seldom the poultryman can get two weeks off under any circumstances. The demands of the hennery are too exacting. Mother and the boys may do the feeding and cleaning, but will they notice which hens are beginning to drop feathers? Will they spot that slacker that loafs on the roost or remove the hen whose comb is wilting? And suppose they render perfect attendance to these exacting ladies, who is going vacationing with father? A lot of fun he has, leaving the folks home and going off by himself. You can take a baby along; you can even carry the goat on the running board; but hens do not go visiting. That is the dark side of poultry husbandry.

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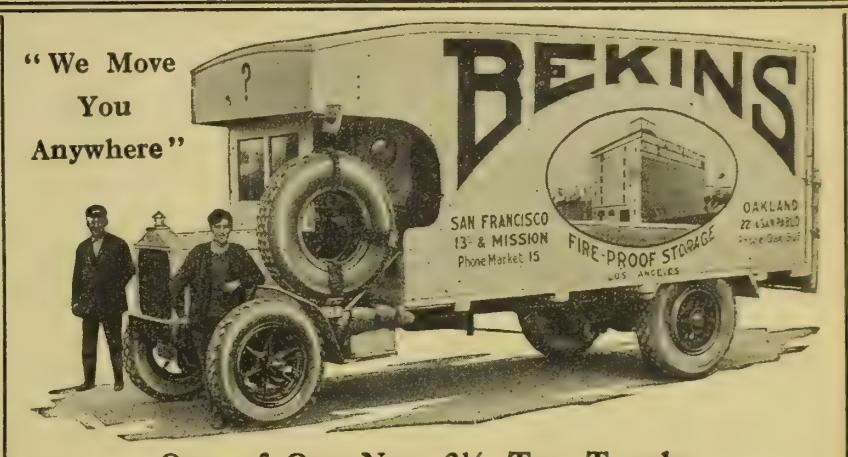
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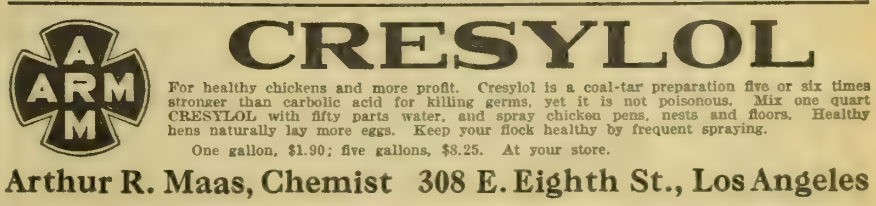
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Los Angeles Markets

Los Angeles, August 3, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price 45 cents.

Prices Creamery Extras last week:

July	28	29	30	Aug. 1	2	3
'21 ...	45	45	45	45	45	45

CHEESE

Brokers' prices:
California flats, 22@24.

EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 40; case count, 38; pullets, 35; pewee pullets, 24.

Extras last week and year ago:

July	28	29	30	Aug. 1	2	3
'21 ...	38	38	39	39	40	40

POULTRY

Price to producers: Hens, 18@28; colored, 33; broilers, 29@31; roasters, 33; old roosters, 12; fryers, 27; ducks, old, 12; ducklings, Pekin, 3½ up, 30; others, 25; geese, 25; turkeys, live, young tom, 50; dr., 55; old, live, 40; dr., 44; hens, live 40; dr., 44; squabs, 45@47.

Belgian hares, live, 11@14; old 8.

LIVESTOCK

Los Angeles, Aug. 2.—Weighed and delivered off cars without food or water: Hogs, hard grain fed, 125 to 175 lbs., 11.00; 175 to 225 lbs., 11.50.

Cattle (on foot, gross weight): Steers, good, 7.00; medium, 6.50; cows, good, 5.50; medium, 5.00; bulls and stags, 3.00@3.50; calves, 125 to 150 lbs., 9.00; 175 to 225 lbs., 8.50.

Sheep: Ewes, 5.00@5.50; lambs, 8.50@9.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock August 2, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies liberal. Demand moderate, market firm. New stock: Wide range in prices, mostly 50@60 per lug, few best 65, poorer 40@45. No. 1, sacked per cwt. mostly 1.50@1.65, poorer 1.10@1.25, Bakers 2.00@2.25.

Onions: Supplies moderate, movement moderate, market steady. Stocktons: Australian Browns 90@1.00 sacked per cwt. Local: Whites 75@90, Browns 75@90 per lug.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock August 2 by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Supplies light. Demand moderate, market seady. Per lb.: Kentucky Wonders mostly 5@6 per lb. Jobbing: Mostly 4@5 per lb., poorer 3. Limas, Supplies moderate, movement slow, market weak, mostly 5½@6, poorer 4@5 per lb.

Beets: Supplies moderate, market steady. Per dozen bunches mostly 35@40.

Cabbage: Supplies light. Market steady. Per field crate 2.00@2.25, mostly 2.25.

Carrots: Supplies light, market strong. Per dozen bunches mostly 40.

Celery: Supplies liberal, market steady. Per crate 6.00, poorer 5.50.

Corn: Supplies liberal, movement slow, market weak. Local: Per lug, best mostly 60@70, poorer 40@45.

Cucumbers: Supplies liberal, movement slow, market weak. Local: Lugs mostly 45@50, poorer 35@40.

Eggplant: Supplies increasing, market steady, 7@8 per lb.

Lettuce: Supplies light, market steady, very little good stock. Local: Field crates mostly 90@1.00, poorer 75 per crate.

Peas: Supplies light, market firm, 10@12 per lb.

Peppers: Supplies heavy, market weaker. Locals: Bells mostly 10@15, fancy Chilis 7@8 per lb., few best 10.

Radishes: Supplies light, market firm, mostly 20 per dozen bunches.

Tomatoes: Supplies heavy. Demand and movement improving, market firm. Wide range in quality and condition, considerable ordinary. Local: Per lug mostly 1.10@1.25, No. 2, 50@75.

Turnips: Supply moderate. Market steady. Per dozen bunches 35@40.

FRESH FRUITS

Apples: New stock: Supplies liberal market weak, mostly 50@75, "B" Grade Gravensteins 2.65.

Cantaloupes: Supplies moderate. Demand and movement moderate, market weaker. Homegrowns, per crate mostly 2.00@2.25.

Casabas: Supplies liberal. Demand moderate, market steady, stock mostly ordinary 2@2½ per lb., few best 3 per lb., poorer low as 1½.

Figs: Supplies light. Demand and movement good, market steady. Locals: 20@25 per lb. Calimyrnas, large flats 2.25.

Grapes: Supplies liberal. Demand moderate, market weak. Wide range in quality. Per lb., Malagas, best 10, poorer 7@8 per lb., Thompson Seedless mostly 5@7, few fancy Persians 13.

Peaches: Supplies heavy. Market steady. Wide range in quality, considerable ordinary condition. Lugs, best Clings 75@90, poorer 50@60. Freestones, best 1.15@1.25, poorer 60@75.

Pears: Arrivals past 24 hours, 1 car calif Supplies liberal, market weak. Bartletts 5½@7 per lb. Other varieties 5@6 per lb.

Plums: Supplies moderate, market firm. Santa Rosas mostly 7@8 per lb. Prunes, sugar variety 4 lb., Satsuma plums 2@3 lb. Burbanks 1½@3 per lb., Wicksons 5.

Watermelons: Supplies liberal. Demand slow, market weak. Considerable ordinary condition, mostly 2@2½, few 3@3½, poorer 1½ per lb., fancy Klondikes, locals 4 per lb. Other varieties 3 per lb.

CITRUS FRUITS

Grapefruit: Suplies liberal, movement good, market firm. Local: Per box, market pack 2.50@3.00, special packed brands 3.25@3.75.

Lemons: Supplies moderate. Demand moderate, market weaker. Local: Packed box mostly 6.00@7.00, loose per box, 3.00@3.50.

Oranges: Supplies moderate. Demand active, market stronger. Valencias, best brands, all sizes 5.00@5.50, ordinary, 2.50@3.50, loose pack 1.00@1.50.

HONEY

As reported by the Bureau of Markets:
Los Angeles: Supplies of White Sage, White Orange and Light Alfalfa, heavy. Light wire inquiry. Movement very slow, market steady, little change in prices. Carloads f. o. b. usual terms at loading points: White Orange new crop 12@12½; old crop 10@11; Light Amber Alfalfa old crop 5@6, new crop 5½@6½; White Sage 12@12½. Hawaiian, no sales reported. Beeswax: Market weak, very light demand. Dealers asking 30@33 for light and 24@26 for dark. Estimate of crop unchanged from last report. Sage and Orange crop very uneven, some places normal, others practically none. Exchange expects stronger market but other brokers expect weak and dull market.

GRAIN AND FEEDS

Grain Exch. price bid August 2:
Corn: Bulk No. 2, Yellow 1.57½; No. 1, White, 1.61¼.
Milo: Eastern No. 2 bulk, 1.80; No. 3, 1.70.
Bran: Kansas, 25.50.
Barley: Carloads, 1.23¾.

HAY

Alfalfa Growers of California report:
The market for alfalfa hay developed a better undertone in the course of the week. A number of districts report stronger local demand. In the Yuma section cutting of alfalfa has come to an end for the season, practically the entire acreage being used for the production of seed; in the Hemet and a number of other districts a considerable acreage is being used in this way, which was not the case in former years. A very striking feature in the market reports from all over the country east of the Rockies and also from Europe is that all refer to the very damaging effect of the long dry and hot spell on pasture and the production of hay. One of the results has been a sharp advance in the price of bran in the East, which probably will lessen or stop the Kansas shipments of it to this state. In Wisconsin the price of hay advanced $5 to $6 a ton last week, after the publication of the state crop report on hay, which showed a reduction of a million tons.

There is a continued active and increasing demand from the orange growing districts for damaged and low grade alfalfa hay for fertilizer at about $14 per ton delivered at groves, and several round lots were sold at this price during the week. It is claimed that compared with the price of stable manure, alfalfa has a fertilizer value of about $20 a ton. There were 1,030 tons received on the Los Angeles tracks the week ending July 30, with 390 tons held over.

Prevailing prices last week f. o. b. Los Angeles:

No. 1 Dairy	19.00
Standard Alfalfa	15.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats	18.00@26.00
Barley	16.00@24.00
Alfalfa, No. 1 Dairy	20.00
Standard	16.00
Straw	8.00

CORN HARVESTER Self Gathering for cutting Corn, Cane and Kaffir Corn. Cuts and throws in piles on harvester. Man and horse cuts and shocks equal to a Corn Binder. Sold in every state. Price only $28 with fodder binder. The only self gathering corn harvester on the market, that is giving universal satisfaction.—Dexter L. Woodward, Sandy Creek, N. Y., writes; "3 years ago I purchased a Corn Harvester. Would not take 4 times the price of the machine if I could not get another one." Clarence F. Huggins, Spearmore, Okla., "Works 5 times better than I expected. Saved $40 dollars in labor this fall." Roy Apple, Farmersville, Ohio., "I have used a corn shocker, corn binder and 2 rowed machines, but your machine beats them all and takes less twine of any machine I have ever used." John F. Haag, Mayfield, Oklahoma., "Your harvester gave good satisfaction while using filling our Silo." K. F. Ruegnitz, Otis, Colo., "Just received a letter from my father saying he received the corn binder and he is cutting corn and cane now. Says it works fine and that I can sell lots of them next year." Write for free catalog showing picture of harvestor at work and testimonials.
PROCESS MFG. CO. Salina, Kansas

Big Money Boring Wells

One Man One Team

Have water on your own farm. In spare time make wells for your neighbors. It means $1000 extra in ordinary years, double that in dry years. No risk—no experience needed.

Outfits for Getting Water Anywhere

Earth augers, rock drills and combined machines. Engine or horse power. *Write for easy terms and free catalog.*

LISTER MFG. COMPANY
Box 716 Clarinda, Iowa

San Francisco Markets

San Francisco, August 1, 1921.

Quotations made daily by San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

BUTTER

Dairy Exchange quotations July 26:
Extras Choice 43½

Dairy Exchange prices extras this week and year ago:

July	28	29	30	Aug. 1	2	
'21	43½	43½	..	43½	44½	
'20	..	59	..	..	..	

CHEESE

Dairy Exchange quotations:

Jack, full cream, street prices	14½@16
Oregon, Y. A.	25
Oregon Trips	21
Cal. Flats	23½
Cal. Y. A.	23

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases, July 19:

Extras	46
Extra Firsts	44
Extra Pullets	36½
Pullets Extra Firsts	34
Undersized	25½

Prices Extras last wk. & yr. ago:

July ..	28	29	30	Aug. 1	2	
'21	44	44½	..	46	47	
'20	..	58	..	..	..	

LIVESTOCK

California Farm Bureau Association:

No. Hogs	Ave. Wt.	Dock	Dock	Price	Price
Tulare, July 26					
96	175		...		$13.75
62	150		...		12.55
13	122		...		12.05
10	230		...		11.55
15	323	160		8.35	
2	365	290		5.35	
Total 2 cars, 24 consignors, $4,360.47.					
Visalia, July 27					
84	172	60		12.85	
37	186	150		11.65	
21	197	...		11.15	
15	285	180		8.65	
Total 1 car, 12 consignors, $3,460.34.					
Hanford, July 28					
70	171	...		12.30	
95	160	...		12.00	
10	212	...		11.80	
50	151	...		11.65	
25	106	...		11.00	
9	273	...		10.30	
30	313	370		6.75	
1	320	130		5.00	
Total 3¼ cars, 22 consignors, $5,687.12.					
McFarland, July 29					
53	185	...		12.60	
10	152	...		12.10	
16	182	...		12.10	
1	240	...		12.10	
20	149	...		11.50	
4	302	70		9.60	
Total, 1 car, 11 consignors, $2,258.89.					

Total for the week, 7¼ cars, 69 consignors, $15,766.82.

These prices are net to the farmers, while the prices as quoted in the papers of other markets are f. o. b. packers' yards.

DRIED FRUITS

Prices have been named on peaches, figs and apricots by the associations; prune prices not yet named. Sales Manager Wallace of the California Prune and Apricot Growers writes that they will not be for three or four weeks.

Apples, 1921 (Packers' Quotations):

Choice (in 50s)	10¼
Extra choice (in 50s)	10½

Apricots, 1921 (California Prune and Apricot Growers) Bulk Basis:

	Sun-sweet	San Joaquin
Standard	12	10½
Choice	16	13½
Extra Choice	17	14½
Fancy	19	15½
Extra Fancy	21	....

Peaches, 1921 (Cal. Peach and Fig Growers), Aug.-Sept.-Oct. shipment, guaranteed to Jan. 1:

	Yellow	Muir
Slabs (in 50s)	8¾	....
Standard (in 50s)	9	9¼
Choice (in 50s)	9½	....
Fancy (in 50s)	10½	11
Extra fancy (in 50s)	11½	12
Practically Peeled—		
Standard (in 50s)	10	10¼
Choice (in 50s)	10½	....
Fancy (in 50s)	11½	12
Extra fancy (in 50s)	12½	13
Cartons, 30 11-oz., per case		3.10
Cartons, 60 11-oz., per case		6.00
Cartons, 24 2-lb., per case		6.50
Carton, 10 5-lb., per case		6.60

Figs, 1921 (Cal. Peach and Fig Growers), Sept.-Oct. shipment, guaranteed to Jan. 1:

White—	
Standard (in 50s)	6½
Choice (in 50s)	8
Fancy (in 50s)	10½
Bricks, 12 No. 10s	1.10
Bricks, 24 No. 8s	1.80
Bricks, 50 No. 6s	2.80
Bricks, 70 No. 4s	2.95
Layers, 10-lb., 4-row	1.60
Layers, 10-lb., 5-row	1.40
Calimyrna—	
Standard (in 50s)	7½
Choice (in 50s)	10½
Fancy (in 50s)	13
Bricks, 24 No. 8s	2.05
Layers, 10-lb., 6-row	1.90
Black—	
Standard (in 50s)	6
Choice (in 50s)	8
Fancy (in 50s)	11

Prunes, 1921 (Packers Quotations):

Size	Basis Price	Per lb. in 25-lb. Boxes
30-40s	8½@ 8¾	12½@12½
40-50s	7 @ 7¼	10¼@10½
50-60s	5½@ 5¾	8¼@ 8½
60-70s	4¾@ 5	7 @ 7¼
70-80s	4½@ 5	7 @ 7¼
70-80s	4½@ 4¾	6¼@ 6½
80-90s	4¼@ 4½	5½@ 5¾
90-100s	4¼@ 4½	5 @ 5¼

Raisins, 1920 (Cal. Assoc. Raisin Co.):

Prices on the unsold portion of the 1920 raisin crop, effective August 1 to September 10, announced by California Associated Raisin Company at Fresno. It was announced further that opening prices on the 1921 season crop will be at least one-half cent a pound higher.

Muscats, Sun Maid seeded, 36-15 ounce to case, 14 cents a carton.

Sun Maid bakers, bulk seeded in 25 pound cases, 12½ cents a pound.

Sun Maid, one crown loose in 25 pound cases, 13 cents a pound.

Thompsons—Sun Maid, bulk in 25 pound cases, recleaned, 13½ cents a pound.

Sun Maid bakers, in 25 pound cases, 14 cents a pound.

Sultanas, bulk, in 25 pound cases, recleaned, 13 cents a pound.

Bleached Thompsons—Soda Thompsons, in 25 pound cases, 15 cents a pound.

Oil dipped Thompsons, in 25 pound cases, 15 cents a pound.

Sultanas, soda dipped, in 25 pound cases, 14½ cents a pound.

Oil dipped in 25 pound cases, 14½ cents a pound.

Layers, three crown, 20 pound boxes, $2.90 a case; ten pound boxes, $1.50 a case; five pound boxes, 80 cents a case.

All prices are quoted f. o. b. Pacific Coast mail points on regular California dried fruit contract terms.

BEANS

Below California Bean Growers Association shippers prices choice recleaned:

Large Whites	4.15
Small Whites	3.65
Pinks	6.50
Mexican Reds	8.00
Red Kidney	9.75
Henderson Bush	4.10
Cranberries	5.40
Bayos	10.50
Blackeyes	8.00

HAY AND FEED

Alfalfa Growers of California state that prevailing prices f. o. b. S. F. are:

No. 1 Dairy	15.00
Standard	14.00

Under date of July 30, A. W. Scott Co. says:

Receipts the past week were 3,037 tons as compared with 1,706 of last week. The bulk has come by water. Alfalfa has dropped one step lower. Mill feeds are dull and inactive.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers charges of switching, cartage, commission and handling expenses must be added according to conditions)

Wheat Hay, No. 1	15.00@18.00
Wheat Hay, fair grade	13.00@15.00
Tame Oat Hay	12.00@15.00
Wild Oat Hay, new crop	10.00@12.00
Barley Hay	10.00@12.00
Alfalfa Hay, 2nd and 3rd cutting	12.00@14.00
Alfalfa Hay, 1st cutting	9.00@11.00
Stock Hay	8.00@10.00
Barley, Ground	31.00@33.00
Barley, Rolled	27.00@28.00
Oats, Rolled Feed	32.00@35.00
Bran and Millrun	33.00@35.00
Middlings	46.00@49.00
Linseed Meal	36.00@38.00
Coco Meal	22.00@25.00
Alfalfa Meal	22.00@24.00
Cottonseed Meal	35.00@40.00
Sugar Beet Pulp	32.00
Molasses, Tanks	21.00
Molasses, Bbl.	25.00
Milo	40.00@45.00
Corn Meal and Cracked Corn	40.00@43.00
Scratch Feed	46.00@49.00

GRAIN

Wheat: Milling, 1.90@1.97½; feed, 1.90@2.00.

Barley: Feed, 1.15@1.20; shipping, 1.25@1.35.

Oats: Red Feed, 1.20@1.30.

Corn: California yellow, 1.50@1.60; white Egyptian, 2.20@2.30 per cental; California red milo, 2.00@2.10; Eastern red milo, 1.85@1.95; Eastern kafir, 1.75@1.80.

La Habra Heights—3600 Acres

Ideal for avocado, citrus and winter vegetable growing; protected from wind and frost, good water, beautiful homesites, and Hacienda Country Club in this property. Adjoining and higher than La Habra and East Whittier Districts. Any acreage desired. Prices and terms reasonable.

We also specialize in choice Southern California Orange, Lemon and Walnut Groves.

Edwin G. Hart

Main 2606 727-31 Van Nuys Building Los Angeles

Exclusive Agent for North Whittier Heights

JACKSON'S IFFY Bleach will clean your Straw Hat in 10 minutes. Removes Sunburn, Restores Panama and Straw Hats to natural color. No experience necessary. Trial package postpaid 50c—enough for 4 hats.

Jackson Laboratory Dept. 49. 516 S. Rampart St., LOS ANGELES

Citrus Markets

Los Angeles, August 3, 1921.

Valencias are meeting with royal reception, auction prices holding around $6 and $7, scarcely ever a sale as low as $5, and occasionally prices are named close up to the $9 mark.

Lemons are still holding up in fine condition, all offerings being quickly cleaned up at price which is satisfactory, though there has been a slight shading in quotations.

Shipments

Shipments of citrus fruits to date since November 1, 1920, Southern California: Oranges 33,121 cars; lemons, 9,540; total, 42,661. To same date last season: Oranges, 26,186; lemons, 6,649; total, 32,835.

From Central California to date this season: Oranges, 6,640; lemons, 212; total, 6,852. To same date last season: Oranges, 5,377; lemons, 289; total, 5,666. From Northern California to date this season: Oranges, 305; lemons, 5; total, 310. To same date last season: Oranges, 261; lemons, 22; total, 283.

DELICIOUS AND REFRESHING
AS the dance brings thirst Coca-Cola brings refreshment.
THE COCA-COLA COMPANY
Atlanta, Ga.
429F

Don't Fail to Attend the
California State Fair
Sacramento, Sept. 3-11, 1921

Best of all the state gathered for enlightenment and entertainment. The big annual exposition covering Horticulture, Agriculture, Mining, Livestock, Poultry, Manufacturing, Education, Natural Resources, etc.

A complete display of the products and progress of the Golden State.
$100,000.00 in premiums and purses.
Fast harness and running races daily.
The greatest livestock show in the West.
Big "Power on the Farm" exhibit.
Pacific Coast Invitational Track and Field Championships.

The One Big Week of all the Year
EXCURSION RATES ON ALL RAILROADS
Send for Premium List and detailed Information
H. A. JASTRO, President
CHAS. W. PAINE, Sec.-Mgr.

$12.00 for 100 lbs. DELIVERED to your R.R. Station
POISONED BARLEY for Squirrels
GUARANTEED to be strictly GOVERNMENT FORMULA
ORTHO BRAND
CALIFORNIA SPRAY-CHEMICAL COMPANY
WATSONVILLE CALIFORNIA

Ready For Your
VACATION?
May We Help You With Your Plans?

The Agent of the Pacific Electric Railway nearest you has, or will procure for you information of any one or all of the fifty or more Mountain Camps or Resorts reached by our lines or through its connections, and to most of them he can ticket you through.

The resorts of the Sierra Madre, San Bernardino and San Jacinto Mountains are not surpassed anywhere for beauty, comfort and reasonableness of charges; in fact, you lose none of the vacation joys and save money by visiting those near at home. Investigate them.

Pacific Electric Railway

AT THE AUCTIONS

July 28

Boston: 7 or., 4 lem. Val. 3.00-6.75, lem. 6.65-8.65, grapefruit 3.60-4.60.
Pittsburg: 3 or., 4 lem. Val. 4.90-5.70, lem. 1.95-7.10.
Philadelphia: 6 or., 4 lem. Val. 3.80-6.90, St. Mike 2.70-3.40, grapefruit 3.05, lem. 4.15-8.80.
New York: 20 or., 3 mixed. Val. 4.60-7.40, St. Mike 3.95-4.50, grapefruit 3.30.
St. Louis: 1 or., 3 lem. Val. 4.45-5.10, lem. 4.95-8.50.

August 1

New York: 25 or., 1 grapefruit, 12 lem. Val. 5.75-8.30, grapefruit 2.95-4.05, lem. 3.80-5.90.
Boston: 10 or., 5 lem. Val. 4.90-6.45, grapefruit halves 1.40-1.60, lem. 6.00-8.30.
St. Louis: 2 or., 3 lem. Val. 3.50-4.75, lem. 5.30-7.60.

August 2

New York: 24 or., 4 mixed, 7 lem. Val. 4.85-8.20, grapefruit 2.10-3.70, lem. 3.90-5.00.
Boston: 8 or., 5 lem. Val. 4.60-7.05, grapefruit 5.05, lem. 5.45-8.00..
Philadelphia: 3 or., 5 lem. Val. 5.50-6.40, lem. 3.90-5.75.
Pittsburg: 3 or., 2 lem. Val. 5.05-5.85, lem. 4.80-6.40.
St. Louis: 1 or., 3 lem. Val. 5.05-5.50, lem. 5.10-8.90.

WHY DO TURKEYS DIE?

(Continued from Page 141.)

happy mean in feeding which will not overfeed one while it starves another.

At the Rhode Island station it was thought at one time that letting the little birds eat two or three minutes and no more solved the problem. We know now that it is quite as easy to underfeed as to overfeed. When we say "Keep them hungry" we do not mean "Starve them." There is a difference.

It seems quite evident that amount of food is more important than kind. Rolled oats, hard boiled egg, stale bread, cottage cheese, clabbered milk, onions and other greens are all good. One breeder uses nothing but johnny-cake and egg and greens the first two months. Another feeds egg, bread and greens. Another uses no egg, but cottage cheese. And they all have about the same success. Sometimes their poults die and sometimes they live.

One breeder I visited this spring believes that warmth is more important than feed. He cuts the ration in two, he says, if the turkeys come in to supper chilly. Another says his poults do much better in a brooder than with either a turkey or chicken mother because the hens do not keep them warm enough in the early morning.

Ipecac a Preventive

The preventive treatment announced this spring by Drs. H. M. and Paul Wegeforth of San Diego has attracted much attention and may prove the ultimate solution of this vexed problem. They have discovered after considerable experimentation on their ranch at National City that fluid extract of ipecac, which has been found a valuable remedy in human enteritis, prevents the development of the blackhead parasite. The sick birds are given 10 drops three times a day for three days, then 10 drops twice a day for three days, then 10 drops once a day for three days. By this time they are ready to be returned to the flock.

To prevent the disease in little turkeys powdered ipecac is fed in the food, one teaspoon twice a week being the dosage for 20 poults, without regard to size. Over 100 birds hatched this season in one hatch were reared without a single case of blackhead under this treatment, while a nearby breeder lost 320 out of 400 hatched.

It is unfortunate if we must resort to dosing to prevent this devastating disease, but dosing is better than loss. In time we shall no doubt learn to conquer it by natural means, for the turkey is too great a gift to civilization to be utterly lost, but till we have found the better way, let us use ipecac.

Poultry Queries

(Conducted by Jean A. Koethen)

Black Orpingtons Wanted

Will you please tell me where I can buy some Black Orpington chicks?—Subscriber, Campo.

If any Cultivator reader has stock of this variety he would do well to make it known. The advertising columns of the paper are searched every week by prospective purchasers of good stock.

Caponizing

Will you inform me where I can get lessons in caponizing, and which is the best market for capons, Los Angeles or San Francisco. — Subscriber, Oak Knoll.

I have mailed you the address of a party who I understand gives instructions in caponizing. There is a good market for capons in both Los Angeles and San Francisco without marked difference in prices.

LET'S PULL TOGETHER

(Continued from Page 123.)

$8.80, that is paid by a Ford runabout, a 22 passenger White bus pays the same license fee that a Studebaker five passenger touring car pays, $11.60, and a four ton Moreland solid tired truck pays $29.40 as against an average fee for the same capacity truck for the entire United States of $45.50. The average license fee paid per car in California is $1.32 less than the average for the United States, yet we give more highway service than most other states.

"The clubs claim to have saved the automobile and truck owners $11,000,000 during the next two years, but if they have saved these owners, they have deprived the highways of that sum. Whatever improvement is now necessary has been occasioned almost entirely through use of our highways by the motor vehicles of the persons who would have met the increased tax. All the people of California are providing the funds for original construction and it is only right that those who now make use of highways for business or pleasure should pro-rate the cost of such maintenance, reconstruction and improvement as is made necessary by such use."

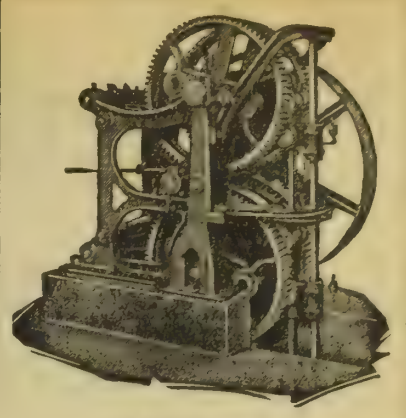
COMING EVENTS

Eden Township Farm Products Show, Hayward, August 11-14.
North of Bay Counties Fair, Santa Rosa, August 24-28.
Downey Community Fair, Downey, August 25-27.
Yuba County Agricultural Fair, Browns Valley, Aug. 29-31.
Vintage Festival, St. Helena, September 3-5.
California State Fair, Sacramento, Sept. 3-11.
Fall River Fair, McArthur, September 7-9.
San Joaquin County Fair, Stockton, September 12-17.
Tulare County Livestock and Agricultural Show, Tulare, Sept. 13-17.
Humboldt County Fair, Ferndale, Sept. 13-17.
San Fernando Valley Fair and Market, San Fernando, Sept. 13-18.
Glenn County Fair, Orland, Sept. 19-24.
Kings County Fair, Hanford, Sept. 19-24.
San Diego County Fair, San Diego, Sept. 21-24.
Fresno District Fair, Fresno, Sept. 26-Oct. 1.
Orange County Fair, Huntington Beach, Sept. 28-Oct. 1.
Arbuckle Almond Show, Arbuckle, Sept. 28-Oct. 2.
Inyo County Fair, Bishop, Oct. 4-5.
National Swine Show, Springfield, Illinois, Oct. 3-8.
Ventura County Fair, Ventura, Oct. 5-8.
Shasta County Farm Bureau Fair, Anderson, October 6-8.
Southern California Fair, Riverside, Oct. 11-16.
California Association of Nurserymen Annual Convention, Exposition Park, Los Angeles, Oct. 20-22.
Date Festival, Coachella Valley, Oct. 21-23.
California National Livestock Show, San Francisco, Oct. 22-30.
Pacific International Livestock Exposition, Portland, Oregon, Nov. 5-12.
Stanislaus County Poultrymen's Association Show, Winter Garden, Dec. 4-7.

WEATHER REPORT

San Francisco, Cal., July 30, 1921.

Stations	Wk.	Season	Norm	Max.	Min.
Eureka	.00	.00	.11	60	48
Red Bluff	.00	.00	.00	100	60
Sacramento	.00	.00	.00	96	52
San Francisco	.00	.00	.01	68	50
San Jose	.00	.00	.00	82	46
Fresno	.00	.00	.00	102	62
San Luis Obispo	.44	T	.01	80	46
Los Angeles	.00	T	.01	84	61
San Diego	T	T	.44	76	64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Duplex Plunger
Deep Well Pumps
and hold down the most important item of expense in your water supply, which is the power bill.
Printed Matter for the Asking
The Pomona Mfg. Co.
POMONA, CAL.
Also Manufacturers of
Pomona Irrigation Gates and Valves

Save Your Roof
15c. a Gallon
Asphaltoid
ROOFING PAINT
Direct from producer to consumer permits this low price for our natural asphaltized roofing paint—the finest preservative and roofing paint under sun. Why pay more for an acid-treated asphalt that eats your roof? Mail orders, barrel lots, promptly shipped.
WOOLNER OIL CO.
Fourth and Commonwealth
Los Angeles. Phone 52342

Cook a Whole Meal In 30 Minutes

Use the OTTAWA Pressure Cooker and Canner and prove to your own satisfaction that cheaper meats and foods taste as tender and delicious as expensive cuts cooked the usual way. Cook a whole meal at once—meats, beans, vegetables, deserts. Does away with heat and cooking odors. Write at once for FREE BOOK and Special 10-Day Trial Offer. Fine for Canning.
OTTAWA MANUFACTURING CO.
302-A Cook Ave., OTTAWA, KANS.

Plant Winter Rhubarb
FOR PROFIT
Growers netted this year $1000 per acre. This is the best time to plant for full crop next winter and spring. We can supply plants—all sorts for large fields. Write for price list.
J. B. WAGNER
Rhubarb and Berry Specialist, Pasadena, California.

FRESNO
DUST SPRAYER
Latest Type Efficient
Durable Reliable
Write
Cushman Motor Works
844 E. Main St., Stockton

SEEDS
SEND FOR OUR CATALOG
Aggeler & Musser Seed Company
620 So. Spring Los Angeles, Cal.

Breakfast Breads

THAT ENLIVEN THE MORNING MEAL

MUFFINS, waffles, popovers, griddle cakes, piping hot biscuits—how they enliven the morning meal! Experience has shown that the most simple and efficient way of putting a batter together is to mix and sift the dry ingredients first, then mix the liquid and the well-beaten yolks of eggs, and combine mixtures. If using shortening add melted, and at the last fold in the stiffly-beaten whites of eggs.

Eggs should always be beaten separately when lightness is desired, but if time is limited it will be all right to beat the eggs together.

For waffles the iron should be well heated and brushed on both sides with melted shortening. For griddle cakes the griddle should be heated, and if not soapstone or aluminum, greased. Drop batter by spoonfuls and, when puffed and full of bubbles and cooked on the edges, it should be turned and browned on the other side. Never turn griddle cakes but once, otherwise they will be heavy. Have muffin pans hot and greased well.

Heavy pans will give much better results than tin. Fill the pans only two-thirds full, and if any are left unfilled they should be filled with water to prevent burning. Muffins and corn breads need a moderately quick oven and should bake about twenty-five minutes.

To determine the heat of the oven, an oven thermometer will be found most convenient, and will prove a preventive of many failures. Or, try this: Place a piece of white paper in the heated oven and close the door. If in three minutes the paper turns a golden brown the oven is moderately hot.

BELLE DE GRAF
Director Sperry. Domestic Science Dept., who stands sponsor for the following Sperry Standard Recipes:

Sperry Muffins

2 cups Sperry Drifted Snow Flour, 4 teaspoons of baking powder, 1 teaspoon salt, 2 tablespoons sugar, 1 egg, beaten, 1 cup milk, 2 tablespoons shortening.

Sift dry ingredients; beat egg well; add milk and dry materials, gradually beating to a smooth batter; add melted shortening last. Bake in heated, well greased muffin pans in a hot oven.

Sperry Drifted Snow Waffles

1 cup Sperry Drifted Snow Flour, 2 teaspoons baking powder, ½ teaspoon salt, 1 egg, 1 cup milk, 1 tablespoon melted butter.

Mix and sift the dry ingredients; beat yolks of eggs, add milk and combine mixtures. Add shortening, fold in the stiffly beaten whites of eggs. Bake at once on a greased, hot waffle iron.

Sperry Popovers

1 cup milk, 1 cup Sperry Drifted Snow Flour, ½ teaspoon salt, 2 eggs, 1 teaspoon melted butter.

Add Sperry Drifted Snow Flour and salt to milk and beat well with an egg beater. Then add one unbeaten egg at a time, beating thoroughly. Add melted shortening. Have iron muffin pans or custard cups very hot, grease well, pour in popover batter and bake in a medium hot oven about forty minutes.

SPERRY DRIFTED SNOW FLOUR
"A Sperry Product"

SPERRY PRODUCTS IN EVERY HOME SPERRY FLOUR

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LVII — August 13, 1921 — No. 7

Value of Livestock Shows Great Increase in Decade

THE number of California farms increased from 88,197 in 1910, to 117,670 in 1920. This has meant also material increase in the wealth of the state as is shown by the fourteenth census figures of crop production and number and value of domestic animals.

There were in the state on April 15, 1900, domestic animals to the value of $65,000,738. On April 15, 1910 their value had increased 89.3 per cent, or to $123,024,652. In the fourteenth census, or that for 1920, the time of report was changed from April 15, as in former years, to January 1. Since a great many domestic animals are born in the period between January 1 and April 15 comparison is not absolutely accurate. However, notwithstanding this handicap, California showed an increase in value of stock, from April 15, 1910 to January 1, 1920, of 66 per cent and now reports domestic animals to the farm value of $204,378,445.

The value of the annual production of the livestock industry likewise shows great increase. The value of dairy products of the entire state is given as $55,642,649. Counties producing above a million dollars are: Alameda, $1,473,896; Humboldt, $4,381,-129; Imperial, $2,315,489; Kings, $1,968,883; Los Angeles, $4,912,896; Marin, $2,665,016; Merced, $3,842,-243; Monterey, $1,817,210; Sacramento, $1,218,237; San Joaquin, $2,340,938; San Luis Obispo, $1,084,-282; Santa Clara, $1,536,935; Sonoma, $2,145,704; Stanislaus, $4,773,562; Tulare, $2,564.745.

Under dairy products the bureau considers farm value of the milk or cream as sold to distributor or to creameryman, that is, excepting in the case of butter and cheese actually made on the farm. The creamery and cheese factory products are not taken into account.

There is no report as yet given as to number of animals slaughtered or value of meat products.

The number of horses on farms totalled on January 1st, 402,407, valued at $35,416,507; mules, 63,419 valued at $7,221,930; asses and burros, 2,265, $171,-175; beef cattle, 1,229,086, $61,280,293; dairy cattle, 778,951, $59,401,153; sheep, 2,400,151, $25,906,445; goats, 115,759, $1,130,035; swine, 909,272, $13,850,907.

California's wool production for the year 1919 amounted in value to $5,762,356, while mohair was valued at $110,160.

The value of chickens and eggs produced the year preceding January 1, 1920 was $34,727,935. Sonoma County produced more than one-third of this amount. There were only four counties in the million dollar class in annual poultry production: Alameda, $1,260,047; Los Angeles, $4,624,789; San Diego, $1,373,837; Sonoma, $12,380,034.

The value of all poultry maintained on the farms of the state, however, is $15,293,570.

The value of honey and wax produced in California in the 12 months was $1,141,999. The total value of the colonies of bees was $1,469,447.

Livestock in United States

The average value of horses per head in 1920 in the entire United States was $90.13, as compared with $105.06 in 1910; the average for mules was $142.88 in 1920 and $124.80 in 1910; of cattle, $54.40 and $24.26 respectively; of sheep, $11.30 and $4.44; and of swine, $16.66 in 1920, as against $6.86 in 1910. It thus appears that while the average value per head of the several kinds of meat animals (cattle, sheep and hogs) more than doubled between 1910 and 1920, the case was quite different with draft animals, horses showing a decrease in average value and mules only a moderate increase.

The production of chicken eggs on farms in the United States in 1919 was 1,656,267,200 dozen as compared with 1,574,979,416 dozen in 1909, representing an increase of 81,287,784 dozen, or 5.2 per cent. The figures for eggs produced and chickens raised in 1919 and 1909 afford a fair basis for—(Continued on Page 159.)

Established 1877 Forty-fourth Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

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Saturday, August 13, 1921

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

If among the more than 40,000 Cultivator's weekly circulation any fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

EDITORIALETTES

An Eastern tire manufacturer is offering university scholarships for the best essays written on the subject of good roads and highway transport. This is open to high school pupils of the United States. Judges are appointed from the department of engineering, University of Maryland, from the department of commerce and from various highway associations. It is asserted these essays are creating material interest in better roads and more of them. The products of the farm go to market cheaper, in better condition and command more money over good roads than over chuck holes and ruts.

* * *

The war finance corporation announces that advances of funds already made and under contemplation total $63,471,000. Ninety-three per cent of this total covers agricultural commodities, and by far the greater proportion of this 93 per cent has been advanced on cotton, which is the nation's greatest export commodity. In addition to these advances the corporation has agreed to advance $8,500,000 to banking institutions on shipments of condensed milk; other advances or loans to be made on meat products, agricultural implements and other productions and manufactures.

* * *

"Hide and Leather," a magazine devoted to the interests of leather manufacturers, refers to "the recent effort—fortunately defeated—to put hides and skins on the dutiable list of the new tariff bill * * * alleged to have been dictated by farmers," and adds, "It was a clumsy effort and deservedly failed." Then follows a long article calling attention of the livestock man to the necessity for giving greater attention to "a certain fly which lays its eggs on the feet of cattle, etc.," and urging greater care in eradicating this pest. In other words, stop the warble fly from its attacks on animals and your cattle will have greater comfort, and we, the people who make leather will have greater profit. Of course, the idea is to divert attention from the real issue which is ruining the producer and fattening the manufacturer. So long as South American dry hides are flooded into this country at ruinous prices there is no show for American produced hides. We hope American livestock people will produce a higher quality which naturally commands a higher price, but it is maddening to have manufacturers stall off an effort to save a desperately discouraged industry.

* * *

The U. S. consul at Liverpool, England, reports: "The quality of the apples which arrived on the market has been good and the fruit inspection, both in the United States and Canada, has done much to place this trade on a more satisfactory basis." Thank you. California is doing some standardizing and shipping point inspection which makes such little compliments appreciated.

* * *

The almond growers are doing some mighty fine work before the ways and means committee. In fact, the entire agricultural committee of Californians in Washington is working to a purpose, but the almond people seemed to start under a greater handicap than some of the others. It is still sticking for 5 and 15 cent tariff protection.

* * *

Speaking of the tariff, there's the tariff on eggs, at which all east of the Rocky Mountains hold up their hands in horror because they seem to think that this country imports no eggs. If those people could be permitted to observe some of the imports through Pacific ports they would see literally thousands of carloads of eggs in various forms coming into this country from the Orient. Many are "fresh"; some are frozen; some are dried; all are of inferior qaulity; but they fill the market and supply bakers and other trades and lessen the demand for American produced food. It costs vastly less to transport these eggs from producing sections of the Orient than it does from producing sections of California to the larger Eastern consuming sections. As to producing costs over there—well, what American wants to work and compete with Chinese and Japanese?

* * *

In transportation of eggs a few experiments are being made. A few weeks ago a large steamship sailing from San Francisco to London carried a sample shipment of 50 cases of "processed" eggs. The shipment was made to test the question of whether the processing treatment will prevent eggs from absorbing odor or flavor from other products shipped in the same compartment. It costs two cents per dozen less to ship an egg from San Francisco or Los Angeles to London than it does by railroad to New York. The rate to London is five cents; to New York, seven cents.

READY FOR FAIRS

Specialists are processing fruits; the housekeepers are jamming, preserving and jellying; machinery and implement people are dusting, painting and even nickel plating; livestock breeders are grooming and training; and all agriculture is doing its prettiest to make holidays in various producing centers. We already have in hand a story of some of the things to be witnessed and heard at the state fair which will be held in Sacramento September 3 to 11. This story will be given in an issue of the Cultivator before the fair. Meantime in another column may be seen box with dates of various fairs all over California, Arizona, Washington, Oregon and other sections of the coast.

While there is much in these shows which may prove spectacular rather than educational, the general effect is for the good of agriculture. The one who receives greatest benefit is the exhibitor, for he learns the good points of his own productions. He also submits to what is sometimes merciless criticism, but he comes back another year with beneficial results from that criticism. There is no judge whose decisions are without fault, but in the main they are just, and as the decisions are rendered often with explanation of reasons for the decisions there is a wonderful lesson in them, especially for the loser.

There is sometimes complaint that agriculture is not helped as much as it would be if averages were shown rather than exceptional examples, but while an exhibit made at fairs may not be the true measure of the agriculture of a state, it is a true measure of the aspiration of the producers and therein we are all inspired to do better. For four months now fairs will be on the boards. Take advantage of them.

LEARN THE GAME

It's funny; more correctly, it's tragic, for so many people to come to California with the idea that here is the realization of their dream of "two acres and independence." The school teacher, the doctor or the banker is tired of the calling that has given him bread and butter for many years and so a California farm is desired. They come to the office of the California Cultivator and say: "I have spent my life at teaching in Connecticut; by hardest saving have arrived in California with five or six thousand dollars." (Sometimes it is only a hundred or two.) Following this statement is to be expected this question: "Where can I buy land with this money with which I may be assured of a comfortable living for myself and family for the rest of our lives?"

To the California farmer, or the Easterner who came to California a few years ago under circumstances similar to those of the inquirer, the tragic part of the story is easily imagined. To the enthusiastic reader of magazine articles and some of the books written to show how easily farming success may be achieved, we who have tried the game may sometimes appear cruel in the replies we are compelled to give to these people who know absolutely nothing of the highly specialized work they propose to take up. It is simply astounding to note the complete ignorance as to farming practice of many of these back-to-the farmers. We grant there have been cases of complete success by those who were professional people, but these successes are so rare that they should be warnings to would-be farmers. Such people should take the advice of the Colorado agricultural college which was given to a beekeeper. It was quite extended, but here is the gist of it:

"To acquire skill in manipulating bees and to learn the proper management so as to obtain maximum results, the best method is to spend a season in the apiary of an experienced beekeeper. If one contemplates making beekeeping an occupation this is to be especially desired. It is usually possible to find employment at a small wage in the apiary of a specialist for a season."

MORE AND BETTER ROADS

California producers want better roads. They have profited in quality of product and hence in greater return financially because of the roads already built. They are not patient with any campaign which may defer completion of the great system involving the expenditure of some $73,000,000 already voted and the construction of 5,500 miles of paved highway. Of this amount there have already been built approximately 3,250 miles, of which 1,800 are paved, about 700 graded, and 750 taken over from various counties have been improved under direction of the state highway commission. Practically all of these have been farm to market roads, serviceable, money saving roads. We want access to the mountains; we want scenic roads; but first we want service and economy.

The producers would like the ideal highway, the ultimate, or perfect, road, but competent engineers assert that in addition to the $73,000,000 already voted, such a system of highways would cost at least $150,000,000. Automobile club members may be able to build such a system of highways for California; the farmers are not.

In any case let's not do politics. Here is an estimate of the present effort by the editor of "Engineering and Contracting" of Chicago, in its issue of July 6:

"The automobile clubs of California continue their attacks against the California Highway Commission, in spite of the fact that their criticisms of the design of the state road were refuted by the report of the United States bureau of public roads. It would appear to a disinterested spectator that the automobile clubs are aiming at securing a new highway commission that will be subservient to their wishes. If this is brought about it will be a sorry day for California. Hitherto the highway commission has not been subservient to any class of people nor to any section of the state. It has been entirely free from political influences and it should remain free."

Notice has been served on strawberry growers on a large tract near Hayward, Alameda County, to plow fields and destroy all berry plants by October 1, to help exterminate the only strawberry weevil found in the state.

California Cultivator

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Making Quality Raisins

By Fred K. Howard

IN a previous issue of the Cultivator it was pointed out that to make quality raisins the grapes must be well grown. The other side of the story is that no matter how well grown they may be, if not properly cured, much of the possible quality is lost.

Must Contain Maximum of Sugar

When one speaks of quality in raisins the first factor which presents itself is the sugar content. Sugar is in reality the very foundation of quality. Without sugar the raisin can be considered little more than a dried grape. The reason that certain varieties are designated as raisin grapes is that these carry a larger proportion of solid matter and sugar than the so-called wine and table varieties. Within certain limits the longer grapes are left on the vines the greater will be the sugar content. The grower must know when this point is reached, when his fruit ceases to acquire added quality and begins to break down. Exhaustive tests indicate that when the average sample of grapes in the vineyard will test 24 per cent sugar the maximum of quality, commercially speaking, has been attained. At 24 per cent sugar the grape will, if it is properly handled, make a raisin of good flavor that will be meaty and carry sufficient moisture to keep it in pliable or plastic condition for a considerable time.

Saccharometer Should Be Used

One of the most useful instruments for the vineyardist is the Balling saccharometer which can be used to test the fruit before picking time. This instrument is used officially to test samples of grapes under the California standardization law to determine maturity and has proven to be of great value to the raisin grower also. The grapes are tested by placing some of the juice in a cylinder and floating the saccharometer. The figure on the spindle showing at the surface of the liquid indicates the percentage of sugar in the juice or the sugar content of the grape. Many large growers own these instruments and as they are not expensive every grape grower should have one as a part of his necessary ranch equipment.

Use Care in Picking

After the fruit has reached the proper degree of ripeness the question of picking is considered. This operation is usually left too much to the whim of the picker, and often the quality is reduced very materially by careless work. Incidentally clean trays

Well Grown Bunch of Thompson Grapes
If allowed to ripen properly will make raisins which will be a delight both to the grower and consumer.

are very important. If the trays were not cleaned in some way after the crop was harvested last fall they should by all means be washed before using. Very often a broken berry will so contaminate the wood of the tray that it becomes an infection spot for the various moulds which attack the partially dried fruit, particularly if the season should chance to be a rainy one. Prevention in this case is much more certain than attempted cure.

Encourage the pickers to place each bunch of grapes on the tray in the proper place after picking. The usual method of throwing the fruit in a pile in the center of the tray until the desired amount has been picked, and then going after the fruit with both hands, after the manner of a woman at a bargain counter, is bound to break or bruise a large percentage of the berries. This means that not only the quality is lowered but a few more infection points for mould are provided. Mouldy raisins never will be the favored fruit of the consumer.

What Kind of Trays?

The question of trays is often discussed, and each kind, paper and wood, has its enthusiastic supporters. This is true if it doesn't rain. After a good storm the wooden tray usually has all the votes. For Thompson Seedless it is probable that the paper tray is very satisfactory except in districts of doubtful drying conditions. Once wet, the paper tray is hard to handle, in fact, it is almost impossible to so handle partially cured fruit that it can be protected from unseasonable rains. The later ripening varieties should always be dried on wooden trays if it is the desire to eliminate most of the gamble from the undertaking.

How to Dry

There is little to tell about and everything in the technique of properly curing raisins. It is impossible to lay down any rules which will hold good under all conditions. One season Thompsons may require five days in the sun before turning, and at other times they may require twice that much time. This is something which must be left entirely to the judgment of the vineyardist who automatically becomes a weather man and a chemist. The usual practice is to tilt the trays slightly to get the rays of the sun more directly on the fruit. In some cases growers feel that they are amply repaid for the extra time of turning the trays end for end after they have been in the sun for a few days. This operation insures direct exposure from at least two angles. Generally speaking the grapes should no longer have the appearance of green on the exposed side when they are turned, and they need not remain long in the sun after turning but may be stacked and allowed to finish curing in this manner.

The Purpose of the Sweat Box

The best cured raisins will not be uniform in moisture content, even with the greatest care on the part of the grower. Some of the bunches will be bone dry while other bunches will be much too wet to keep well. The purpose of the sweat box is to equalize the moisture content of the raisins it contains. This is not quickly done and is in reality a very essential process in curing a quality crop. When boxing the fruit should not be crushed into the box or walked on with the feet in an effort to crowd so many raisins into one box that it will take the place of two. It should, however, be firmly packed into the box and allowed to go through the sweating process. The trick of curing raisins is in not letting them get too dry and in getting them just dry enough. The trick is much more easily performed if the fruit carries the maximum amount of sugar, and after all the sugar question is perhaps the most important.

In a future issue of the Cultivator we will discuss the making of hand sorted layers, soda and oil dipping, sulphur bleaching and dehydration of raisins.

California's Biggest Pear Day

By Ernest Braunton

THE Antelope Valley residents are the only people in the state who seem to have 'pep' enough to stage a pear day," said Frank T. Swett, president of the California Pear Growers Association. "I think I shall have to suggest such a day to other sections. Of course you have the best pears in the world. I hear a similar claim when I go up to far away Lake County, and it is echoed when I get back home to Contra Costa County. We all have the best."

August 6, 1921, certainly was the state's biggest pear day, for nearly 1,000 gathered at Little Rock in the Antelope Valley to eat pear pie, ice cream, etc., listen to the valley's best boosters and visit the truly wondrous pear orchards, in one of the best of which the meeting was held, though the building was the district association's packing house.

The forenoon was spent in friendly visiting, culminating in a splendid free lunch supplied by the Antelope Valley Fruit Growers Association. The "piece de resistance" was pear pie, and plenty of it. The guest of honor was Amason Martin, "83 years young," the pioneer grower of the valley, who through many discouragements pointed the way and finally landed, with all who came after, in the present day prosperity of this famous pear growing district.

F. W. Lancaster was chairman of the day, and he is some booster. To hear him tell it the home of Opportunity lies in the Antelope Valley. After his ammunition gave out he introduced Farm Advisor Hodgson, who gave a geological history of the valley, seeking to prove that nature and the elements have been making soil ready for the pear grower for many thousands of years. "The altitude, heat, atmospheric humidity and other factors have conspired to make this valley second to none in the world for the production of pears. One marked feature of the local pears is their comparative seedlessness, for there is no cross pollination and here none is needed. The cost of good pear land here is $300 per acre; establishing an orchard, $86; cost of care to first crop, $34. In the state at large the land costs $600 per acre and the cost of establishing is much greater so that at maturity the figures run close to $1,000 an acre. The average production here is also better than the state's average."

The next speaker was President Swett, who told of the great advertising campaign waged in the East, for which the grower contributes five cents per box on his fruit. He showed some of the "ads" appearing in journals of international reputation and circulation, also some of the banners and posters on California pears supplied free to Eastern dealers. He stated that last year's pear crop for Lake County was 5,000 tons, the same for Contra Costa County, while the Antelope Valley, the infant district of the state, sent out 3,000 tons and was gaining in production more than any of them. "California's normal crop is 120,000 tons, but late frosts and rains cut down that figure for 1921 quite heavily."

Next spoke Wm. A. Brinck, district manager of the California Fruit Growers Exchange, who told funny stories and then got down to solid facts as to production and marketing, in considerable detail. He gave a report on the yield of all deciduous fruits for the present year, the financial condition of this and other countries as it affected fruit prices, and quite a mass of statistics relating to the industry. The program ended with reading, by the chairman, of a poem by Wm. C. Pechner, "the poet of the valley and its best booster." A Hawaiian orchestra kept up a steady "strum-strum" until the guests all had entered their automobiles.

Agricultural News Notes of the Pacific Coast

Northern California

Hop growers are making contracts at 12 to 13 cents.

The Butte County farm bureau reports 576 members.

Colusa County prune growers have organized an association.

The poultrymen of Hayward, Alameda County, organized July 29.

Oroville, Butte County, reports local rice fields ripening crops unusually early.

The 1921 acreage of rice in Butte County is 12 per cent less than that of last year.

An exchange at Livermore, Alameda County, reports offers of $100 a ton for wine grapes.

A stubblefield fire burned over 50,000 acres in the Livermore Valley during the last week of July.

Dr. H. P. Bonnikson of Durham has been appointed field veterinarian in Sutter, Yuba and Butte Counties.

Apricot crop in Winters district of Yolo County is 20 per cent short this year owing to early frost damage.

Sacramento Valley peaches brought as high as $4.75 a box in eastern markets during the last week of July.

A new fruit dryer has been established at Newcastle, Placer County, in the Silva-Bergtholdt warehouse.

The Lodi, San Joaquin County, canneries started packing peaches last week, paying $30 to $35 a ton for them.

Almond harvesting at Arbuckle, Colusa County, began August 1, the earliest picking in that section of the state.

At the end of the 38th week in the Petaluma laying contest, hen No. 348, property of C. H. Purvine, had laid 213 eggs.

Farm Adviser Baade of Napa County reports sale of the entire plum crop of the county to the Cooperative Cannery at San Jose.

The Colusa County Prune Growers Association met July 23 and set 40 cents an hour, without board, as the price of common labor at packing houses.

The Livermore Valley, Alameda County harvested 17,000 tons of hay, about 60 per cent of a normal crop. 200,000 sacks of barley was the yield of 18,000 acres.

D. R. McGregor of Woodland, Yolo County, has developed a new rice which ripens 40 days earlier than standard varieties used there. It has been named Eureka.

El Dorado County complains it is overrun with bobcats, foxes and coyotes, that come to the ranches in droves in daylight. Turkeys and goat kids are special prey.

The management of the Eden Township Farm Products Show says that so much space has been taken for agricultural exhibits that many concessions will be crowded out.

As a part of the cleanup campaign inaugurated by G. H. Flournoy of Tehama County, the desert pest known as the puncture vine has almost been completely eradicated in the region of Red Bluff. Large infestations of star and milk thistle are giving concern and Commissioner Flournoy has issued a timely note calling attention to the danger of fall seed infestation of ranches and ranges now considered clean.

Central California

The Patterson, Stanislaus County fair will be held August 24-27.

Peach shipments from Terra Bella, Tulare County, started July 22.

Oakdale, Stanislaus County, has just been given an additional rural route.

Watsonville, Santa Cruz County, is to have a large lettuce packing house.

Inyo is preparing for a real county fair October 4-5. It will be held at Bishop.

Construction work has begun on 20 miles of state highway through Bishop, Inyo County.

The Jersey calf club of Stanislaus County will exhibit at the Patterson fair, August 24-27.

Stanislaus County canneries are paying cutters 40 cents instead of 57 cents an hour, as last season.

O. G. Brundage of Farmersville, Tulare County, says that he expects to ship east 1,500 tons of fresh Calimyrna figs.

Black aphis badly infesting bean fields of Stanislaus County were easily controlled by a ten per cent nico-dust spray.

Monterey County is sending out an unusually large crop of wild huckleberries, especially from the Big Basin section.

A silver loving cup will be given to the winner of the Stanislaus calf club contest at the fair held at Patterson, August 24-27.

The demand for cantaloupes at Turlock, Stanislaus County, now exceeds the supply for the first time in the life of the industry.

Terra Bella growers have sold their Tuscan clings at $38 per ton f. o. b. Armona; Phillips clings at $35 per ton f. o. b. Porterville.

A Turlock, Stanislaus County, rancher has sent a 76 pound watermelon to President Harding. It was an Excel, measuring 30 inches long.

Hog auction sales will be held in Kern County at Bakersfield, August 20; McFarland, 26; Wasco, September 3; Bakersfield, 17; McFarland, 30.

Officers of the Holstein calf club of Stanislaus County are William Stammerjohan, president; Leslie Dixson, vice-president; Wilhelmina Fox, secretary.

Plant No. 25 of the Associated Raisin Company, which recently burned down at Fresno, will not be rebuilt, according to Wylie M. Giffen, president.

County Agent Jungerman of Stanislaus reports Blenheim apricots long pruned yielded 57 per cent over the short pruned, and Tilton apricots increased 65 per cent.

The state department of agriculture has prevented the shipment of some Gravenstein apples from the Pajaro Valley on account of too much "russet" on their faces.

The California Peach and Fig Growers Association is fitting up a building at Turlock with canning machinery. It is expected to be ready to receive fruit by August 20.

Following the initial appearance of mealybug in Madera, and the commissioners' conference in Fresno, the recommendation calling for the sterilizing of picking boxes will be vigorously enforced.

Southern California

The Imperial Valley, like Fresno, is shipping fresh figs to eastern markets.

The Downey Community Fair, Los Angeles County, will be held August 25-27.

The Imperial Valley has closed grape shipments with a total of 160 carloads.

Orange County shipped 132 cars of oranges during the first week in August.

The Valley Center farm bureau of San Diego County held basket picnic at Lilac, July 26.

Hemet, Riverside County, will hold a big carnival, termed a "stampede," on September 5-6.

Prominent citizens of Oxnard are planning to build a combination creamery and ice plant.

Imperial Valley hogs sold at 12 cents during the first week in August, the year's record price.

District No. 5, near Brawley, Imperial County, reports a heavy acreage and heavy crop of milo.

The big sugar factory at Oxnard, Ventura County, started operations on July 30, to run 100 or more days.

The Citrus Heights Development Company of Ventura County has just completed drying 225 tons of apricots.

Imperial Valley shipped 1,550 cars of watermelons during the season just closed. Last year the total was 1,231.

Orange County has 9,000 acres of Lima beans and 11,000 acres of Blackeyes. Limas are now being harvested.

The grape growers of the Palo Verde Valley have organized under the protecting wing of the Riverside County farm bureau.

The Irvine section of Orange County reports a heavy crop of Blackeye beans, the whole county planting 250 per cent over normal.

Hundreds of people attended the barbecue given last Saturday by the prosperous new town of Marion in the San Fernando Valley.

Canneries in the Yucaipa Valley, San Bernardino County, are beginning on pears. The price paid is $70 a ton, $20 less than the 1920 price.

Cutters at the Banning Cannery struck for 15 cents per box. Growers offered 12½ and secured other help. Strikers are returning at offered wage.

The Riverside Cannery of the California Growers Association started its season's run on peaches July 27. Manager Toon says the run will continue till October 15.

P. V. Stump of Hawthorne, Orange County, has invented a walnut picker that will pick up from one to six nuts at a time. Walnut officials are investigating its use.

The Blythe farm center of Riverside County is asking for an emergency rate on hay of $5 a ton for shipments out of the valley for the next 90 days. The present rate is $10.

Manager Crandall of the Rialto Fruit Company reports mailing checks to lemon growers only 20 days after the last car in the pool was sent out. The following high prices were averaged net to the growers: Fancy, $6.58; Choice, $4.10; and Standards $3.20 per box.

The Coast and General

The prune crop of Oregon and Washington will be far below normal.

Deschutes County, Oregon, will hold a "fair and potato show" October 12-15.

Out of 7,000,000 acres of improved land in Washington, 2,500,000 are devoted to wheat raising.

Seattle and Portland combined expect to ship more than 5,000,000 boxes of apples during this summer.

The department of agriculture reports all Arizona crops good except corn, which rains came too late to save.

At a wool sale held at Shaniko, Oregon, 250,000 pounds were disposed of at prices ranging from 16 to 20 cents.

Government forecasts of the Washington apple crop indicate a crop of 20,488,000, as against 13,420,000 bushels in 1920.

A cattle growers association has recently been formed in the Black Hills district of Yavapai County, with Dave Wingfield secretary.

A new fruit warehouse, 100 by 110 feet, is being erected at Yakima, Washington, and a large addition to another is being made.

A new meat packing house opened at Snohomish, Washington, June 1, with a monthly capacity of 300 cattle, 400 hogs, and 1,000 sheep.

Bugs and blight threaten the canberry industry of southwestern Washington, and an expert from Washington, D. C., has been called.

Dr. F. W. Hodges, representing the Museum of the American Indian, is making excavations in the ancient and extinct village of Hawkiku in the Hopi Indian reservation of Arizona.

Permits have been granted for the grazing of 73,504 head of cattle on the Prescott forest reserve by the forestry service department. The Prescott forest consists of 1,500,000 acres of land.

Range conditions in Arizona have been greatly improved by recent rains. Some localities are yet badly in need of rain, and with few exceptions more rain is needed even where showers have fallen.

Cattle growers in the Prescott national forest of Arizona have united in ridding certain localities of wild horses. More than 500 have been captured to date and are being disposed of. These wild horses are usually inferior and of little value.

The cantaloupe season in the Salt River Valley has closed with total carload shipments of about 1,500. This is about 500 cars less than early estimates. Aphis caused considerable loss and the second setting of melons was considerably less than usual. Prices generally have been good.

The Arizona Pima Cotton Growers, otherwise known as the marketing association, recently incorporated, has elected for the first officials of the new association, Dwight B. Heard, president; W. S. Stevens, vice-president; Charles M. Morgan, secretary, and B. J. Showers, treasurer. The present membership numbers 713 and represents well over 50 per cent of the acreage.

Records as a Basis for Dairy Cattle Values

By R. P. Royce

WITH the splendid development of the pure bred dairy cattle industry in the state there is ample and convincing evidence that each season buyers are paying more attention to the official or advanced registry records back of their purchase and to a very large extent are making use of such records in establishing the range of values being placed on the cattle. Such being the case, it would seem that owners of pure bred herds will endeavor to increase the amount of official testing.

Of course the matter of an official record is by no means the sole factor in establishing values. Pedigree, individuality, health and condition are other factors of prime importance, not one of which is overlooked by the careful buyer. The recorded pedigree of any animal forms the real basis of value for the reason that only through such a record as is represented by the pedigree can one know the history of the individual. Therein lies the value of a pedigree and is constituted the distinguishing difference between a recorded and an unrecorded animal. The pedigree presents a correct history of all the progenitors of an animal back to the time when herd records were first established, and a complete pedigree contains a record of all official tests for butter fat and milk production. It follows then that a pedigree showing a high average of production for the dams of one animal would indicate that that particular individual was of greater value to a herd than one, the pedigree of which disclosed a lower average of production or no official records whatever. To make the point clearer, suppose we study two Holstein-Friesian pedigrees that follow:

QUEEN DE KOL IMPERIAL
Born June 2, 1915

VICTOR LAD DE KOL KING OF SCOTT 93067
By a paternal brother to the sires or dams of
Semi-officials
Creamelle Vale 1155.85
(1st Ass'n prize 1912-13)
Milk 29591.40
(World record 1912-4)
Rauwerd Count De Kol Lady Paul. 7½y 1113.25
(12 Ass'n prize 1916-7)
Milk 29000.70
Dutchland Heng. Aaggie 6y 992.98
Milk 20475.20
Dutchland Pietertje Vale 2y 967.10
Milk 21309.20

IMPERIAL AAGGIE 2D, 172328
By a paternal brother to the sires or dams of
Semi-officials
Banostine Belle D K 5y 1322.32
(World record 1912-6)
Milk 27404.40
High-Lawn Hartog D K 1247.92
(3d highest aged 1911-2)
Milk 25592.50
Daisy Grace De Kol 4y 1203.50
(World record 1912-6)
Milk 21718.30
Tweede White Lady 7y 1127.85
(5th Ass'n prize 1913-4)
Milk 21037.10
Traverse Princess Weg. 5y 1123.66
(6th Ass'n prize 1913-4)
Milk 24657.40
Spotted Ann Daughter 5y 1088.75
(4th Ass'n prize 1912-3)
2 others over 1,000 lbs.

MERCEDES COUNT DE KOL OF EL CAMPO 32651
1 A R O daughter
Highland Lassie Queen of Scott
Butter 6½y 20.60
Milk 544.60
By a son of
Pietertje Hengerveld 4½y 21.85
Milk 492.10
She, the dam of
Pietertje Hengerveld's Lady De Kol 16.90

SELIMA QUEEN OF SCOTT 127636
She is a double granddaughter of Mechthildus of La Siesta, paternal brother to
Tirania Careme Mechthilde
Butter 6y 23.99
Milk 581.70
Athalend Pietertje Mechthilde
Butter 7½y 15.90
Milk 418.90
Mech. of Monticello 5½y 15.26

CHEMAWA BUTTER BOY KEYES 39427
2 A R O daughters
Rouble De Kol Mabel 2d
Butter 7 days 2½y
Milk 411.40
Rouble De Kol Edna 3d
Butter 2y 9.57
Milk 246.60

IMPERIAL AAGGIE 142376
Dam of
Mollie D K Glasgow 4y 19.57
Milk 464.10
By a paternal brother to
Sara Jewel Hengerveld 3d
Butter 5y 39.40
Milk 638.70
Butter 30 da 121.37
Milk 2613.10

PIETERTJE HENGERVELD'S COUNT DE KOL 23224
1 Semi-official daughter
Countess Sanesta Madonna 702.27
99 A R O dau., 4 from 30 to 33 lbs.
42 others over 20 lbs.

EIDER PANSY MERCEDES 44643
A daughter of
Wellington Buckeye
and
Eider's Bell's Ambrose

BEAU GALLANT OF LA SIESTA 27650
A son of
Mechthildus of La Siesta
and
Arriola of La Siesta

BLITHE OF LA SIESTA 53960
A daughter of
Mechthildus of La Siesta
and
Fiedlia of La Siesta

DE KOL 2D'S BUTTER BOY 3D 23250
10 Semi-official daughters
5 with records over 800 lbs.
2 of them world champions
119 A R O dau., 1 over 30 lbs.

SUSIE DE KOL KEYES 3D 50941
A daughter of
Hero De Kol Dione
and
Susie De Kol Keyes

BERYL WAYNE CREAMELLE 32909
4 A R O daughters
Josephine Creamelle 3½y 20.64
Butter 365 da 2y 572.97
Baby Belle Piet. 2d 3y 20.16

AAGGIE BARRINGTON IMPERIAL 66979
A daughter of
Aaggie Anna's Imperial's Prince
and
Barrington Belle.

potential possibilities for increasing her last record. We find that her dam, Ruby Pietertje of Forrest Hill, made a 27.14 pound record when eight years old and that she had a second daughter that made a 15.32 pound record as a two year old. So far our information would indicate that Ruby Pietertje of Forrest Hill 2d must have had a good dam with ability to transmit her producing qualities to more than just one daughter. Turning to the sire we note that he was Ollie Johanna Sir Fayne and, at the time, had 21 Advanced Registry daughters with production up to 33.25 pounds of butter in seven days; that his sire had 47 A. R. O. daughters and his paternal grandsire 27 A. R. O. daughters. We note that his dam was the well known cow, Ollie Watson Prima Donna, a 31 pound cow that had two A. R. O. daughters and whose sire, Chief Piebe Oak Duchess, had 21 A. R. O. daughters, while her dam also had a seven day record.

Going back to the lower side of the pedigree we find that the maternal grandsire, Pontiac Paul, was the sire of nine A. R. O. daughters and the son of the great Hengerveld De Kol with 116 A. R. O. daughters and that her dam had a good seven day record and demonstrated her breeding and transmitting ability by producing five A. R. O. daughters. The maternal grand dam was an A. R. O. cow whose sire had two A. R. O. daughters but whose dam had not been tested. Taken as a whole the pedigree discloses that six of the seven nearest dams had A. R. O. records averaging 23.14 pounds of butter in seven days and five had produced two or more A. R. O. daughters. Every sire in the pedigree had demonstrated his ability to transmit production by siring from two to 116 producing daughters.

From such study of the pedigree one would be justified in assuming that Ruby Pietertje of Forrest Hill 2d would prove a valuable cow in any herd, provided she was of correct conformation and in good health and condition. Now it so happened that she was a splendid individual and in excellent condition and was purchased in one of the recent Guaranty Sales by W. J. Higdon of Tulare for $2,250. When she freshened she was carried on test and produced 39.75 pounds of butter in seven days and 162.09 pounds in 30 days, was sold in the National Sale at St. Paul last year for $10,500.

So much for Ruby Pietertje of Forrest Hill 2d. Let us examine into the pedigree of Queen De Kol Imperial.

Queen De Kol Imperial has no record of her own and not a single one of her seven nearest dams had a record. Furthermore her sire nor either of her grandsires were out of tested dams. A few of the sires had tested daughters, however. Such a pedigree would hardly be grounds for assuming that Queen De Kol Imperial would prove a valuable addition to a good herd even though it so happened that the lack of tested dams was entirely due to dircumstances and not to a lack of real ability and that estimation of her value was apparently entertained by her purchasers at the sale in which she was disposed of for she brought but $135. Even though the first cow had sold without a record, as was the second, the difference in values would have been marked, for back of the first is a long line of proven producers, while back of the second is scarcely any proven merit.

The two pedigrees referred to, while representing extreme cases, indicate the real value of a pedigree as a basis for establishing values. One provides a definite foundation on which to build, the other offers little. Because dairy

(Continued on Page 160.)

RUBY PIETERTJE OF FOREST HILL 2D
Born February 18, 1915
Butter 7 days 3½y 27.77
Milk 548.80
Butter 30 days 107.32
Milk 2254.40
Butter 7 days 2½y 21.95
Milk 419.40
Butter 30 days 87.14
Milk 1843.90

OLLIE JOHANNA SIR FAYNE 59096
21 A R O daughters
Piebe Mooie Fayne
Butter 30 days 33.25
133.81
Gewina Ollie Fayne 5½y 28.76
Butter 365 days 572.10
Lady Fayne Ormsby 5y 23.25
Butter 30 days 78.89
Ruby Piet. of Forest Hill 2d
Butter 7 days 2½y 21.95
Butter 30 days 87.14
Brother to the sire and dam of
Piebe Mooie Fayne 33.25
Johanna Fayne Mooie Hom.
By a brother to
Pledge Fayne De Kol 34.90
Pietertje Fayne Gerben 31.78
Miss Fayne Segis Beauty 30.56
Johanna De Colantha 5th 30 50
By a brother of the sire of
Miss Colantha Korndyke Om. 34.08
Butter 365 days 845.38
Cascade Violet 4y 31.54

RUBY PIETERTJE OF FOREST HILL 98867
Butter 7 days 8y 27.14
Milk 443.90
2 A R O daughters
Ruby Pietertje of Forest Hill 2d
Butter 7 days 3½y 27.77
Butter 7 days 2½y 21.95
Ruby Pauline 2y 15.32
Milk 282.90
By a brother to
Princess Heng. De Kol 33.62
Bloomingdale Heng. Ed 32.45
Pontiac Artis 31.71
Butter 365 days 1076.91
By a brother to the sires of
Seg. Heng. Fayne Johanna 47.35
Butter 30 days 165.43
Sunrise Heng. Carol 8½y 41.07
33 others with over 30 lbs.

SIR JOHANNA FAYNE 42147
47 A R O daughters
Johanna Fayne Star 32.70
Pet Douglas 3d Johanna 32.16
Johanna Fayne Rue 31.31
Butter 30 days 124.89
14 others with over 20 lbs.
2 granddaughters over 30 lbs.

OLLIE WATSON PRIMA DONNA 71767
Butter 7 days 7y 31.10
Milk 618.70
Butter 30 days 108.20
Milk 2073.00
2 A R O daughters
Ollie Watson Prima Donna 26.65
Iowanna Ollie Watson 4y 15.19

PONTIAC PAUL 37161
9 A R O daughters
Queen Ormsby Mutual Princ. 27.17
Ruby Pietertje of Forest Hill
Butter 7 days 8y 27.14
Bessie Loraine 5½y 23.40
May Ormsby Mut. Prince. 5y 22.19
Brother to the dams of
Superba Palmyra 3y 39.23
Pontiac Pat 7y 37.68

MADGE PIETERTJE DE KOL 54831
Butter 7 days 3y 18.05
Milk 437.40
Dam of
Ruby Pietertje of Forest Hill
Butter 7 days 8y 27.14
Milk 443.90

SIR FAYNE CONCORDIA 35227
27 A R O daughters
4 with records over 30 lbs.
14 others with over 20 lbs.
14 granddaughters over 30 lbs.

JOHANNA DE PAULINE 4TH 60992
Butter 7 days 7y 25.47
Milk 528.90
2 A R O daughters
Johana Paulette 6y 28.81

CHIEF PIEBE OAK DUCHESS 28176
21 A R O daughters
1 30-lb. daughter
11 others with over 20 lbs.
6 granddaughters over 30 lbs.

OLLIE WATSON 3D'S DE KOL 50665
Butter 7 days 2y 10.03
Milk 247.50
Dam of
Ollie Watson Prima Don. 31.10

HENGERVELD DE KOL 23102
116 A R O daughters
10 with records over 30 lbs.
67 others with over 20 lbs.
3 granddaughters over 40 lbs.
43 others with over 30 lbs.

PONTIAC PAULINE MOHOMET 46920
Butter 7 days 8½y 27.06
Milk 560.60
5 A R O daughters
Pontiac Paul. De Kol 26.00

PIETERTJE DE KOL ONDIT 25399
2 A R O daughters
Madge Pietertje De Kol 18.05
Lorine De Kol 3y 17.37

MARGARET OF ELMWOOD 39797
Dam of
Madge Pietertje De Kol 3y 18.05
Milk 437.40

The Healthiest Trees Are in Sprayed Groves

—and that's a fact. Records open to your inspection prove it. For example, growers in Tulare County who used our sprays both winter and early summer packed about 90 per cent of fancy fruit. One spraying in summer gave about 75 per cent fancy. Those failing to spray at all had about 60 per cent fancy—some only 20 per cent.

These unchallenged records that spraying pays are furnished by your brother citrus growers in California. Why not ask them? Their groves—that showed the highest profits from fancy oranges—are sprayed regularly with

B. T. S.	15 lbs.	Per	B. T. S.	10 to 12 lbs.
TRIUMPH	1½ to 2½ gals.	200 gal.	TRIUMPH	1 gal.
GLUE	1 lb.	tank	GLUE	1 lb.
(For Citricola and Black Scale)			(For Red Spiders)	

(Patented Formulas)

The market wants fancy fruit again this year. You can make up for the drop in orange prices by increased production of fancy crops. Summer spraying with our field-tested, patented formulas "bring the pay."

Remember! The above formulas are specially adapted for summer control of citricola and black scale—and red spiders. Your bigger pack of fancy fruit will pay the costs many times over. Frank B. Herbert, our assistant entomologist, located at Los Angeles, will examine your grove free of charge.

Write today to our Los Angeles headquarters for a new free bulletin on citrus spraying by our expert entomologist, Paul R. Jones.

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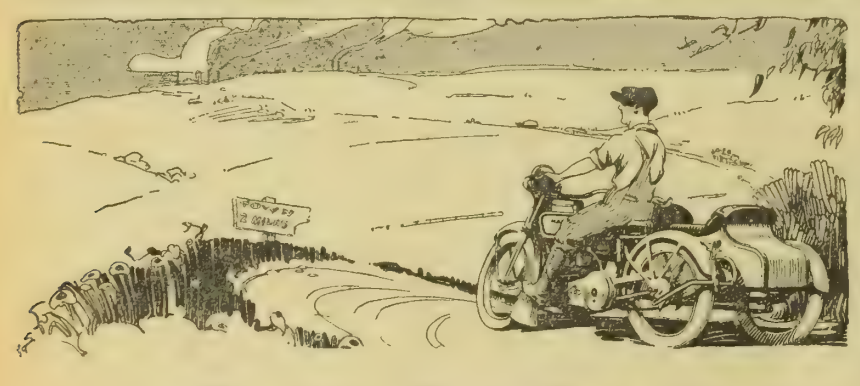

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Save your automobile for family use. A Harley-Davidson is just the thing for half of your business or pleasure trips. The roomy sidecar will carry most anything—milk cans, egg crates, sacks of flour or feed, tools, repair parts, etc.

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Let us prove to you that a Harley-Davidson is an investment that pays the farmer big dividends. Write for FREE literature.

Attractive dealer proposition for unassigned territory. If interested, address Desk A-2.

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Japanese Persimmons

By Ernest Braunton

FOR several years the demand for persimmons has strongly exceeded the supply, and each year these fruits come more into popular favor. In Japan they are so highly regarded and so universally consumed that they occupy there the same relative position as the apple in the United States, and are put to similar uses; for dried persimmons are a staple article of diet and commerce in the Far East.

Introduced into California about 1870 they have but slowly grown in consumption and in commercial favor.

Chinese Seedling Persimmons

There are more than 300,000 plants in this bed of Diospyrus Lotus, the best grafting stock for Japanese named varieties.

As long ago as 1891, now 30 years, the writer saw vigorous trees bearing an abundance of fine fruits about Newcastle, Placer County, and other northern points, yet none of these districts market them today. In Los Angeles Martin Wetzel and others planted Hachiyas on the east side of the river 47 years ago, and the trees have borne heavily each year the best of fruits. During this nearly half a century friends and neighbors have eagerly sought this supply of fruit, for none was to be had in the market. But now the general public is recognizing the delicious flavor and high nutritive value of these fruits and orchard planting is annually more extensive, though supply of trees has limited the acreage.

For best results the named varieties should be grafted on the Manchurian Diospyrus Lotus, a species growing wild throughout that part of China. The writer has just visited the orchards of J. A. Schoonover about two miles northwest of El Monte, Los Angeles County. Here, and elsewhere in the neighborhood, are many old trees of several varieties that have borne well for a considerable number of years. First Mr. Schoonover planted an acre, then several acres, and so on until this year he will plant another tract of 54 acres, perhaps more. Unable to get seedlings to bud on he secured a lot of seed from North China, in fact, a half million. The cost was small, and he thought enough of them would grow so he could supply all who asked for them, though he is not a nurseryman. More than 300,000 of them grew! He will not be able to graft all these but is cutting his orchard trees rather close and gathering good grafts wherever he finds them. Of those he grafted last year he will plant at least 5,200 on his own lands. All these are of the Hachiya variety, the one that thrives best in the south end of the state.

It is the best of the astringent varieties and of the non-astringents the Hyakume appears to be most popular. Another, of the later class, that is growing in favor is the Tamopan, which name we are told is Chinese for grindstone, so called because of its curious form. It is of large size and good flavor.

Persimmons may be planted in a wide range of soils and climate In sections too cold for citrus trees and so troubled with late and early frosts as to make planting of walnuts hazardous, the persimmon is finding favor. The only objection urged against the tree comes from extremely windy sections, for the wood is brittle and branches are easily broken, but as trees are low growing and windbreaks are easily provided this objection may be overlooked where other conditions are favorable. The procurable stock comprises about a dozen named varieties, and among these the better are, beside the three mentioned: Tane Nashi, Yemon, Dai Dai Maru, Costata, Gailey, Goshio and Zengi. Persimmon trees are easily transplanted, even when several years old.

Alfalfa for Fertilizer

THE shortage of manure in California has caused citrus orchardists and others to persistently ask, "What shall we do to save our orchards?" Some are answering their own question by using alfalfa hay, usually damaged or inferior hay at low prices, but often high grade hay. Riverside and Redlands growers have been testing out the use of alfalfa for some years. The Riverside Press has made canvass of the situation and reports:

"These experiments have been going on for four or five years, long enough to convince even the most skeptical that alfalfa hay is one of the best mediums to increase the organic matter content of the soil, especially the clay loams of the two districts above mentioned.

"According to these growers alfalfa hay has all the essentials necessary to a well balanced fertilizer. It is rich in nitrogen—a form of fertilizer most needed in Southern California soils. It carries to the soil a rich humus which improves its water holding power, makes it more friable and porous, gives it greater aeration, and puts it in a better condition to withstand the heat of the summer months.

"Experience has shown, too, that citrus groves respond to the treatment immediately. Trees have increased their fruit output materially the year following the first application of alfalfa. Enthusiastic orchardists will show you groves of orange trees which one year carried small, sickly, mottled leaves and the following year were foliaged with broad, rich colored, waxy leaves, the result of an application of from 75 to 90 pounds of alfalfa hay per tree. These enthusiasts declare that alfalfa makes the tree look better and grow a bigger crop of better fruit.

How Much to Pay

"'How much can a grower afford to pay per ton for alfalfa hay to use as a fertilizer on his citrus grove?' That is a question which is being asked by orchardists today. The National Orange Company of Riverside has paid as high as $23 per ton for baled alfalfa, chopped it, spread it, plowed it under, and considered it was good business. Dr. C. E. Lombard of Redlands used hay from his own fields, which he could have sold for $25 a ton, to fertilize some of his extensive acreage. He declares it was money well spent; that he really received the value of $25 a ton for his hay. Many others during the years of high priced alfalfa paid equally as much and considered they were justified in doing so. However, a consensus of growers' opinions would regard from $15 to $20 a ton a conservative price to pay. That is, compared to the price of other fertilizers. Of course it depends somewhat on the price of fruit, but your price is more likely to be top notch if you use the proper fertilizer.

"Probably one of the most enthusiastic over the efficacy of alfalfa as a

fertilizer is Dr. Lombard. He has been using alfalfa for the past five years and declares his experience gives him authority to speak on the subject. Dr. Lombard has used a great many varieties of fertilizers on his many groves near Redlands. Barnyard and commercial fertilizer he has used in large quantities. He has tried both summer and winter cover crops, vetch and melilotus alba, but is satisfied that alfalfa hay, chopped fine and carefully plowed under in early December, will surpass them all.

"Dr. Lombard was impressed with the value of this method of fertilization during the disastrous June hot wave of four years ago. His experimentation with alfalfa had only begun the year previous. At that time he had applied a covering of 90 pounds to a tree on one of his groves. The foliage on these trees in response to the alfalfa treatment was so dense and afforded so much shade to the fruit that his loss was almost negligible. While surrounding trees dropped nearly all their fruit, his trees, alfalfa fertilized, produced a good crop of splendid fruit which had the advantage of a high priced market.

Should Be Plowed Under

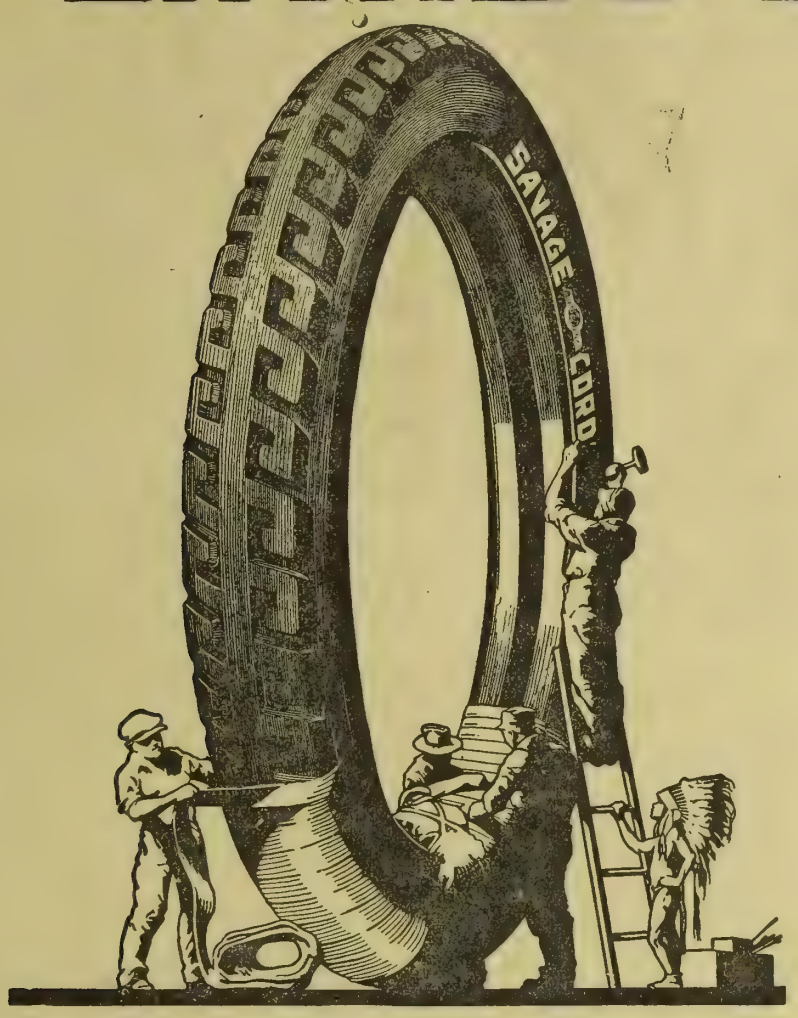
"Dr. Lombard is emphatic that the only way to secure results by the mixture of alfalfa with the soil is by thorough plowing. The closer you get the chopped alfalfa to the root system the better, in his opinion. He is satisfied disking will not answer the best purpose because the disk will not completely cover the alfalfa and this he believes is necessary if best results are to be obtained. Deep plowing also tends to decrease loss by oxidation during the heated months. It is also best to spread the fertilizing element between the rows in the direction the water runs, because it will the more quickly form humus if it has the advantage of abundant water.

"Dr. Lombard was attracted to the use of alfalfa as a fertilizer five years ago by the splendid condition of a few rows of trees in the orchard of a friend near Pomona. This friend had applied 125 pounds of alfalfa hay to each tree the year previous, and their remarkably thrifty appearance in contrast with the other yellow leafed trees in the orchard gave the doctor his first lesson in proper fertilization. He was so impressed that he decided to give alfalfa a trial. He used 90 pounds per tree with his first application. Later he used 75 pounds and even as low as 50 pounds per tree. However, he declared 75 to 80 pounds is ample provided it is carefully plowed under. Good, well cured alfalfal is another requirement. The better the hay the better the fertilizer, Dr. Lombard declares.

"Two other Redlands orchardists who have given alfalfa hay a tryout as a fertilizer in their orchards are A. Gregory and W. E. Grigsby. These men have fertilized with alfalfa hay long enough to know whereof they

(Continued on Page 154.)

THE NEW SAVAGE CORD



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give unusual service because unusual materials and methods are used in their construction. Hand built to the smallest detail, they carry two extra plies of special fabric, absolutely pure gum friction cushion and side stock, and a tough, elastic tread.

We guarantee that not an ounce of shoddy or adulterants is used in either casing or tube.

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A MIGHTY TIRE

FOR THE FARM

Agricultural requirements call for tires designed and built to render uninterrupted service with the greatest economy, irrespective of loads, roads or weather.

The Savage organization recently produced a tire incorporating the most desirable modern attainments and features in cord tire construction—a tire of unquestionable quality, built to render the maximum of uninterrupted service.

This tire, the Mighty Savage Cord, rapidly gained recognition as a tire of mechanical excellence and unexcelled performance ability and set a pace in economy and dependability that gives the purchaser greatest mileage in proportion to his investment.

HAS MANY FEATURES

The Savage Cord is built of the finest materials procurable and contains from one to two more plies of cords in each size than is the general practice. This gives the carcass of the Savage Cord its great strength and endurance.

It has what is considered by many experts the most durable and scientifically designed tread ever produced, embodying effective non-skid features as well as providing for positive traction.

EXTRA THICK

The side wall is extra thick as a precaution against rut wear. And in the larger sizes a new "bumper" greatly strengthens and protects the side wall, a feature especially adapted for country roads.

The interlocking cord bead is unusually strong, preventing rim cutting, tube pinching, side-wall chafing and other troubles ordinarily encountered when beads are weak.

The Mighty Savage Cord is the ideal tire for the country motorist who demands the very best and wants long-continued, trouble-free tire service at the lowest cost per mile for service rendered.

ASK YOUR LOCAL DEALER

THE SPRECKELS "SAVAGE" TIRE CO. SAN DIEGO, CALIFORNIA

OUR BEST ASSET IS THE SATISFIED CUSTOMER

August in the Vegetable Garden

Southern California

By D. F. Reichard

AUGUST for the Southern California gardener is a very busy month. It is the month in which we get ready and start planting our gardens for winter crops. Getting ready is a very important part of a successful garden. First of all, spread over the surface to be planted fertilizer in concentrated form, either a complete commercial fertilizer or the ingredients separately, keeping in mind that there must be supplied the three elements: Nitrogen, 2 to 8 per cent; phosphoric acid, 5 to 10 per cent, and potash, ½ to 3 per cent. These concentrated fertilizers are more quickly available and therefore more desirable at this time when immediate results are wanted. Then thoroughly soak the ground either by letting a sprinkler run till the soil is wet down to the submoisture, or furrow out and let the water run slowly down the rows or check the plot off in basins to be filled with water. Whichever way is used see that the moisture applied reaches the submoisture that is usually 18 to 24 inches down. This should be done about ten days before you expect to plant.

After a couple of days, when the ground will work up nicely without sticking to your tools, spade or plow as deeply as possible and thoroughly pulverize. With some crops, such as lettuce, the irrigating and plowing must be done twice to get the ground in condition to get a good germination of the seed; while with peas the ground has to lie about ten days after plowing and pulverizing to get it warmed up enough to prevent the pea seed from decaying before they sprout. In this case care must be taken not to allow the ground to get dried out too much—keep the surface in a very fine mulch.

Plant all seeds about twice as deep this time of the year as in the spring. Small seeds like lettuce, carrots and cabbage cover an inch and a half; beets, radish and parsnips about two inches; peas, corn and beans plant in the bottom of shallow furrows, covering the seed 2½ to three inches.

The following small seeded crops can be more successfully grown if planted in ridges so that water can be run on either side to soak in to the seed without making a cake over the top of it; beet, carrot, lettuce, turnip, parsley, parsnip, endive, chard, kohlrabi, radish, spinach, kale and cabbage.

Sweet corn, summer squash, cucumbers and bush string beans can be planted during the early part of the month with assurance of making a crop in most any section, while in frostless sections they can be planted even into next month.

The principal planting of winter potatoes is made between August first and fifteenth. Plant on the level four or five inches deep. It will take them three or four weeks to come up. When they are up enough to show the rows, cultivate, leaving a small furrow between the rows, and as soon as they need water irrigate down these rows, after which cultivate when ready, leaving a little larger furrow in which to irrigate later. Continue this method till your crop is made.

It is too late, except in very favored spots, to plant pole beans, watermelon and muskmelons and pumpkins — it takes too long for them to mature.

Remember that at this time of the year the sun is working full time, taking moisture from your growing plants and the ground, and that it must be supplied by you through some method of irrigation; also that insects and diseases are always waiting to make an attack. Keep and use preventives and cures on hand for immediate use when needed.

Keep the surface of the ground well stirred to keep down weeds and conserve moisture.

Northern California

By A. R. Gould

THERE is always a reward for the gardener and during the next few months the harvest should be plentiful to those who have given their crops careful cultivation and study, and here we would point out that it is unreasonable to expect quality crops without strict attention to systematic fertilizaion and irrigation. All soils need careful study, and much time and labor will be saved as a result. If mistakes were made this season do not fail to note them in your record book. Keep track of all the errors. Remember the old saying, "The man who never made a mistake never made anything." The man who never learned by his mistakes is a fool. Now is the time to take note of every detail.

A number of crops will be ready to harvest this month. Chief of these will be onions, potatoes, corn, beans, carrots and beets. Any of these not required for immediate use may be stored in a dry cellar or the barn. Beets, potatoes and carrots may be covered with dry sand. Onions may be hung up and the corn placed in trays so that they may be frequently inspected as the corn worm will often be at work. When digging be careful not to bruise such crops as potatoes, beets and carrots, and all diseased should be destroyed.

Leeks and Celery

These should now be getting well established in the trenches and must not be allowed to suffer for want of water. Keep the soil well cultivated between the plants. At the end of the month give an application of liquid manure. Soot should also be applied very liberally as this not only acts as a fertilizer but will help to keep away cutworms, etc., which are fond of attacking these crops.

Beans

Make a sowing of Canadian Wonder and Golden Wax at once for late fall use on well prepared soil in rows two feet apart. Collect all matured beans and use for dry shell beans, and the best types keep for seed. Thin out those sown last month, leaving the plants one inch apart in the rows to allow for proper development.

Tomatoes

This crop now shows great promise and there should be a fairly good yield. They may be assisted by an application of liquid manure twice weekly. Where the trained method is adopted all lateral growth should be pinched out, or axil shoots, and when grown on the ground as bush plants there will be a certain amount of surplus growth which may be removed to allow the fruits to ripen more quickly. The appearance of aphis will probably be noted and this should be attacked with Black Leaf 40.

Corn

Make a sowing of Golden Bantam and Country Gentleman for late fall use on ground that has been well manured and irrigated. Cultivate between the rows of the varieties sown last month and irrigate. A frequent dusting of dry lead arsenate on the silks of the ears as they develop will be necessary to destroy the corn worm. Collect all cobs as they mature and store those not needed immediately, for future use.

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Kirkman Nurseries

Fresno, California

Member of Nurserymen's Bud Selection Association of California

Lettuce

Make a successional sowing of Los Angeles and May King, both good varieties for fall use. Sow the seed very thinly in rows 18 to 24 inches apart. Keep well watered and cultivated. Thin out those sown last month, leaving the plants six to eight inches apart in the rows.

Kale and Brussels Sprouts

Plants of these should be ready to plant out at the end of the month on richly prepared soil which should also be well irrigated before planting. Kale makes excellent green feed for poultry and should be extensively planted.

Turnips and Kohlrabi

Thin out the sowings made last month, leaving the plants eight inches apart in the rows. Cultivate frequently and irrigate to get the best results.

Onions

The main crop of onions will be ready to harvest during the latter part of this month, and as the tops become yellow, which is an indication of maturity, they should be pulled and dried in the sun for a few days before being stored away.

Cauliflower

Secure plants of these for planting out in rich soil. Best varieties Autumn Giant and Early Snowball. Plant 18 inches apart in rows which should be two feet apart.

August in the Ornamental Garden

Northern California

By A. R. Gould

IT will be necessary this month to look over the seed list to select suitable subjects for our spring flowering display and there are a number of useful things we can select to sow seed of to provide a charming picture in our beds and borders. Our fall flowering subjects, such as dahlias, cosmos and zinnias, will need special care in cultivating, and the first two named will require stakes. Chrysanthemums also will need feeding with liquid manure, while begonias will derive much benefit from it. Continue to tie up all climbers as there will be much new growth on wistaria, roses, jasmine, cobea scandens, etc., and these should also be mulched with manure. As the annual flowering plants die down remove them and prepare the ground with manure for future planting.

Subjects for winter and spring flowering are:

Sweet Peas—Winter Flowering Types

Of these there are now quite a few beautiful varieties. Seeds may be sown late this month in trenches which should be prepared with well mixed manure to insure success. Soak the seeds at least 12 hours before sowing.

Cinerarias

These are very satisfactory flowering plants and thrive in a shady situation. There are the dwarf large flowered types in shades of rose and blue, separate colors and mixed shades, also a tall flowered type with smaller branching star shaped flowers in blue, purple, white, rose and other shades. Seeds of these may be sown now in boxes of fine soil, placed in a shady position and later transplanted to their flowering quarters.

Sweet Williams

These old fashioned flowers give a charm to every garden and may be obtained in several colors, pink, white, crimson and velvet maroon, while there is a fine mixed strain of auricula flowered known as Holborn Glory.

Violas and Pansies

Both well known subjects which provide a lasting color display. May be had in separate colors or mixed. Sow seeds of the best strains in seed beds or boxes, afterwards transplant to other beds to secure strong healthy plants before placing in their flowering quarters.

Nice Stocks

These are really very valuable as a cut flower and keep in flower for many weeks during winter and spring. Sow seeds of these now in boxes of fine soil or on a shady border in rows, and after they are half an inch or so high they should be transplanted to other beds.

Snapdragons

These are popular flowers, and seeds of the tall flowered and semi-dwarf varieties should be sown in boxes of fine soil very thinly.

Clarkia

Graceful flowers of easy culture in varieties of salmon, purple and scarlet. Excellent cut flowers in early spring. Sow the seeds in the border very thinly where they are to flower or they may be sown in the seed box and transplanted.

Forget-me-not

Seeds sown now will produce flowers for early spring flowering. Planted in solid beds or between the tulips these will make a fine show. Sow in boxes of fine soil and transplant.

Dimorphotheca Aurantiaca

This is the African Golden Daisy and sown where it is to flower will produce a mass of flowers in the spring. Sow in rich soil thinly.

Alyssum Saxatile

A useful golden yellow subject for the border as an edging or the rock garden. Sow in boxes of fine soil now and later transplant. It will flower in the spring.

Chrysanthemums

These will require every attention now and should be given liquid manure at least once a week and later on they will need staking. To make them more bushy they may be pinched back. If aphis appears spray with Blackleaf 40, nicotine solution.

NEW PLANS FOR UNIVERSITY FARM SCHOOL

The work of the farm school of the University of California will be greatly strengthened this year by the addition of more highly specialized courses. Opportunities for specialization will be offered along four distinct lines, permitting a choice of animal husbandry, dairy manufactures, poultry husbandry, or horticulture. From one-third to one-half of each student's time will be given over to one of these branches. The rest will be occupied either with allied subjects or with practical work in forging and carpentry. Opportunity will also be offered for the election of such subjects as botany, chemistry, English and economics. Under these plans a student will have at the end of one year's time an excellent understanding of one particular line of work in which he may be particularly interested.

BEAUMONT CHERRY RETURNS

The Beaumont Fruit Growers Association reports net returns to growers on cherries: Tartarians, first grade, per 100 pounds, $17; seconds, $8.85; Royal Anns, $8.75; Chapmans, $13.86; Bings, firsts, $13; seconds, $11; Black Republicans, $7.52; Lamberts, $13.25; Sour, $6.18. These prices compare favorably with returns to Oregon growers as reported in the Packer of recent date. For Bings and Lamberts they received 10 cents per pound net; for Black Republicans, 6 cents, and for Royal Anns, 4 to 5 cents.

Quarantine Officer Compere reports the arrival at San Francisco of 22 crates containing 10,600 Carabid beetles. The beetles are predatory on the Japanese beetle (Popillia japonica) and were forwarded by C. P. Clausen from Yokohama to the U. S. department of agriculture, Riverton, New Jersey.

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Test this tire against any you have been using. The result will show you how to save money on your future tire mileage.

ALFALFA FOR FERTILIZER

(Continued from Page 151.)

speak, and they declare that alfalfa hay at $15 or $20 a ton will give a good return on the investment as compared with any other means of supplying organic matter and nitrogen to the soil of their groves.

Results in Riverside District

"In the Riverside district the largest user of alfalfa as a fertilizer is the National Orange Company. This company has been using alfalfa for about five years, and, according to F. F. Chase, secretary of the company, has achieved splendid results. Mr. Chase gives it as his opinion that this method of supplying organic matter to the grove has equal value with the application of stable manure. Because of the scarcity of stable fertilizer, Mr. Chase says his company was forced to resort to alfalfa. 'We have given it trials under varying conditions during the past five years and are well satisfied with results. Last year we used a large quantity of alfalfa and expect to use considerable tonnage this year.'

"Mr. Chase declared analysis made for them showed from one to three per cent nitrogen. It all depends on the cutting and the condition and richness of the soil on which the hay was grown. Hay of the first cutting will contain a greater nitrogen content as will also hay grown on a rich soil with plenty of water. Mr. Chase, however, is not averse to using hay which has been spoiled by rain and therefore musty and not fit for stock consumption. Of course, this kind of alfalfa lacks a high nitrogen content, but then it can be bought cheaper and therefore evens up with the good article.

"Asked how much his company could afford to pay for alfalfa for fertilizer purposes, Mr. Chase declared that as being the crux of the entire matter. 'Last year paid as high as $20 a ton for the baled product and then chopped it ourselves. This is a pretty high price, but we were forced to pay it because of the high market. This year, however, market price of alfalfa is lower. This year, too, it will come into competition with a great surplus of stable manure now on the market.' Mr. Chase says his company has been solicited time and again by fertilizer men to supply this year's needs with stable manure. He says the National Orange Company has decided to use alfalfa in preference because it is the belief that good alfalfa will measure up to the best barnyard article.

Groves Need Fertilization

"Just now a great deal of unfavorable comment is going the rounds among orchardists because of the low average production of orange trees in California counties shown by the United States department of census report. Growers are charging this low average, which is as low as 1.4 boxes per tree in Riverside County, to a lack of fertilization.

"E. C. Merrifield of Colton, recognized as one of the best posted men in the citrus industry, attributed the decrease directly to the increase in freight rates on fertilizers. 'Fertilizers cost too much,' he says, 'and growers have simply neglected their groves.'

"It is pointed out by citrus growers that there is no need of alfalfa men paying freight on their product to central markets when they could deliver hay right at home to the advantage of some under-fertilized grove. Enthusiasts of the alfalfa method declare if lack of fertilization is responsible for the decrease in tree output it is folly to ship alfalfa out of their districts when it contains all the necessary ingredients to put back the productive power into the under nourished citrus tree.

"One of the drawbacks which has faced the average orchardist in the use of alfalfa is the necessity of chopping. To be effective it must be

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COMING EVENTS

Eden Township Farm Products Show, Hayward, August 11-14.
North of Bay Counties Fair, Santa Rosa, August 24-28.
Downey Community Fair, Downey, August 25-27.
Yuba County Agricultural Fair, Browns Valley, Aug. 29-31.
Vintage Festival, St. Helena, September 3-5.
California State Fair, Sacramento, Sept. 3-11.
Fall River Fair, McArthur, September 7-9.
San Joaquin County Fair, Stockton, September 12-17.
Tulare County Livestock and Agricultural Show, Tulare, Sept. 13-17.
Humboldt County Fair, Ferndale, Sept. 13-17.
San Fernando Valley Fair and Market, San Fernando, Sept. 13-18.
Glenn County Fair, Orland, Sept. 19-24.
Kings County Fair, Hanford, Sept. 19-24.
San Diego County Fair, San Diego, Sept. 21-24.
Fresno District Fair, Fresno, Sept. 26-Oct. 1.
Orange County Fair, Huntington Beach, Sept. 28-Oct. 1.
Arbuckle Almond Show, Arbuckle, Sept. 28-Oct. 2.
Inyo County Fair, Bishop, Oct. 4-5.
National Swine Show, Springfield, Illinois, Oct. 3-8.
Ventura County Fair, Ventura, Oct. 5-8.
Shasta County Farm Bureau Fair, Anderson, October 6-8.
Southern California Fair, Riverside, Oct. 11-16.
California Association of Nurserymen Annual Convention, Exposition Park, Los Angeles, Oct. 20-22.
Date Festival, Coachella Valley, Oct. 21-23.
California National Livestock Show, San Francisco, Oct. 22-30.
Pacific International Livestock Exposition, Portland, Oregon, Nov. 5-12.
Stanislaus County Poultrymen's Association Show, Winter Garden, Dec. 4-7.

chopped reasonably fine, and not many have the equipment for doing this. However, this drawback will be overcome by the Alfalfa Growers of California in the near future. According to officials of the growers association, equipment for chopping will be installed at various points as the demand requires, and the association will contract to deliver the chopped product directly to the groves."

SECOND ANNIVERSARY

The second anniversary of the birth of the state department of agriculture was observed July 22. There was a general gathering of various members of the department and one feature was presentation to Director Hecke of an album containing their photographs. The celebration also was in honor of the enlarging of the department because of the concentration made necessary by the law passed by the recent legislature. It is but a few years since the board of horticulture had but little to do with the state's advancement, but its activities have grown year by year until now it is one of the strongest arms of the state government.

PRIZES FOR CAROBS

There are thousands of seedling carob (St. John's Bread) trees now fruiting in California. For the most part these are in yard, garden, or street planting. In order to bring the fruit of these seedlings together where it may be studied by expert judges and the very best selected for future commercial propagation, the California Nurserymen's Association has offered $50 in prizes to be awarded for the best exhibit of fruit from a seedling carob tree grown in California.

There is no charge for entering and application for the number of entries should be made to Henry W. Kruckeberg, 236 Court Street, Los Angeles, before September 20. One person may make as many entries as he has fruiting trees. Each exhibit will consist of two pounds of the ripe pods, all from one tree, together with a statement of the age of the tree and where it is growing. Exhibits should be sent by parcel post or express prepaid to Superintendent California Horticultural Exhibition, Armory Hall, Exposition Park, Los Angeles, to arrive not later than October 18.

COMMENT ON "CANTALOUPES IN TRANSIT"

In the Cultivator of July 23 is an article on cantaloupes in transit, upon which I would like to make a remark because I have found things exactly as that article states.

It is now over seven years since I have bought any cantaloupes in the New York or Jersey City markets because of poor quality, bad odor and unripeness of fruit. Getting one good melon out of ten is scarcely worth trying at 10 to 20 cents per melon, or pre-war prices of five to ten cents.

In the summer of 1918 I had a California farmer on a visit for a week and he tried his hand at buying some good California melons but I can assure you that he failed to get one that was A-1 because I know a good one when I have eaten it. I sincerely hope that the article you have printed will do some good, and I thank you for same.—Frank W. Loven, Jersey City, New York.

No "Half Slips"

In your issue of July 23 an article by L. J. Weishaar, "Observing Cantaloupes in Transit," I consider a very complete and beneficial bit of information for cantaloupe growers and shippers. In one or two places in writing I find he uses the term half slip for a certain stage of the melon. Now from my own ten years of experience in cantaloupes I would say there is no such a thing as a half slip, and the term only serves to mislead the pickers. A full slip does exist, when the stem can be easily detached from the melon. There is no time during the growing of the melon that the stem will slip from the melon so that you can determine its ripeness for the stem acts the same on those that are two weeks away as it does on those that are but two or three days from being full slips. I think the expression was created by some would-be inspector, who probably had hoed cantaloupes a couple of months as a recommendation. — A Subscriber, Lodi.

GEORGIA PEACHES

One of the first cars of peaches out of the Fort Valley section, Georgia, packed and marked in accordance with the United States tentative grades for peaches, sold at top prices on the New York market, June 18, according to a report to the bureau of markets and crop estimates of the United States department of agriculture. They brought $3.25 per six basket carrier for the U. S. No. 1, 3-2 pack, and $4 for the U. S. No. 1, 2-2 pack. An agent of the bureau is in Fort Valley supervising this work and expects to have a large number of cars packed on this official grade basis.

The federal specifications provide for two grades for quality to be called U. S. No. 1 and U. S. No. 2, and in addition, the marking requirements demand that the minimum size, numerical count or style of pack be stated on the package. The U. S. Grade No. 1 shall consist of peaches of one variety which shall be firm, mature and well formed, free from dirt, growth cracks, cuts, skin breaks, and worms, and practically free from scab, scale, hail injury and damage caused by disease, insects, or mechanical or other means.

U. S. Grade No. 2 shall consist of peaches of one variety which shall be firm, mature and free from worms, growth cracks, and serious damage or discoloration caused by diseases, insects, hail, or mechanical or other means.

INYO COUNTY FAIR

The Inyo County farm bureau, the Bishop chamber of commerce, the Owens Valley Pear Growers Association and the American Legion are uniting in featuring one big agricultural fair to be held at Bishop, October 4, 5 and 6. The officers of the fair are: T. G. Watterson, president; C. T. Thompson, vice-president; V. M. Christopher, second vice-president; and W. W. Yandell, secretary.

To meet expected increased enrollment the regents of the state university have made 180 new appointments to the teaching staff. Twenty professors were granted sabbatical leave of absence.

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Want belt or direct motor drive? .....

How many acres? .....

What crops raised? .....

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Household Department

CALIFORNIA JOYS

By Mrs. J. W. Reed

Our own California how dearly we love thee.
What joys for the farmer unceasingly lurk.
How great are his joys and how many his pleasures
With nothing whatever to do but just work.

He rises up early, four-thirty at latest.
The earliest birds his company keep.
He milks thirteen cows and he curries nine horses
And rigs up his tools while his city friends sleep.

Ten minutes for breakfast—the time he begrudges.
Officially, now starts the work of the day.
The new mown alfalfa is waiting his pleasure
And soon he is cheerfully pitching the hay.

The mercury rises but there is a limit.
It goes to one hundred and twelve in the shade,
Though we must admit that in all California
In no cooling shadow was hay ever made.

At last it is noon — fifteen minutes for dinner.
While horses and hired men rest at their ease
He merrily shoulders his long handled shovel
And goes forth to irrigate all his young trees.

The afternoon lures him away to his vineyard.
He exchanges his spade for the heaviest hoe
And what the rabbits and squirrels have left him
He patiently manicures row after row.

The shadows grow longer, at last it is sundown.
The hinge in his back is beginning to squeak,
But he must eat supper and then chores and milking—
These things only come fourteen times every week.

The day's work is ended and now evening's pleasures
Are his, and he starts to the barn with his pails.
He milks all the cows and he mends the old harness,
He oils up the pump and he drives a few nails.

You ask who is there in this whole creation
Who lives a more strenuous, busier life
Than this same California rancher?
Without hesitation we answer—his wife.

Our own California, we love thy dear ranches.
We would not be merchant or banker or clerk.
Their jobs sometimes fail them but ours, no never.
There's nothing to do on a ranch but just work.

COOKIES FOR EVERYBODY

SO generous has been the response to request of Gilroy subscriber for recipe for plain rich cookies that we are able to offer Cultivator readers 45 of them, all tried and tested favorites. Recipes for snails, requested by the same subscriber, will be given as soon as space permits.

Two eggs, 1 cup sour milk (buttermilk is best), 2 cups sugar, 1 cup lard or Crisco, 1 teaspoon soda, 1 teaspoon baking powder, nutmeg, a little salt, flour enough to roll thin. Cut and bake light brown.

Petaluma Subscriber

Cream Cookies. — We enjoy your paper very much and often receive good help from it. I see from last number a request for recipe for rich cookies and snails and will beg to give both. Two cups sugar, 1 cup shortening (butter is best), 1 cup sour cream, 2 eggs, 1 teaspoon soda (level), 2 teaspoons baking powder, a little salt and lemon extract. Mix to stiff dough, roll out, cut and bake.

Mrs. F. H. Merlan, Los Angeles

Having just returned from our vacation in the beautiful Yosemite Valley, I find in your paper a request for a good rich cooky recipe. This recipe I am sending is tried and true and can be kept indefinitely without getting stale. It makes about five or six dozen medium size cookies and can be kept in any kind of climate. This year I doubled the recipe and took them to the valley with us. And last year I took them to Redondo Beach with us where we spent our vacation. I always keep them in a tin covered box like they use at the grocery stores. I will also send a first class sour milk recipe and to either recipe can be added fruits, nuts or chopped raisins. These recipes have been used in our country home back East in Nebraska for over 50 years and mother and sister are still using them.

Lemon Cookies.—One cup sugar, ½ cup butter, 2 eggs, pinch of salt, ¼ teaspoon soda dissolved in 1 teaspoon sweet milk, 1 teaspoon lemon (or any flavoring), just enough flour to make a soft dough. Roll thin and bake in quick oven.

Good Sour Milk Cookies.—Two cups sugar, 2 cups butter, 1 cup sour milk, 3 eggs, salt, nutmeg, 1 teaspoon soda dissolved in 1 teaspoon milk, flour to make soft dough. Can use only half of recipe.

Mrs. J. W. Reed, Delano

One cup sour cream, 1 cup shortening, 2 cups sugar, 3 eggs, 1 teaspoon soda, 1 teaspoon nutmeg, 1 teaspoon baking powder, flour to roll.

Mrs. L. Hansen, Simmler

Plain Rich Cookies.—2½ cups sugar, 1 cup butter (cream well), add 3 eggs, 1 cup thick sweet cream, 2 large teaspoons baking powder, flour to make soft dough. Roll very thin, sprinkle with sugar and bake in hot oven. This recipe has been a favorite for three generations.

Mrs. C. E. Clark, Lime

Plain Rich Cookies.—One and one-half cups sugar, 2 eggs, ½ cup shortening; I use suetene, but any will do (if butter is used take one whole cup), 1 cup thick sour cream, 1 teaspoon salt, 1 level teaspoon soda and 1 of baking powder, or 3 teaspoons baking powder, sifted with 1 sifter full of flour. Use any flavoring desired. Mix stiff enough with flour that dough can be rolled without sticking. Cut out, bake in hot oven.

Mrs. A. Inglett, Los Angeles

Sugar Cookies. — Two cups white sugar, 1 cup shortening, 2 eggs well beaten with a little salt, 2 cups sour cream or 1 cup condensed milk and 1 cup sweet whole milk. Flavor with vanilla or 1 teaspoon nutmeg. Use 4 cups of flour or more, just enough to handle dough. If sweet milk is used sift 2 heaping teaspoons baking powder with flour. If sour cream, use 2 level teaspoons soda. Handle as little as possible. Roll and bake in quick oven. These are rich and flaky.

Mrs. Wm. Jolliff, Modesto

Cream Cookies.—Two cups sugar, 2 eggs, 1 cup sour cream, 1 cup butter or ½ lard, 1 teaspoon soda, 1 teaspoon lemon or ½ teaspoon nutmeg, flour enough to make a dough soft enough for rolling.

W. P. Rembert, Lindsay

I am sending recipe for cookies, the kind wanted by subscriber from Gilroy. They are crisp and flaky and the best by far I have ever tried: Take 2 cups sugar, 1 cup shortening, 1 cup milk, 2 eggs, 1 rounding teaspoon baking powder, any flavoring preferred (I use lemon extract or nutmeg), cream altogether), use enough flour to make dough soft as can handle. Roll and cut out and bake in oven not too hot. If any shortening is used other than butter add a pinch of salt.

Mrs. E. N. Workman, Hanford

Plain Rich Cookies.—As per your request for a recipe for plain rich cookies I send one which never has failed me: One-half cup butter or Crisco, 1 cup sugar, 1 tablespoon milk, 2 eggs (well beaten), ¼ teaspoon salt (if Crisco is used double amount), 2 teaspoons baking powder added to 2 cups flour and sift, flavor with nutmeg. Cream butter, add sugar, and when creamy the remaining ingredients. Roll, cut in rounds and bake in quick oven.

Coconut Cookies.—One cup sugar, 1 cup butter, 2 eggs, ½ cup milk (scant), 1 cup coconut, 1 teaspoon baking powder, using flour enough to roll out. Bake in quick oven. This brought me first premium at Kings County fair.

Mrs. J. W. Waters, Watsonville

Vanilla Cookies (Good). — Cream one-third cup shortening (use butter and lard in equal amounts). Add 1 cup sugar gradually. Add 1 egg well beaten, ¼ cup milk, 2 teaspoons vanilla, and 2 cups flour mixed and sifted with 2 teaspoons baking powder and half teaspoon salt. Chill, roll and bake.

The Cultivator Patterns

3337. Child's Play Suit.—Cut in four sizes: 2, 4, 6, and 8 years. A 6 year size will require 2⅝ yards of 27 inch material for the dress and 1⅜ yard for the bloomers. Price 10 cents.

3680-3671. Ladies' Costume.—Waist 3680 cut in six sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Skirt 3671 cut in seven sizes: 26, 28, 30, 32, 34, 36, and 38 inches waist measure. For a medium size 7⅛ yards of 27 inch material will be required if made of one material. If made as illustrated 5 yards of figured material and 2⅝ yards of plain material will be required. The width of the skirt at the foot is about 2 yards. TWO separate patterns 10 cents FOR EACH pattern.

3659. Girl's Dress.—Cut in three sizes: 12, 14 and 16 years. A 14 year size will require 3¼ yards of 38 inch material. Price 10 cents.

3664. Bath or Rest Robe.—Cut in four sizes: Small, 34-36; medium, 38-40; large, 42-44; extra large, 46-48 inches bust measure. A medium size will require 4¾ yards of 36 inch material. Price 10 cents.

3665. Child's Play Dress.—Cut in five sizes: 2, 4, 6, 8, and 10 years. A 6 year size will require 2½ yards of 27 inch material. Price 10 cents.

3670. Ladies' Dress.—Cut in seven sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size will require 5½ yards of 40 inch material. The width of the skirt at the foot is about 2 yards. Price 10 cents.

3663. Girl's Dress.—Cut in four sizes: 8, 10, 12 and 14 years. A 10 year size will require 3¼ yards of 38 inch material. Price 10 cents.

3249. Porch or Home Dress.—Cut in seven sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. It will require 6¼ yards of 36 inch material for a medium size. The width of skirt at its lower edge is 2 yards. Price 10 cents.

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Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cents) stamps for each number. In order to furnish our readers with the very best NEW YORK styles, all patterns ordered are filled in NEW YORK. Therefore, we promise to deliver all patterns ordered within TWO WEEKS; we guarantee safe delivery of all patterns

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Send 15c in silver or stamps for our Up To Date Fall and Winter 1921 Catalogue, containing over 500 designs of Ladies', Misses and Children's Patterns, a concise and comprehensive article on dressmaking, also some points for the needle (illustrating 30 of the various, simple stitches) all valuable to the home dressmaker.

PATTERN DEPARTMENT
California Cultivator
Los Angeles

M. B. S., Lindsay

Recipe for plain rich cookies, to be rolled instead of dropped on the baking sheet. I enclose one which I have found to be very good, both plain as given, or when a little cocoa or cinnamon is added. One cup sour cream, 1 cup sugar, 1 teaspoon soda. Flavor with vanilla or nutmeg, flour to roll.

Mrs. E. M. Mather, Fullerton

This recipe is one I have used for years:

One cup shortening, 2 cups sugar, 5 eggs, 1 teaspoon vanilla and 1 of lemon extract, 1 teaspoon soda and 2 of cream of tartar or three teaspoons baking powder. Don't use any wetting but the eggs.

Mrs. S. M. Lindensmith, Arroyo Grande

White Cookies.—Two eggs beaten separately, 1 cup sugar, ½ cup butter, ½ teaspoon soda dissolved in 1 tablespoon of water, 1 teaspoon vanilla, flour to make dough stiff enough to roll. Cream sugar and butter, then add well beaten yolks of eggs, add soda and a little flour, then add the stiffly beaten whites of eggs and balance of flour and vanilla. Roll out about ¼ inch thick and bake in moderate oven unti llight brown. Sugar may be sprinkled over tops before baking if desired. These cookies will be found nice, rich and crisp.

Subscriber from Orange

Extra Fine Cookies.—One cup butter, 1 cup sugar, ½ cup milk, 2 heaping teaspoons baking powder, 2 teaspoons lemon extract, 3 eggs, flour enough so you can handle easily.

R. A. C., San Fernando

Good Sugar Cookies.—To make good cookies mix the dough and let stand in a cool place over night, or if this is not convenient put the dough in the ice box for an hour or two. If the dough is let stand until thoroughly cooled it will take less flour to handle it. The dough should be mixed as soft as it can be rolled out as too much flour makes them hard. If the dough is rolled thin the cooky will be crisp and tempting while if it is left with twice the amount of dough it will be soft and unappetizing.

Mrs. W. D. Phare, Redlands

Here are two cooky recipes in answer to request in July 30 number:

One and one-half cups sugar, 2/3 cup shortening, 2 eggs, 3 tablespoons sour milk, ½ teaspoon soda, 1 teaspoon salt. Flour to make stiff enough to roll out. Sprinkle sugar over top before baking.

One cup shortening, 2 cups sugar, 2/3 cup sour milk, ½ teaspoon soda, ½ teaspoon baking powder, 1 teaspoon salt. Flour to make stiff enough to roll out. Either recipe may be varied by adding spices.

C. J. E., Oakland

Plain Rich Cookies.—These are the cookies "like Mother used to make."

One cup butter, 2 cups white sugar, 1 cup sour cream (½ cream and ½ buttermilk), 2 eggs beaten, 1 teaspoon soda dissolved in cream, 1 teaspoon vanilla. Mould soft. Bake in a hot oven.

Two cups sugar (some like brown best), 1 cup shortening, 2 teaspoons vanilla extract, 2 eggs. Cream these well together. Add 1 cup buttermilk in which is dissolved 1½ teaspoons soda. Sift together several times. Six cups flour, 1 heaping teaspoon baking powder, ½ teaspoon salt (more if shortening is unsalted). Add some of flour to wet mixture and beat thoroughly, then add remainder of flour. Let stand in mixing bowl 10 or 15 minutes. Have oven hot. Sift sugar instead of flour on board. Partially roll dough, then fold over so as to mix dry sugar all through. Roll and cut only small amount at time. Are very nice with one seeded raisin pressed in center of each.

Subscriber, Modesto

Two cups sugar, 1 cup butter, 4 eggs, 4 cups flour, 3 tablespoons milk, 3 tablespoons baking powder. Rub sugar and butter together thoroughly. Beat eggs separately, add to the above with nutmeg. Sift in the flour and baking powder and knead in enough flour to handle easily.

Mrs. H. E. B., Galt

I am sending a cooky recipe, the one I use most for plain or filled cookies.

One cup sugar, ½ cup shortening, 1 egg, ½ cup sweet milk, 3½ cups flour, 2 teaspoons cream of tartar, 1 teaspoon soda or 3 teaspoons baking powder. Roll quite thin and cut.

With these I sometimes use filling of 1 cup chopped raisins, 1 tablespoon flour, ½ cup sugar, ½ cup cold water. Boil until thick in double boiler. Spread on cookies while hot and place another on top. Bake as plain cookies; it may take a little longer.

(More next week.)

HINTS FROM HOUSEKEEPERS

Separator Rubber

Tell your subscribers that if the separator rubber stretches to be too large to cut out sufficient to make it fit and sew the ends together. This will do as well as a new one.—Mrs. G. C., Bishop.

Recipes for Thompson Seedless Grapes

In answer to request of subscriber for ways of using Thompson Seedless grapes:

Thompson Seedless Sago Pudding.—One cup sago cooked in water, pinch salt, half cup sugar, flavoring. Pick grapes from stem and cook with sugar to taste, adding water to make as much juice as you will want sauce. Stir cooked sago and cooked grapes together, putting grape juice on the fire. Add enough corn starch to make a thin sauce, and a lump of butter. This will serve from six to nine dishes. I use about one and a half cups of sugar.

I also can Thompson Seedless grapes. They taste quite like gooseberries. One quart of grapes with one can of gooseberries added makes good gooseberry pies.—Mrs. A. R. Arnold, Tracy.

Chopped Pickles

Twenty-five pounds green tomatoes, 1 dozen nearly ripe cucumbers, 10 green peppers, 2 large onions. Chop moderately fine, sprinkle with 1 cup coarse salt and let stand over night. Drain off liquid and boil in diluted vinegar (equal parts vinegar and water), letting it boil up well. Drain from this liquid and cook in sweet vinegar, 1 pound sugar to 1 pint vinegar, spiced with cloves and cinnamon. Seal while hot. This quantity will make nine or ten quarts.—Mrs. G. C. Bishop.

Bread Omelet

To one slice dry bread, broken up and made soft with hot water, add one egg, a little butter, salt and pepper. Beat well and pour in skillet, having a little hot grease in it. Turn and brown both sides.—Subscriber, Ball.

Quick Pie Dough

Pie dough is much more quickly made if the grease is melted and water about the same temperature used and both poured into the flour at the same time; use the same amount of grease and water, stir with spoon and roll out and use soon. Just try it and see if it isn't just as good as to rub the grease in cold.—Mrs. C. E. Clark, Lime.

Three Helpful Hints

Don't worry if you happen to burn your bread or cake. Let it stand just a short time to cool, then take your little grater and lightly scrape it off.

The best way I have found to clean nickel.—Wash it with common coal oil and where a cloth will not do use a sink brush and follow up with a soft dry cloth. If there is any shine to it that will bring it out.

To clean the lime coating that forms in the teakettle boil a big handful of eucalyptus leaves hard for at least an hour, then wash out well. If the first boiling doesn't take it all out repeat. Try covering the spout.—Mrs. H. E. B. Galt.

White Pecan Pralines

Some one asked for recipe for pralines. If not too late I should like to send this one: 1¾ cups sugar, 1 cup maple sugar, ½ cup cream, 2 cups pecan nuts cut in pieces. Boil until first three ingredients reach 239 degrees Fahrenheit. Remove from fire and beat until thick and creamy. Add nuts. Drop from spoon in piles on buttered paper. — Mrs. H. Warren Shepard, National City.

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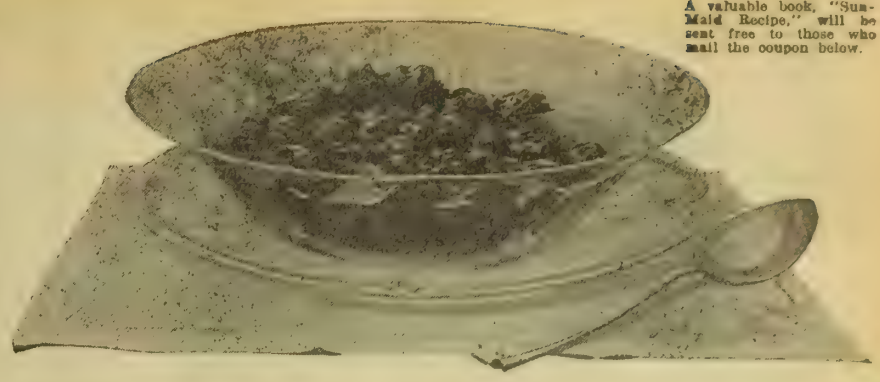
A valuable book, "Sun-Maid Recipe," will be sent free to those who mail the coupon below.



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The raisins are plump, delicious fruit-meats stewed so the juice forms a luscious sauce. Note recipe printed at left. A more alluring fruit dish never has been served in any home—nor any other food that's more effective in this way.

You'll serve stewed raisins every morning when you know the good they do.

Stewed Raisins

Cover one-half package of Sun-Maid Raisins with cold water and soak over night. In the morning add a slice of lemon or orange. Place on the fire in the same water in which they have been soaked and allow to cook slowly for thirty minutes. Sugar may be added, but it is not necessary, as Sun-Maid Raisins contain natural fruit sugar. Serve with or without cream.

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Raisins are nuggets of food-iron — and food-iron is an essential to good blood.

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Butter	1 Year	1,130.66 Pounds
Milk	1 Year	23,096.60 Pounds

His seven nearest dams average:

Butter	7 Days	30.47 Pounds
Milk	7 Days	627.60 Pounds

His calves are just what we could expect from a long succession of great sires and dams, and in their present state of development fulfill every promise in the pedigree of their great sire.

Good business judgment will eventually prompt you to place at the head of your herd a bull of Aaggie Acme-De Kol of Valley Mead breeding.

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Dam—K. S. P. Queen Burke, a daughter of King Segis Pontiac. Her record is 31.12 lbs. of butter from 584.3 lbs. of milk in 7 days at 4½ years of age. His seven nearest dams average 31.3 lbs.

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SHOW TYPE and PRODUCTION

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His sire is the 36 lb. Morris bull—Sir Aaggie De Kol Acme.
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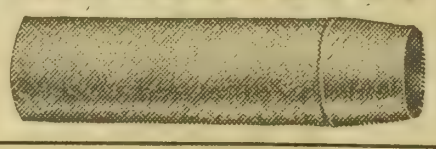

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Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins

October 4, S. O. Walker, Visalia.
October 5, Robt. T. Curtis and Son, Tulare.
October 6, Alex Whaley, Tulare.
October 21, Robt. N. Clapp, Nuevo.
November 3, A. W. Morris & Sons, Inc., Woodland.
November 9, Palo Alto Stock Farm, Palo Alto.

Herefords

October 27, Pacific Coast Hereford Breeders' Association, California National Livestock Show, San Francisco.
November 1, J. H. Cazier and Sons, Sacramento.

Shorthorns

October 28, California Shorthorn Breeders' Association, California National Livestock Show, San Francisco.
November 2, W. M. Carruthers, Live Oak.

Two noteworthy 305 day records have recently been completed in the herd of registered Holsteins owned by M. J. and B. A. Edwards, Ripon. The nine year old cow Sarcastic Dora of Millbrae made in 305 days 860 pounds butter from 20,836 pounds milk, was never milked more than three times per day and cared for under ordinary herd conditions. She is sired by Sarcastic Legislator, a grandson of Sarcastic Lad, the grand champion bull at the St. Louis Exposition. Squaw Queen De Kol 2nd, also a mature age cow, made 665.61 pounds butter from 16,031.6 pounds milk in 305 days.

Adirondac Wietske Dairy Maid, the famous 41 pound cow owned by Bridgford Holstein Company, Patterson, is making another wonderful yearly record. In the first 100 days on test she has to her credit 11,025 pounds of milk, several hundred pounds ahead of her last year's record, and is still milking over 100 pounds per day. In the same herd Ormsby Mechthilde Prilly, a junior three year old daughter of the three times grand champion King Segis Alcartra Prilly, tested during a hot spell, made 26.71 pounds butter from 497.6 pounds milk in seven days and is now milking over 80 pounds per day. Louise Alcartra Prilly, also a daughter of the Prilly bull, has now been on yearly test eight months and has to her credit 17,993 pounds milk and is still milking 65 pounds per day. Another daughter of the same bull, Bessie Veeman Alcartra, has to her credit 16,261 pounds milk in seven months as a senior two year old and is now milking over 75 pounds per day. Both of these heifers promise to finish with right up around 24,000 pounds milk, which will place them right close to the top in their respective classes.

J. M. Christen, Martinez, a pioneer breder of registered Holsteins in Contra Costa County, will make his initial appearance at the California state fair this year with a few head of young things.

Tuesday, October 4, is the date set for the dispersal at public sale of the herd of registered Holsteins owned by S. O. Walker, Visalia. The herd numbers approximately 65 head, including the famous bull King of the Black and Whites and about 30 of his daughters.

The sale of about 45 registered Holsteins from the good herd of Robt. T. Curtis & Son, Exeter, will be held on Wednesday, October 5, at the Tulare Sale Pavilion, Tulare. Several splendid young daughters of the $12,000 bull King Korndyke Pontiac 20th and the noted 34 pound four year old Coloma Beauty Butter Maid will be included in the sale list.

The series of Holstein sales in Tulare County will be rounded out by the dispersal of Alex Whaley's choice herd at Tulare on Thursday, October 6. The high quality of this herd has become well known through the excellent official records made by its members, the uniformly high class representation it has afforded in some of the best public sales, and the succession of high record and popularly bred herd sires used over a period of years.

A. W. Morris & Sons Corporation, Woodland, will make a public sale offering of registered Holsteins on Thursday, November 3. The number to be sold has not yet been definitely fixed, but the event promises the most sensational offering ever made by the Morris firm in an individual sale.

Robt. N. Clapp, proprietor of Sycamore Acres, Nuevo, announces a public sale of approximately 70 head of registered Holsteins from his high class herd on Friday, October 21. This herd is rated as one of the strongest in the country in the blood of King Segis and contains a number of nationally famous show ring winners.

On Wednesday, November 9, the first public sale of registered Holsteins from the Palo Alto Stock Farm, Palo Alto, will be made on the farm. This herd, owned by the well known banker Herbert Fleishhacker, San Francisco, has increased in size until it is one of the three largest in California, and under the management of E. N. Brown is shaping to become a large factor in the breed's affairs in California.

Sharon Rose Novena, the first cow sold in the Rosemaines Rancho dispersal at Riverside last October, has recently freshened and on official test has over 31 pounds butter to her credit in seven days. She is now owned by Robt. N. Clapp, Nuevo.

Nevada will compete with California and other coast states for the premier honors in the Hereford and Shorthorn classes at the state fair at Sacramento in September. The well known Nevada Hereford Ranch at Wells, owned by J. H. Cazier and Sons Company, has entered 17 head, a number of whom are by the famous young herd bull, Beau Blanchard 76th, for which they paid $10,000 as a yearling calf. He has won prizes at some of the big shows in the East. The Warm Creek Land and Livestock Company, also of Wells, Nevada, has entered 15 Shorthorns in the state fair competition.

The Virden Packing Company will offer three handsome trophies in as many livestock classes at the 1921 California state fair. The trophies will be given to the best car lot of swine, best car lot of steers and to the best single steer.

Plans for a goat exhibit to eclipse anything yet offered in California are being made for this year's state fair. A movement, fostered by Miss Alice M. Brown of Sacramento, has resulted in assurance that many Southern California breeders will enter their herds in the competition.

The Central California Milk Goat Breeders Association is urging its members to cooperate with the state fair officials in making this phase of the fair a success. A meeting of all breeders, under auspices of the association, is to be held at the fair on September 7.

For the second time in the history of the California state fair hogs from the Middle West will be shown in competition with coast bred swine. Fair officials point to the fact that this is an indication that breeders have come to recognize the fact that the state fair is a prominent and profitable place to exhibit their best animals. It also proves that the state fair has assumed national importance.

Whittier, Calif.,
July 30, 1921.

California Cultivator,
115 N. Broadway,
Los Angeles, Calif.
Dear Sirs:

Some few days ago we received the beautiful silver cup you had H. P. Davidson, jewler, send us. The cup certainly is a dandy, and we are proud to be the winner of such a fine prize. It is no wonder that all the dairymen are trying to win the Cultivator monthly prizes. We are doing our best to get another cup before the end of the competition.

We are now having the cup engraved and later will mail you a photo for your files.

We wish to thank you for the fine cup and hope to have the privilege of thanking you again soon for that other cup we may win.

Very truly yours,
F. F. Pellissier,
By Frank L. Pellissier.

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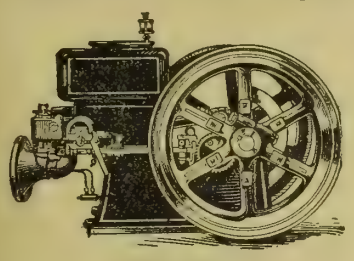

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SOUTHERN CALIFORNIA FAIR

Livestock men are getting solidly behind the management of the Southern California Fair to be held at Riverside, October 11 to 16. They recently held a meeting in Riverside, and from the canvass made at that time we are promised one great exhibition of California's livestock industry. Secretary Van Pelt writes:

"The National Duroc-Jersey Record Association futurity, the Poland-China Promotion Show, a special futurity of the American Berkshire Association and a special of the American Hampshire Swine Association have all been filled, which assures much enthusiasm in the ranks of the various breeders.

"In the junior department there are uniform classifications for each breed, with liberal prize offerings. The interest in this department far exceeds that of any previous year and reflects the increased interest which the boys and girls under the guidance of the far seeing leaders in agricultural education, are taking in handling pure bred animals. Spirited contests will be held in feeding, fitting and showing, and judging. The last named contest is of state wide scope and evidences much interest. In addition to these the state and national associations of each breed have offered specials of five prizes each for boars and gilts.

"The agricultural tent, the largest ever seen in California, will be greater and more pretentious this fall, as numerous features have been proposed."

CALIFORNIA NATIONAL LIVESTOCK SHOW

The California National Livestock Show, to be held on 12th and Market Streets, San Francisco, October 22 to 30, will require 330,000 square feet of canvas to house a modern stock ranch transferred from the range to the heart of San Francisco. More than a thousand entries are expected. The great show held two years ago in the California Building on the Marina sold itself in every way to the 50,000 people who paid their admission. This year's show will be greater and more accessible in every way. A tent 520 feet long will be required to take care of the cattle entries alone. Stock from many states will be in place on the opening date. One great entry of cattle is expected from as far east as Ohio, and all the western stock states will be represented.

DAIRY INDUSTRY IN NEW ZEALAND EXPANDING

The output of butter and cheese in New Zealand has increased nearly tenfold in the last 20 years. According to the London Dairy Journal, one of the factors responsible for the success of the dairy industry there is the warm and equable climate which makes it unnecessary to house stock during the winter months.

The total number of cattle in New Zealand in 1919 was 3,035,478, of which 863,588 were dairy cattle. There were 214 butter factories in 1919, with 24,789 suppliers, and 384 cheese factories with 10,026 suppliers. During the 1918-19 season 406,050 hundredweight (112 pounds) of butter and 1,147,780 hundredweight of cheese were exported. The local consumption of butter is estimated to be 20 pounds per capita. Nearly every household can afford to use butter throughout the year. Margarine is practically unknown in the Dominion.

VALUE OF LIVESTOCK SHOWS GREAT INCREASE IN DECADE

(Continued from Cover Page)

comparison since they relate in each case to the production of a calendar year. The egg production given above includes estimates for farms which reported chickens on hand but no eggs produced. The number of chickens raised in 1919 was 473,923,935, as compared with 460,605,709 in 1909. This represents an increase of 13,318,226, or 2.9 per cent. Chickens raised do not include those hatched and sold as baby chicks, but do include baby chicks purchased and raised, as well as all other chicks hatched and raised, even though they may have been consumed or sold before the end of the year.

Built for the Belt

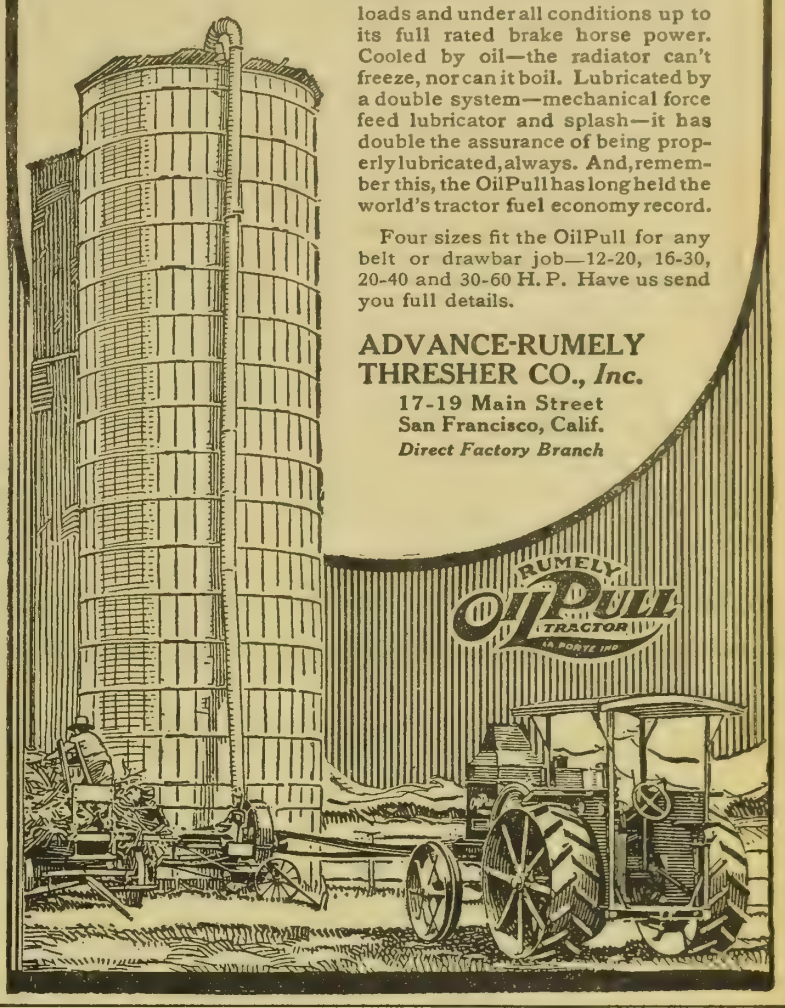
The Rumely OilPull tractor is especially suited for belt work.

The belt pulley is unusually large, is driven directly off the crankshaft with no bevel or intermediate gears and is placed on the right-hand side, well up, so that the operator has a clear view and can line up, start and stop the pulley from the seat.

The speed regulation of the OilPull is close—as close as the best steam engine ever built. It is governor controlled—the speed of the engine automatically and instantaneously regulated to meet every change in the load. It automatically holds the belt at the correct speed all day—no speeding up or slowing down as the load varies.

It has a shifting front axle—plenty of belt clearance, with no sacrifice of design or construction.

In fact, it is fully as well adapted for belt work as for drawbar work.



Guaranteed to burn kerosene at all loads and under all conditions up to its full rated brake horse power. Cooled by oil—the radiator can't freeze, nor can it boil. Lubricated by a double system—mechanical force feed lubricator and splash—it has double the assurance of being properly lubricated, always. And, remember this, the OilPull has long held the world's tractor fuel economy record.

Four sizes fit the OilPull for any belt or drawbar job—12-20, 16-30, 20-40 and 30-60 H. P. Have us send you full details.

ADVANCE-RUMELY THRESHER CO., *Inc.*
17-19 Main Street
San Francisco, Calif.
Direct Factory Branch

Let the SUN give you plenty of HOT WATER

DAY & NIGHT

SEEMS impossible, doesn't it: But a DAY & NIGHT Solar Heater will actually deliver an abundance of piping hot water in your home every hour of the twenty-four, because it concentrates and stores the heat of the sun's rays. Thousands of successful installations in Southern California provide actual proof.

Think of the saving in gas this system insures you—fully three-fourths of your expense of heating water. Think what a necessity the DAY & NIGHT is if you have no gas supply. Adapted to country or city home—mansion, bungalow. Can be installed in new buildings or old; no expense after first cost. Write for illustrated folder giving detailed explanation of the DAY & NIGHT. Address Dept. E.

Day & Night Solar Heater Co.
632 Metropolitan Bldg., Fifth and Broadway
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AUCTION

160 Head Dairy Cows and Heifers 160

3 Holstein Bulls 7 Horses Implements

At our Dairy, known as the Big Four Ranch, 30 miles west of Fresno, 18 miles east of San Joaquin, 12 miles west of Carruthers, 2 miles north and 2 miles west of

Burrell, Fresno County

Wednesday, August 17th, at 9 a.m.

The owners are closing out their splendid dairy herd and all equipment on above date, POSITIVELY WITHOUT LIMIT OR RESERVE. Including 120 head of choice, young, well bred dairy cows, nearly all Holsteins, a few extra good Durhams, all in fine condition, 40 head being strictly fresh and milking heavy and 40 head of heavy springers. The owners have raised a large number of these cows and bought nothing but the best from other herds. These cows are bred to come in when butter fat is at the best price. There are 25 head of 2½ to 3 year old Holstein heifers, all heavy springers, coming in with their first calf. Fifteen head of yearling Holstein heifers. One pure bred Holstein bull 3 years old and 2 other high grade Holstein bulls. This is a wonderful herd of dairy cattle and buyers looking for cattle above the average will not be disappointed in the herd.

Seven head of good ranch stock, young and clean. New Fordson tractor, used only 25 days; 200 TONS of ALFALFA HAY.

IMPLEMENTS

No. 22 De Laval separator and engine, 2 Aermotor engines, 3 flat rack wagons, double work harness, 2 McCormick mowers, Adriance rake, hay derrick, walking plow, Oliver sulky plow, all dairy equipment and other implements. CHEVROLET AUTO and new trailer.

TERMS CASH FREE LUNCH AT NOON

On account of the size of this sale it will commence promptly at 9 a. m. Be on hand early and get some of the bargains. Don't miss this Genuine Closing Out Sale.

ROTICCI BROS., Owners.

RHOADES & RHOADES, Auctioneers

Office—1501-3-5 South Main Street Phone Pico 2375

LOS ANGELES, CAL.

Bred Guernsey Heifers and Cows

Guaranteed Safe in Calf to

Masterpiece of Edgemoor

The Greatest of All Guernsey Bulls—For Which

$40,000 Has Been Refused

Masterpiece was sired by Royal Rose King of Edgemoor who was by Imp. Itchen May King, grand champion of the P. P. I. E. in 1915 and grand champion National Dairy Show in 1920. Royal Rose King of Edgemoor was out of Belladia who made 934 lbs. of butter fat in 365 days in the certified milking barn.

Masterpiece is out of Jessebel of Edgemoor whose record of 12,434.9 lbs. of milk and 748.3 lbs. of butter fat at two years of age makes her the best daughter of the great Ne Plus Ultra.

Masterpiece combines great show-type with high production.

The females we offer for sale run high in the popular May Rose blood and Masterpiece combines all of the great May Rose blood lines.

The heifers are from good A. R. dams and will make excellent records. We are offering Californians a chance to get Guernsey females that cannot be duplicated and the price is right.

All animals tuberculin tested and guaranteed clean. Call or write at once.

EDGEMOOR FARMS

W. H. Dupee, Owner

Santee San Diego Co. Cal.

Herd Bulls

Harris Standard 2d

Beau Blanchard 76

Nevada Hereford Ranch

J. H. Cazier & Sons

Wells, Nevada

A government accredited herd. No reactor in 16 years. A herd whose record in the show and sale ring is only surpassed by the esteem accorded its productions by cattlemen. We can furnish bulls or females to fill any need—and at sound prices. Visit our herd or write for information.

King Segis Pontiac Jannek

A proven sire of show winners and high producers is available for service to high class Holstein cows.

SANTA MONICA DAIRY CO.

Farm is on Washington Blvd. 2 miles east of Venice. Santa Monica

RECORDS AS A BASIS FOR DAIRY CATTLE VALUES

(Continued from Page 149.)

cattle breeders have come to estimate cattle values on the basis of breeding and production, the man engaged in the business of producing cattle is standing in his own light if he fails to value such records when purchasing or developing a herd.

The principal criticism offered against a general practice of official testing is the cost of preparing cattle for test, the added labor and the cost of supervision. It is true that it costs money to give cattle an official test but with the growing demand from purchasers for tested cattle and the discrimination being manifested between cattle with extensive backing and those with lesser backing the question of official testing looms large before California dairymen.

To more definitely demonstrate the value of tested cattle as compared with untested cattle, the writer, through the courtesy of C. L. Hughes of the California Breeders Sales and Pedigree Co., examined the sale reports of 12 Holstein sales held in the state the first six months of 1921. These sales included between 900 and 1,000 Holstein females ranging in ages from calves but a few days old to cows over ten years. Some sold without the benefit of a tuberculin test and some went through the ring as known reactors—the great majority, however, were tuberculin tested. On the whole, however, the cattle sold can be regarded as a representative lot and the prices paid can be considered equally representative. For the purpose of this article, the cattle were listed by ages and each age was grouped for production records as follows: Untested, seven day records of 20 pounds or less, 20 to 24 pounds, 25 to 29 pounds and 30 pounds or over. The bred and unbred heifers were grouped according to the production records of their dams.

Table I

Records	No.	Average Price
Two Year Olds in Milk		
Untested	44	$ 270.90
20 lbs. or less	12	543.75
20-24 lbs.	3	933.33
Three Year Olds		
Untested	77	$ 325.17
20 lbs. or less	30	468.00
20-24 lbs.	6	1320.00
25-29 lbs.	8	738.75
30 lbs. or over	1	1200.00
Four Year Olds		
Untested	39	$ 347.78
20 lbs. or less	19	538.68
20-24 lbs.	15	550.00
24-29 lbs.	4	570.00
30 lbs. or over	1	800.00
Five Year Olds		
Untested	32	$ 272.13
20 lbs. or less	17	373.52
20-24 lbs.	11	482.72
24-29 lbs.	7	796.42
30 lbs. or over	----	.....
Six Year Olds		
Untested	35	$ 340.86
20 lbs. or less	7	387.14
20-24 lbs.	23	496.95
24-29 lbs.	7	572.14
30 lbs. or over	2	1462.50
Seven Year Olds		
Untested	9	$ 511.00
20 lbs. or less	12	299.58
20-24 lbs.	3	650.00
24-29 lbs.	18	1295.00
30 lbs. or over	2	1500.00
Eight Years and Older		
Untested	19	$ 221.00
20 lbs. or less	16	283.12
20-24 lbs.	19	333.94
24-29 lbs.	13	460.38
30 lbs. or over	5	843.00

255 untested cows 2-8 years old averaged $310.33.

300 tested cows 2-8 years old averaged $504.11.

From the above table several interesting conclusions can be drawn and we urge a careful study of the facts disclosed therein. It will be noticed that in each divisional group the tested females sold for more money than untested females, with the exception of the untested seven year olds. The reason for the $511 average on the nine head listed is due to the fact that one cow sold for $2,000. In explanation of that price it can be said that this particular cow was one of a group of sisters, all of which, save herself, had been given splendid records and as she was one of the best individuals of the group it was assumed that she was capable of making a fine record if given the opportunity.

In the case of the two year olds the official record of 20 pounds or less doubled their value, and the few with records above 20 pounds had their values increased several fold. Forty-four untested two year olds averaged $270.90 and 15 tested two year olds averaged $621.66. With the three year olds the 77 untested ones averaged $325.17 and the 45 with records averaged $646.11. Almost the same proportionate values hold for the four year olds, with the untested stuff making $347.78 while 39 with official records averaged $553.71. Practically $220 a head was added to the value of the tested five year olds as compared with the ones of like age not having records. With the six year olds the difference amounted to $200 per head and with seven year olds practically $400 difference is disclosed. The comparatively low average for untested aged cows can be explained by the fact that buyers are shy of making heavy investments in cows that have reached considerable age without a record.

In general the above figures would seem to indicate that at present charges a record will on the average pay for itself—and more, depending upon the number of cows carried on test at the same time—it being explained that the overhead can be reduced in proportion to the number of cows tested. But the real value of giving a cow a record is not, on the average, the increase to her as an individual, but rather the increased value the offspring from tested cows have over offspring from untested dams—and it should be borne in mind that this added value remains in force as long as the dam continues to produce.

Table II has been prepared to throw some light on the value of a tested dam's produce over the produce from untested dams.

Table II

Open Heifers*

Production of Dams	No.	Average Price
Untested	81	$225.37
20 lbs. or less	52	275.25
20-24 lbs.	48	296.25
25-29 lbs.	26	378.45
30 lbs. or over	10	547.50
Bred Heifers		
Untested	46	$275.00
20 lbs. or less	39	413.59
20-24 lbs.	31	417.09
25-29 lbs.	22	548.40
30 lbs. or over	9	799.44

*Includes calves from a week old up.

From the above table it is plain that buyers are demanding young things from proven ancestry and that they are willing to pay liberal prices for breeding with records. In the case of open heifers, those from untested dams averaged $225.37 and 136 head from dams with records averaged $322.42—more than $100 difference. The 46 bred heifers from untested dams were valued at $275 per head and 101 from tested dams averaged $478.41—more than $200 difference.

In considering the above figures it should be borne in mind that the increased values noted can be regarded as additional to the added value a record may give the dam, and that it is fair to assume that such increase will continue to be recorded for the female offspring over a period of years.

There is another angle relating to the value of official records in a herd that has been demonstrated in a number of dispersal sales the past year. Generally, within a herd one or two herd bulls have seen extensive service and at the time of dispersal are represented by daughters of varying ages. If a number of the older daughters have been tested, such fact invariably adds to and helps the sale of their younger sisters that have not reached the age of testing.

IMPERIAL COUNTY COWS TESTED IN JUNE

Tester D. W. Adams reports:
June brings a slightly decreased average of butterfat per cow under that of last month. The excessive heat is undoubtedly the chief cause. Also many of the dairymen figure to have a large part of their cows dry at this time.

Some grain and concentrates are being fed. Mr. Griffin, whose herd tops the list this month, is getting good results with "cold press" cotton seed. This feed is identical with the whole cotton seed except that the oil, which is somewhat injurious to stock in hot weather, is extracted.

Warne & Son are keeping up their heavy milk average by feeding fresh beets.

As usual this month there have been several "star boarders" that have lost their happy homes and served a more useful end.

470 cows tested.

731.7 pounds milk average per cow for month.

28.9 pounds butterfat average per cow for month.

3.9 per cent test average per cow for month.

41 cows produced above 40 pounds fat for the month.

SAN JOAQUIN COWS ON TEST

Geo. Wolf, cow tester for the dairy department of the San Joaquin County farm bureau, reports for the month of June 486 cows tested for 17 members. Of this number 57 made 40 pounds butterfat or better during the month. Four produced over 60 pounds fat. These were Lady Washington, a Holstein belonging to Fottrell Bros., who gave 80.9 pounds fat during the month; Low, grade Holstein, belonging to F. M. Thorpe, Ripon, 67.1 pounds fat; No. 508, Jersey, belonging to N. H. Lock, Lockeford, 66.1 pounds fat; Buster, grade Holstein belonging to Bert Eskes, Ripon, 60.7 pounds fat.

Mr. Wolff writes:

"Of considerable interest to dairymen would be the record completed by the pure bred Holstein cow Blaney Pondyke Aralia, owned by E. B. Goodwin of Manteca. During the ten months of test she has produced 13,685 pounds of milk and 436 pounds of fat, which is equal to 545 pounds of butter. Not only is this a creditable showing but also a persistent record, for during the last month of lactation, milked only once a day, she produced 33 pounds of fat. At the present time she is heavy in calf sired by one of the good sons of Prince Gelsche Walker.

It is not always the pure bred cow carrying off the laurels. The grade Holstein cow Jumbo, owned by G. A. Grant of Ripon, just completed the ten month record with 12,143 pounds milk, producing 500.2 pounds butterfat, which is equivalent to 625.3 pounds of butter. Her average per cent test was 4.1 per cent. Without computing the number of miles a cow of 625.3 pound packages of butter would cover if set end to end or the number of tanks it would take to convey 12,143 pounds of milk, or the number of people this would feed, I can say that the grade cow Jumbo has produced more than her own weight of milk each month, and has averaged a little better than two pounds of butter daily, considering the fact that Jumbo carried a calf seven and a half months during the ten months on test.

Two of Jumbo's stable mates are also in the race for laurels. The grade Holstein cow, Jane, just completed a ten months record with 8,826 pounds of milk, producing 527.3 pounds of butter, and the grade Holstein cow Beauty produced 8,065 pounds milk and 420.9 pounds butter in ten months, carrying a calf seven and a half months.

Let me draw your attention to the fact that the three cows above mentioned received only ordinary care and food, and were milked but twice a day; but last, but not least, is that they have for a sire a pure bred bull.

The Holstein breeders of California should find cause for satisfaction with the condition of their business from the figures of their public sales for the first six months of 1921. Their sales through California Breeders Sales and Pedigree Co. show a total of 1,057 head sold for an average of over $385, which may be taken as a fair average worth of all registered Holsteins in the state, as many of these sales were dispersal sales which included old and defective cows, and a large number of very young calves, both bulls and heifers. The prices ranged from $9,250 down to $25, but with very few calves selling under $100.

Cattle Owners!

Save Your Calves

We will send you absolutely free valuable information on

Abortion in Cows

We will tell you how this disease can positively be prevented and overcome—why two treatments a few days apart are sufficient and how you can apply it yourself at small expense.

We Guarantee Our Treatment

WRITE TONIGHT

THE STREBOR LABORATORIES
27A East Monroe Street Chicago, Ill.

YOU CAN'T CUT OUT A BOG SPAVIN OR THOROUGHPIN but you can clean them off promptly with

ABSORBINE
TRADE MARK REG. U.S. PAT. OFF.

and you work the horse same time. **Does not blister** or remove the hair. $2.50 per bottle, delivered. Will tell you more if you write. **Book 4 R free. ABSORBINE, JR.,** the antiseptic liniment for mankind, reduces Varicose Veins, Ruptured Muscles or Ligaments, Enlarged Glands, Wens, Cysts Allays pain quickly. Price $1.25 a bottle at druggists or delivered. Made in the U. S. A. by

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Ultimately
Why Not Now?
We want everyone to see this wonderful herd
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DIAMOND G HEREFORDS

A few choice young bulls, big, heavy-boned husky fellows sired by DON PERFECT 2ND, one of the best sires in the West. Priced right and guaranteed.

H. H. Gable Esparto, Cal.

Poland China Hogs For Sale

Fall boars, sired by Yates Big Orphan and out of Glenn Chief and Long Jumbo sows. Guaranteed breeders.

25 spring gilts of March and April farrow, sired by Yates Big Jones and Young Bob. Tops from 100 head.

Tried sows, bred for August and September farrow, bred to Yates Big Jones and Young Bob. All in perfect breeding condition.

This stock is all priced in accordance with present financial conditions and is cholera immune.

Owner:
Fred. A. Clark, Orland, Cal., R.F.D. No. 2
Herdsman: R. J. Yates

Pure Bred Rams and Ewes

For sale cheap. Overstocked. Large smooth frames. From the very best strains of this country and France. Immediate delivery. P. O. Address

Windell Orchards, Glenn, California
8 Miles South of Hamilton City

For Profitable Durocs

As we have sold out of bred sows and gilts, we are now offering big growthy fall pigs, either sex, at attractive prices.

D. G. Cummins & Son
Route 1 Visalia, Cal.

BREEDERS

do not overlook the

North Bay Counties Fair

August 24 to 28 Santa Rosa, Cal.

$5000 in Cash Prizes for the Regular Classes. Many Special Cash Prizes in Addition

Unloading platform at Cotati on the main railroad line adjoins the grounds.

Free straw for bedding.

10,000 average daily attendance last year.

Big Industrial, Horticultural and Automobile Shows

This is one of the great natural dairy and beef raising districts of the Coast as grass is green 12 months of the year. Little Sonoma County ranks fifth in dairy products in the state. All exhibitors last year made many sales both at the fair and afterwards. This is practically virgin territory in all lines of livestock.

Fair will be held inside the monster $250,000 auto speedway bowl. Plenty of free shows, horse, motor cycle and auto races.

EVERYTHING FREE TO EXHIBITORS AND GROOMS

Under Direction of the

Sonoma County Fair Association

J. Francis O'Connor, Pres. L. L. Putnam, Sec'y

AUCTION
Orange Grove

Friday, August 19th, at 10 a.m.

Corner of Holt and Monte Vista

POMONA

In order to settle up the estate we are instructed to offer the following described properties:—4.39 acres facing on Holt Avenue on the north and Monte Vista on the west, all in Valencias and Navels; 4.45 acres adjoining on the south facing Monte Vista on the west. This parcel of land is also set to Valencias and is improved with a new four-room cottage, dairy barn equipped for 40 cows, milk house, 4 large board corrals, etc. An abundance of cheap water for domestic and irrigation purposes. The location of this property is excellent being on the Riverside Boulevard, convenient to Los Angeles, Pasadena, etc. The trees are in excellent condition. To anyone wishing to combine dairying and orange growing this is a wonderful opportunity. Terms on real estate one-half cash, balance to suit. You are cordially invited to inspect this property before sale. The two parcels of land will be sold separate. In addition to the land the following described

LIVESTOCK

will be sold: 11 head grade Holstein cows, pure bred cow, her 2 year old heifer and bull calf, pure bred Holstein bull, lot of Poland China hogs, splendid young 3,200 pound work team, implements, etc.

Mrs. W. C. Lookingbill,
D. F. Velzy,
Owners

Rhoades & Rhoades
Auctioneers
1505 South Main St., Los Angeles, Cal.

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The direct selling method from producer to consumer, and a clearing house for over 40,000 subscribers. Weekly Liner rates: Single insertion 4½ cents per word; 45c per issue minimum charge. Cash with Order

Mail all classified copy to Los Angeles Office.

POULTRY

Day Old Pullets—Here is your chance to get day old White Leghorn and Ancona chicks guaranteed at least 90 per cent pullets. We are taking orders fast for August and September delivery. We also have R. I. Red and Barred Rock chicks but do not separate the sex. All chicks are from strictly thoroughbred laying stock and are hatched right and shipped by Special Delivery Parcel Post. Send for prices and get your orders in at once. We also have a limited number of pullets from two to four months old and yearling hens. Orange County Hatchery, Santa Ana, California.

S. C. White Leghorn Baby Chicks from the heaviest laying (Hoganized) stock. Safe delivery live vigorous chicks guaranteed. No money in advance; pay on delivery. Price from July 15 to August 31, $4.00 per 25, $8.00 per 50, $15.00 per 100. Special prices 500 and 1000 lots. Largest electric hatchery in the world. Established 1898. MUST HATCH INCUBATOR COMPANY, 438 Seventh Street, Petaluma, California.

Petaluma Hatchery, established 1902 by L. W. Clark. White Leghorn chicks from heavy laying free range stock during August 17c each, $8.00 per 50, $15.00 per 100, $140.00 per 1,000 prepaid. Brown Leghorns one cent more than White Leghorns. We positively guarantee safe arrival and full count of good strong chicks and no questions asked. L. W. Clark, 615 Main Street, Petaluma, California.

Fine Young King Pigeons $3 a pair. Guineas $5 a pair. Wyandotte, Partridge Rock and Leghorn eggs $3 a setting. Are disposing of some of our breeding geese; offering them at a bargain price. Yearlings $15 a pair, 2 year old birds $20 a pair. All bred from imported stock. Send for catalog. Paradise Valley Poultry Ranch, National City, California.

It's no wonder so many poultry raisers make a failure of the business. Without any knowledge of raising poultry people will branch out expecting to make a success. By putting in practice the valuable contents of POULTRY FOR PROFIT, $1.00 postpaid, success is assured in the poultry business. Cultivator Publishing Company, Los Angeles, California.

White Leghorn Baby Chicks — Walter Hogan stock. We get all our eggs from one flock of over 4,000 Walter Hogan hens that have been carefully Hoganized. Our specialty is first class White Leghorn hens that satisfy our customers. We will have chicks September 1st. Lyon Hatchery, Gardena, California.

Baby Chicks—Barred Rocks and Reds, 25, $5.00; 50, $9.50; 100, $18.00; White Leghorns, 25, $4.25; 50, $8.00; 100, $15.00. Shipped every Monday, Parcel Post, special delivery, prepaid. Established 1915. Hargett & Son, Route 2, Box C, Compton, California.

Chicks Every Week from good layers. Fall Broilers pay. Pullets make good layers. R. I. Reds, Barred Rocks, White Leghorns. Safe arrival guaranteed. Write for circular. Stubbe Poultry Ranch & Hatchery, P. O. Box 67, Palo Alto, California.

Baby Chicks from my carefully selected, heavy laying strain of pure bred S. C. White Leghorns. Am booking orders now for August and September delivery. Write for prices. J. R. Heinrich Poultry Yards, Arroyo Grande, Cal.

I Am in the Market for 100 to 200 Black Minorca Pullets from 3 to 4 months old. I do not want just black chickens but Black Minorcas. J. H. Kaufman, R. 1, Box 6, Newman, California.

Baby Chix from selected, mature S. C. White Leghorn hens. Safe arrival, full count, strong chix, insured. Hawley's Hatchery & Poultry Farm. Route A Box 315A, Lodi, California.

Barred Plymouth Rocks — "Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Vodden, Los Gatos, California.

White Leghorn Baby Chix from Petaluma's heaviest producing stock. We guarantee safe arrival. Literature on request. Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

March-April Pullets—Barred Rocks, $1.50 and $2.00 each. Fairmead Poultry Farm, Fairmead, California.

Success in business is attained by experience and knowledge. The poultry business can be made to pay by following the teachings and information contained in POULTRY FOR PROFIT, $1.00 postpaid. Cultivator Publishing Company, Los Angeles, California.

SEEDS AND PLANTS

Reliable Seeds—Ask your dealer or write for our Reliable Seeds and instructive catalog. AGGELER & MUSSER SEED COMPANY, 620 S. Spring Street. Branch —767 S. Central Avenue, Los Angeles, Cal.

CORN HARVESTER

Corn Harvester cuts and piles on harvester or winrows. Man and horse cuts and shocks equal corn binder. Sold in every state. Only $28 with fodder tying attachment. Testimonials and catalog FREE showing picture of Harvester. Process Harvester Co., Salina, Kansas.

LIVESTOCK

Shorthorns, Shropshires, Berkshires, Shetland Ponies, Bronze Turkeys. W. P. Rocks, Butte City Ranch, Box C, Butte City, Glenn County, California.

Polled Herefords and Durocs — Diablo Stock Farm, G. W. Emmons, Prop., Danville, California.

FARM LAND FOR SALE

CATTLE AND SHEEP MEN

A real cattle range of 4,000 acres, within 100 miles of San Francisco; in the heart of the best beef producing section of Central California; excellent improvements, scales, etc.; $12.75 per acre.

FOR LEASE

One of the ten best cattle ranges in the state; 25,000 acres, consisting of 20,000 acres range, 5,000 acres level valley; great feed country; very accessible, remarkably well watered.

A good winter sheep range; capacity 15,000 head. On long term lease.

DAVID J. STOLLERY
formerly Secretary California Cattlemen's Association
222 Sharon Bldg., San Francisco.
Phone Sutter 1954.

CALIFORNIA IRRIGATED LANDS

Irrigation plus California climate eliminates chance in farming. Let us tell you about Safe Farming on Sutter Basin Irrigated Bottom Lands. Write for literature to Land Department, SUTTER BASIN COMPANY, California Fruit Building, SACRAMENTO, or to W. L. White, 509 Balboa Building, SAN FRANCISCO, or to C. D. Saunders, 509 Security Building, LOS ANGELES.

Ten Acres Full Bearing Apricots and Peaches—30 tons 'cots this year; 6 room modern house, 2 room tent house, barn, garage, chicken pens, 100 hens. Located 1½ mile east of Hemet on Florida Avenue. Mtg. $3000. Will consider mostly exchange, mostly for rental property or smaller home clear, in any good Southern California town. Mrs. C. A. Lawrence, E. Florida Avenue, Hemet, California.

For Sale—40 acre ranch under three different irrigation systems. Two sets of buildings, would divide. Rich sandy loam suitable for alfalfa, fruit or gardening. Located in Monterey County in the Fort Romie Colony. Half mile from good grammar school; 4 miles from town. At $600 an acre. If interested inquire of owner, L. E. Pugh, R. F. D. Box 14, Soledad, California.

For Sale—San Joaquin Valley, 40½ acre alfalfa ranch in a prosperious alfalfa and dairy section of Fresno County, 30 miles southwest of Fresno, Kings River water. 30 acres seeded, fine stand. 4 room California house, domestic well, $250 an acre, half cash, balance 9 years at 7%. For full particulars write owner. P. Schilz, 3118 Humboldt Street, Los Angeles, California.

For Sale—Bargain in 10 acre ranch, if taken at once. Citrus, walnuts, deciduous, berries, rhubarb, hog run and pens, cow corral and shed, ¾ acre chicken run and equipment and two story house. Will take $5000.00 if party assumes small mortgage. Miss E. Erb, R. F. D. 2, Box 160, Ontario, California.

For Sale: 40 acre ranch, good water right, 32 acres in cultivation. Small orchard. For particulars address P. O. Box 31, Laws, California.

For Sale—80 acre ranch, well improved. Good soil, excellent water right. Terms reasonable. Price $16,000. Address P. O. Box 103, Laws, California.

For Sale — Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

CATTLE

For Sale — Several registered Guernsey bull calves, one old enough for service. Edgemoor Farm breeding, reasonably priced. Apply to Dr. J. A. Woodside, Santee, San Diego County, California.

Guernseys — Grape Wild Farms—Berkshires—Young bulls, from calf age up to 16 months old, of May Rose breeding and out of A. R. cows. Bred sows and gilts, service boars and pigs of both sexes for sale. Grape Wild Farms, Escalon, California. A. B. Humphrey, Proprietor.

Shorthorns bred for **Range Purposes** and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Berylwood Stock Farm—Breeders of registered Holstein cattle and Duroc-Jersey swine. Every cow an A. R. O. and T. B. tested. Bulls and females for sale. J. W. Snodgrass, Hueneme, California.

Yearly Record Holsteins—Bulls from 500 to 1,000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Some Choice registered Holstein heifers and bulls of serviceable age for sale. I. W. Scudder, Escalon, California.

Winsor Ranch Jerseys—Bull calves with production behind them, at reasonable prices. BONITA, CALIFORNIA.

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For Sale 40 rebuilt windmills, tanks, pumps, steel towers, cylinders, rods. Special new 1,000-gallon galv. tanks, $39.25; 2,000, $53.25; 3-in. irrigating pipe, $14.75; 4-in., $18.75; also used pipe. Why pay more? Demmitt, 120 N. Main, L. A.

For Sale—Pomona Pump, 28 head; 30 Holt tractor, Saunders plow, disk cultivator. Clarence Wagner, Terra Bella, California.

For Sale — Fordson Tractor, last year's. Address F. Erbes, 7005 Hazeltine, Van Nuys, California.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

TREES

FOR SALE — 100,000 SOUR ORANGE SEED BED STOCK; WASHINGTON NAVEL, VALENCIA LATE ORANGES AND EUREKA LEMON TREES; ALSO FUERTE, LYON, PUEBLA AND DICKEY "A" AVOCADO TREES. T. J. WALKER, FIRST NATIONAL BANK BUILDING, SAN FERNANDO, CALIFORNIA.

For Sale—Grafted walnut trees, also citrus and deciduous trees. Order now for 1922 delivery. Get my prices. Ketscher's Nursery, 1101 E. 4th Street, Santa Ana, California. Phone 572-W.

Citrus Nurseries, Murphy Oil Company, East Whittier California. Selected stock for sale; inspection invited.

DUROC-JERSEYS

Weanling Boars and Gilts by Pathfinder Wonder (Great Wonder I Am ex an 800 lb. Pathfinder sow) for $10 each. Bred sows and gilts. Derryfield Farm, Capital National Bank Bldg., Sacramento, California.

Greenwood Farm Durocs — Moderate prices on bred gilts and weanling boars. Select individuals. Most popular breeding. H. C. Witherow, Mgr., Live Oak, Sutter County, California.

Boyanna Big Type Durocs — Breeding stock, priced right for sale. Inquiries invited. Satisfaction guaranteed. J. Boyd Harrold, Dixon, California.

Big Type Durocs—Better Durocs at right prices. Harvey M. Bergiund, Dixon, California.

Winsor Ranch Durocs—The best of stock at reasonable prices. BONITA, CALIFORNIA.

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Lark Meadow Berkshires—Bred or open gilts. Bred sows. Prominent blood lines. Geo. A. Stingle, El Monte. BUY A BERKSHIRE BOAR.

Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Calac Orchards, Martinez, California.

POLAND-CHINAS

Lendorris Ranch Polands — Big type Poland Chinas of all ages for sale. The kind that makes weight quickly. Weanling boars and gilts sired by Lendorris Liberator out of Lendorris Liberty Bond sows. Now ready for delivery. W. L. Haag & Son, Hanford, California.

Registered Poland Chinas. 40 tried brood sows; 40 gilts. Some choice young boars all at reduced prices to move at once. These Polands are as good as can be had anywhere at any price. W. D. Trewhitt, Route B Box 47, Hanford, Calif.

Big Boned Poland Chinas—Bred gilts and young boars priced to sell at once. Young stock, either sex, for sale at all times. Bassett Bros., Hanford, California.

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Pedigreed Flemish Giants — No fancy prices. Maud Beeching, 1578 W. 46th St., Los Angeles.

HORTICULTURAL PRINTING

Catalogues and Booklets, office forms and correspondence stationery for the nursery, seed and florist trade; half tone cuts of many standard plants. Correspondence invited. The Kruckeberg Press, 236 Court St., Los Angeles.

MISCELLANEOUS

Lumber, Lath, Millwork—Get our direct-to-consumer prices before building. Catalogue, plan book free. Contractor's Lumber Supply Co., 452 Lumber Exchange, Seattle, Wash.

$32,000 in Prizes—The premium list of the Southern California Fair, at Riverside, October 11 to 16, is ready for distribution. If interested write for copy to W. W. Van Pelt, Secretary, Riverside, California.

WANTED

Young Man, 5 years dairy experience, wants charge small Jersey herd, where salary can be invested. Bowker, 1115 W. 2nd Street, Los Angeles.

Wanted—Unsulphured dried figs and other unsulphured fruit. Write for information. Martin A. Witt, 120-122 West Ann Street, Los Angeles.

Farm Wanted — Wanted to hear from owner of a farm or good land for sale, possession this winter. L. Jones, Box 374, Olney, Illinois.

Wanted—Position as test milker or herdsman of small herd; 20 years' experience; references. Box 12, Cultivator.

GOATS

For Sale—Pure Swiss Toggenburgs, does and bucks, from finest milk strains. La Corona Goatery, R. 1-416, El Monte, California.

Registered Milk Goats $20 and $25 each on approval. Francis Rudkin, Fillmore, California.

TURKEYS

Large Number of Choice Bronze Toms and hens, also geese and herding Collie Dogs. Shipped from St. Helena and San Miguel. John G. Mee, San Miguel.

Bourbon Red Turkeys, Buff Orpingtons. The Ferris Ranch, Reservoir Street, Pomona, California.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Legal Citizen

What constitutes a legal citizen in the state of California? Does the fact that he has not registered and does not vote make him a citizen in the state he came from? — Subscriber, Pasadena.

There seems to be no clear definition of just who is a citizen of any particular state. Under the rule in the United States, all persons other than residents of the District of Columbia are citizens of two governments, one state and the other national, and each one owes his allegiance to both of these governments within their respective spheres. A person may be a citizen of the United States and not a citizen of any particular state, as residents of the District of Columbia or territories of United States or those who reside abroad. So a person may be a citizen of a particular state and not a citizen of the United States, as in the instances of aliens who have declared their intention to become citizens and by local law are entitled to vote, but by reason of their naturalization not being completed, are not citizens of the United States. A person is to be regarded a citizen of his native state until it can be shown that he has acquired citizenship elsewhere, and this is purely a matter of fact, resulting from both act and intent. The intention to become a citizen and resident of a state other than that of his nativity must be shown, and united with this intent must be the actual act of removing to the state. Thus, if this actual act and intent were shown, a person might become a citizen of such alien state even prior to the time required for residence in order to entitle him to vote therein. Registration as a voter would add materially to the status of citizenship.

Contract—Oil Boring

I bought a piece of land on contract, in which a clause states that I cannot bore for oil. I now hear that there is oil in the vicinity. What right would I have to lease the land for oil purposes?—Subscriber, San Gabriel.

It would depend entirely on the exact terms of the contract. In some of these contracts the provision is probably void. In others, it would give action for personal damages for breach and it might cause a forfeiture of title.

Estate to Charity

Can a bachelor leave all of his estate to charity in this state?—Subscriber, Pasadena.

The provision of the code in respect to such bequests is substantially as follows: No estate shall be bequeathed to any charitable use, unless by will executed at least 30 days before decease, and no devize shall exceed one-third of the estate of the testator who leaves legal heirs. There is an exception to these provisions, however, in favor of devizes for the use of the state, any state institution, or any educational institution exempt from taxation. The section restraining bequests or devizes shall not apply where the will is executed at least six months prior to death of the testator and the testator leaves no parent, husband, wife, child, or grandchild, or when all of such heirs by writing, executed at least six months prior to the death of the testator, have waived the restrictions contained.

You cannot tell when the road may open and you should be prepared to step along.—So. Pac. Bulletin.

Forethought is a fine and necessary thing. Fearthought is unnecessary and one of the worst destroyers of happiness in the world.

Queries

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Refuses Service

We have a seven year old cow with fourth calf in our herd who is almost continually in heat but refuses service. What should be done to remedy this condition?—Subscriber, Bonsall.

I would suggest that you use a breeding crate in this case so that the cow could not refuse service. If a breeding crate is not handy one can be improvised quite easily in a corner of a corral with the use of two or three 2 by 4's. If this does not remedy the trouble I would suggest that you consult a veterinarian who could make an examination and could no doubt suggest treatment to clear up this difficulty.—G. E. G.

Canada Thistle

Information for Oregon subscriber in regard to Canada thistle:

Well, to begin with, I fought the Canada thistle for years in Minnesota for whenever you cut off and cleared they would come up all over the clearing, and of course we planted corn and cultivated and hoed, and the more we worked the better they throve. But the time came when we found a plan that was successful, and that was to plow in August when the sign is in the heart—which is only two days. At that time I had 14 acres where they stood as high as the grain. I called on my neighbors after cutting the grain with self binder and hauling the grain off, and we plowed the piece in one day—sign in the heart in August—and the result was when sowed the next year, only just now and then a thistle showed where there was a stump, and from the time that was done and for years the whole neighborhood practiced that and got rid of 100 acres of the pest. If you have a small patch you can kill by cutting.—Reader, Folsom.

(If the sign happens to be in the heart the first day the thistles are observed, we believe excellent results will be obtained by vigorous and instant action, but we trust none of our subscribers will delay unduly for signs of the zodiac or any particular phase of the moon.—Edit.)

Old Mine Stock

In 1864 my father bought shares in the Open Sesame California Consolidated Gold, Silver and Copper Mining Company of San Francisco, also some in the Union Mining Company, Were these companies prosperous? Do they still exist? I still have the certificates of shares. Are they of any value?—Subscriber.

Do any of our subscribers know of activities of these companies so that they can give information to this inquirer?

Dog Kills Chicks

I have a young dog six or seven months old that kills my young chicks and eats eggs. What can I do to teach him to leave eggs and chicks alone?—Subscriber, Fresno.

We find it extremely difficult to correct the puppy's habits. If he is valuable he will be worth the effort, however, and so far as the chicks are concerned we know of no way other than severe punishment at his first effort. As to the eggs, however, the habit has sometimes been corrected by blowing and filling the shell with cayenne pepper. It may be left in the nest and the puppy given his own way with it or, if he refuses to break the shell, it may be crushed in his mouth. This gives him such a hot dose that he will not care to repeat. We will be glad to hear from subscribers who have trained dogs in this particular.

Curing Sudan Hay

Please give information as to curing Sudan?—Subscriber.

H. L. Musser answers: "When in Texas the writer saw large fields of it being cut for hay. The time of cutting was when the seed heads were well formed but the seed was yet in the milk. This is the time to get the maximum of production as well as the best quality. It looks like very coarse straw in the bale and quite brown but evidently very palatable because the stock, both cattle and horses, apparently ate it with great relish. The method of cutting was with the ordinary McCormick reaper. It could be more conveniently handled with a binder but a large percentage of it would mould. It might be practical to cut it younger but the quality of the hay would not be so good."

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Of All Kinds

Deciduous

Citrus

And Ornamental

Vines & Roses

Let us have your name and address and we will mail new Price List when printed

Geo. C. Roeding, Pres.

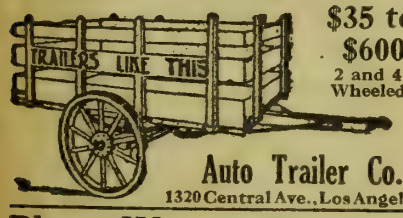
Fancher Creek Nurseries

Fresno, Cal.

MAKE YOUR SOIL YIELD MORE
USE TORO BRAND AGRICULTURAL SULPHUR

This has increased crops up to 500%. It prevents wire worms, smutty grain and potato scab. For Lime-Sulphur Solution use DIAMOND "S" BRAND REFINED FLOUR SULPHUR. For dry dusting use ANCHOR BRAND VELVET FLOWERS OF SULPHUR. Against rodents use CARBON BISULPHIDE. Write for circulars 6, 7 and 8, price list and samples.

SAN FRANCISCO SULPHUR CO.,
624 California St.,
San Francisco, Cal.



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2 and 4 Wheeled

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FOR PROFIT

Growers netted this year $1000 per acre. This is the best time to plant for full crop next winter and spring. We can supply plants—all sorts for large fields. Write for price list.

J. B. WAGNER
Rhubarb and Berry Specialist, Pasadena, California.

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DUST SPRAYER

Latest Type Efficient
Durable Reliable

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The great quality limitation of the average pump is its price. Before the first casting is made its life usefulness is pre-determined by *price*.

Byron Jackson has become synonymous with quality because it has been the policy of this Company through the years to reverse this procedure.

Every pump, whether special or standard, is built to the ideals of quality, efficiency, dependability and economy. Then, and only then, is price computed.

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Beaver Board $32

per Thousand Square Feet—Factory Seconds

48 inch and 32 inch wide Beaver Board, factory seconds, but one side is in excellent condition. Ideal for lining outbuildings, interior rooms, and a thousand and one other uses around the farm. We've a large stock of this which we are offering at the special price of $32 per M sq. ft. This in lengths of 6, 8, 10 and 12 feet only.

No. 14 House Wire, $1.00 per 100 ft.

No. 14 insulated house wire, the standard wire for inside and outside work. Note our other low prices on electrical fittings.

Plug Fuses, 5c each. 10, 20 and 30 Amp.
Split Knobs, $3.50 per 100.
Concealed Rosettes, 20c each.
Key Sockets, 35c each.
Flush Switches, 40c each.
Loom, 4c foot.
Entrance Switches, 80c.
Snap Switches, 40c each.
Electric Door Bells, 65c each.
Cleat Receptacles, 18c ea.
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Solid Knobs, $2.50 per 100.

Write for FREE Condensed Electrical Catalog

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Trade Mark TIZIT Registered

The Premier Insecticide and Fungicide

A Combined
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BLACK and CITRICOLA Scale
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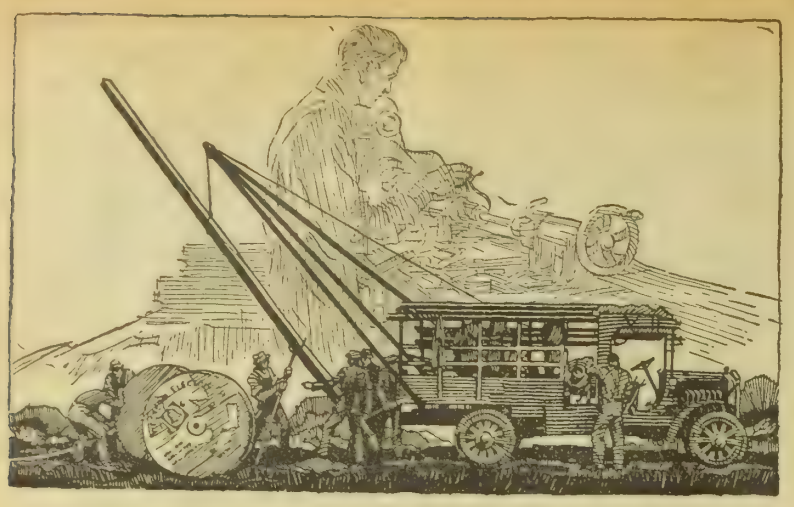

Tools of Industry

In industry, art, science, in fact in all kinds of work, good results require good implements kept in good condition.

If the right sort of implement is important to an individual workman, efficient tools for industry and commerce are a vital necessity to the nation.

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Control of Squash Bug

Noting inquiry from Oceanside subscriber as to means of controlling the spotted squash bug, the California Sprayer Company writes: "In a recent issue of the Cultivator, questions and answers column, a subscriber from Oceanside writes for information on the control of the 'spotted squash bug,' undoubtedly referring to the beetle known to entomologists as the 12 spotted cucumber beetle. In reply the subscriber is advised to use 'Paris green or other arsenical poison,' and a wet spray is recommended without mention of the much quicker and probably more effective method of dry poisoning with arsenicals or the nicotine dusts which the U. S. department of agriculture recommends. Roy Campbell of the Alhambra laboratory in his Circular 154 of the U. S. department of agriculture states that in dusting with a 10 per cent nicotine sulphate dust with hand operated bellows duster one puff of the dust was all that was needed for a single hill of melons. He says 'the effect was immediate. When struck with the dust many of the beetles were unable to fly away but crawled on the ground under the plants in apparent distress, and in a few minutes succumbed. Some which were able to fly away, on being followed, were found to go only a short distance, and in a very short time were overcome.' In severe cases, such as your subscriber reports, 10 per cent of arsenate of lead powder with a 10 per cent nicotine dust might be advisable. We believe, however, that no remedy known at present can compare with the nicotine dust treatment recommended by the department of agriculture for the same beetle on melons. It is now generally conceded by investigators that where equally effective insecticides or fungicides are known, the dry applications are more easily made, more quickly made, and more thoroughly made."

Government Land

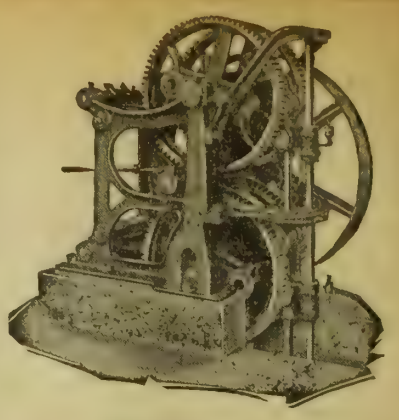
Can a married woman take up government land by homesteading or any other way? Where can I get information regarding government lands in the vicinity of Victorville, San Bernardino County?—A. B. C.

A married woman may not make homestead entry unless she has been deserted by her husband or he has been incapacitated by disease or otherwise from earning support for his family, or is confined in the penitentiary. She may, however, make desert entry even if her husband is living and has made desert entry himself. Write Land Office, Department of Interior, Washington, D. C., and ask for "Suggestions to Homesteaders," also copy of "Statutes and Regulations Governing Entries and Proof Under the Desert Land Laws." Or presumably these books may be had of the local land offices. As to securing lands in the vicinity of Victorville the only way of determining is to make personal inspection or employ one qualified, then secure information through the land office at Los Angeles as to whether other entry has been made. If not, then blanks will be supplied by the land office.

Killing Flies

Do you know of anything that would be practical to spray on flies to kill them when they come in to roost on the roof of the cow shed on cool evenings? I could exterminate most of the flies around the cow shed if I could get them then. I remove all manure once a month, but they breed fast.—Subscriber, Orange.

The best control in a case like this is thorough cleanliness and distribution of the manure at intervals of four days or less. Where manure is exposed in a moist condition for four days or more it allows hatching and transformation of the flies. The use of borax, liberal quantities of kerosene and, in fact, quite a number of chemicals, will control this hatching of the flies, but this is not only expensive but most of the agents lessen the value of the fertilizer. Where it is impossible to distribute manure every day or two then insect tight bins for storing it answer the purpose. As to spraying the flies on the roof, kerosene emulsion or probably straight kerosene will accomplish this result.



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and hold down the most important item of expense in your water supply, which is the power bill.

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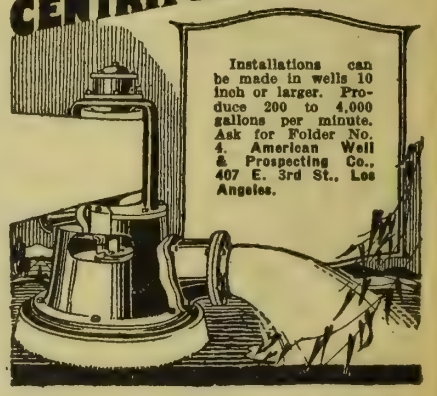
JOHNSTON TURBINE CENTRIFUGAL PUMPS



Installations can be made in wells 10 inch or larger. Produce 200 to 4,000 gallons per minute. Ask for Folder No. 4. American Well & Prospecting Co., 407 E. 3rd St., Los Angeles.

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Fastest cutting Log Saw. 310 strokes a minute. Light weight. Most powerful. Easy to move from cut to cut and log to log. Friction clutch controls saw blade while motor runs. Saws any size log into any lengths. When not sawing use as portable engine for pumping, grinding, other power jobs.

Read this: "My Log Saw is a marvel. All the neighbors hardly realize it can do the work of 10 men with cross cut saws." —D. Kinsey, Farmersville, O.

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WATSONVILLE CALIFORNIA

Poultry Queries

(Conducted by Jean A. Koethen.)

Umbrella Trees Poisonous?

Are umbrella trees poisonous to poultry?—Subscriber, Fallbrook.

I have never heard of it. If they are I feel very sure chickens will let them alone. I have kept poultry for years right among castor bean plants, which are considered poisonous, with how much reason I cannot say, for I never knew a chicken to touch one.

Sprouting Barley

How long should whole barley be sprouted before it is fed, and how much should be fed daily to half grown and full grown pullets?—Subscriber, Orland.

Barley is usually sprouted about five days. Soak it from 12 to 24 hours, then pour into a box or tray with holes in the bottom to permit the water to drain off. Set in a shady place, cover with burlap, and, if the weather is very hot or dry, wet daily. When the little white sprouts begin to show it is ready to feed. If you leave it till the green tops show some of its food value will be lost. Feed once a day all the birds will clean up quickly, say in 15 or 20 minutes, to any size of fowl. The older the bird, the more it will eat.

Mysterious Deaths

Within the last month I have lost four apparently healthy February pullets. They seem to have fever, breathe very rapidly, and die in a short time. They have a mash consisting of bran, about one-third laying mash, charcoal and a very little bone meal. This is before them constantly. Their scratch consists of cracked corn, wheat and milo night and morning. Their green feed is chopped alfalfa.—Subscriber, Del Rosa.

It is hard to diagnose from so meager a description of symptoms, but I should be suspicious of the cracked corn. Either they are getting too much heating food, since you are using both corn and milo, or else the corn has been heated and contains mold spores. In any case it would be well to drop the corn for a while and perhaps the milo also. Change to wheat and barley for a while and do not feed more than a quart daily to 15 birds.

WILL HANDLE POULTRY

Recent statement of the Poultry Producers of Central California announces that "at the meeting of the board of directors on July 26 plans for the handling of poultry by the association next season were actively discussed. These plans contemplate the largest and most complete poultry packing plant on the Pacific Coast, if not in the entire United States. Now that our increased capital is assured, we are able to go ahead definitely with these plans, and the entire matter of building and equipping our poultry packing plant at Petaluma has been referred to the executive committee with power to act."

As to marketing conditions the report says:

"Egg production in the East and Middle West has also fallen off with the advance of the summer season, and the natural decline in production has been greater than usual because the hens began to lay earlier this year. This has caused a corresponding decline in the storage receipts so that the quantity of eggs in storage at the four big eastern markets (New York, Chicago, Boston and Philadelphia) on July 16 was only about nine per cent more than at the same date last year, and about ten per cent less than in 1919.

"All this verifies the expectations of experienced poultrymen who felt sure that the early commencement of laying this year must necessarily mean an early decline in production.

"Continued hot weather in the East has seriously affected the quality of the eggs produced in that territory, causing a shortage of stock of good quality and a consequent advance in the market for Pacific Coast eggs in New York, as anticipated in our last monthly letter.

"The shortage of good eggs in the East has also started a demand for storage eggs of fine quality. We have sold several cars of storage eggs lately for eastern consumption."

PETALUMA EGG DAY

Petaluma, the "World's Egg Basket." will celebrate its fourth annual Egg Day, August 20, for the purpose of demonstrating the real food value and economy of eating eggs and why people should eat more of them. "And by means of this annual fiesta we will demonstrate the necessity for a national advertising campaign.

"Why not? Here in the United States is a billion and a quarter dollar industry suffering from lack of protection and inadequate tariff rates, an industry that has never been advertised, and three million people depending on it for their livelihood.

"Here in Petaluma, the largest poultry center in the world, with hens producing 38,000,000 dozen eggs annually, and an investment of $21,000,000, are 24,000 people deepnding upon the industry.

"Petaluma has urged poultry and egg organizations in the United States to work out the question of advertising eggs and has taken the initiative with an Egg Day through which it will present educational exhibits, window displays, unique walking and float features, cooking demonstrations, a chicken parade, rodeo, an egg barbecue and other unique features characterizing the industry."

TUBERCULOSIS CAUSES HEAVY LOSS TO POULTRYMEN

This disease is especially destructive to flocks in the north and west. The course of the disease is slow, symptoms are apparent only in the late stages, and the mortality is high. Although birds may become infected at any age, the disease is not readily detected by ordinary observation in those under one year old, because months are required for the bacilli to multiply in the system sufficiently to interfere with the normal functioning of the body. The older fowls, from two to three years old, are most likely to display symptoms and show a high death rate.

One of the first symptoms is gradual emaciation which becomes especially noticeable in the breast muscles. These diminish in size until in advanced stages there is scarcely any flesh left on the breast bone. Feeling the breast region will readily detect this wasting. The appetite continues good. Lameness in one or both legs, or drooping of one or both wings is another symptom.

On our farm we have for a number of years kept on hand a supply of certain remedies for the treatment of disorders among our livestock. This every farmer should do. The necessary medicines can be obtained at comparatively small cost. After all, the expenditure of a few dollars is a trivial matter and it may be the means of saving the life of a valuable animal. Even with the greatest care cases will occur in which waiting for the arrival of a veterinarian will involve loss of time which may be fatal.

Still another thing that has been holding this old world back is the fact that too many men talk an hour for every minute they work.

"Pioneer" Baby Chicks

All the Popular Breeds
Every Day
Baby Ducks, Baby Turkeys

We can supply Baby Chicks in any quantity. Best quality. Can ship to any point within seventy-two hours' ride from Los Angeles.

Copyrighted Hatching Eggs, Fireless Brooders, Poultry Supplies, Remedies, Feed, Seed, Feeders, Fountains for sale.

We are the SOLE AGENTS of this County for the Pioneer Incubators and Brooders. Send for Price List.

Visitors Welcome.

PIONEER HATCHERY
320 So. Spring St., Los Angeles, Calif.
"World's Largest Hatchery" Est. 1905

FOR GREATER EGG PRODUCTION FEED— COULSON'S EGG FOOD
FULL PARTICULARS IN OUR FREE BOOK "CHICKENS FROM SHELL TO MARKET"
Coulson & Co.
PETALUMA, CAL.

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For spraying and painting chicken houses, roosts and nest boxes.
KILLS LICE AND MITES.
As a disinfectant, spray with 2 per cent solution of CRESY-LOL.
AT YOUR DEALERS
Standardized Quality—Always the Same
Manufactured by ARTHUR R. MAAS, Chemist
308 E. Eighth St., Los Angeles.

What are YOUR hens laying?
PCA PRODUCTS
give results as shown below—

LAYING 60% FOR Will Blackman
LAYING 51% AUGUST
LAYING 50% FOR D. J. Cathcart
LAYING 55% FOR Dr. E. D. Lyche
LAYING 52% FOR England
LAYING 55% FOR C. E. Angier
LAYING 53% FOR Donald A. Giddings

The Foundation for Poultry Success
PCA Dry Mash
Los Angeles

Poultrymen's Co-operative Milling Association
1516 INDUSTRIAL ST. LOS ANGELES, CAL.
PHONES 12076 MAIN 2935

Los Angeles Markets

Los Angeles, August 10, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price 45 cents.

Prices Creamery Extras last week:

Aug.	3	4	5	6	8	9
'21 ...	45½	46	46	46	46	46

CHEESE

Brokers' prices:
California flats, 20@22.

EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 43; case count, 38; pullets, 36; pewee pullets, 24.

Extras last week and year ago:

Aug.	3	4	5	6	8	9
'21 ...	40	40	41	41	42	43

POULTRY

Price to producers: Hens, 19@29; colored, 33; broilers, 29@31; roasters, 31; old roosters, 12; fryers, 27; ducks, old, 12; ducklings, Pekin, 3½ up, 30; others, 25; geese, 25; turkeys, live, young tom, 50; dr., 55; old, live, 40; dr., 44; hens, live 40; dr., 44; squabs, 45@47.

Belgian hares, live, 11@14; old 8.

LIVESTOCK

Los Angeles, Aug. 9. — Weighed and delivered off cars without food or water:

Hogs, hard grain fed, 125 to 175 lbs., 11.00; 175 to 225 lbs., 11.50.

Cattle (on foot, gross weight): Steers, good, 7.00; medium, 6.50; cows, good, 5.50; medium, 5.00; bulls and stags, 3.00@3.50; calves, 125 to 150 lbs., 9.00; 175 to 225 lbs., 8.00.

Sheep: Ewes, 5.00@5.50; lambs, 8.50@9.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock August 9, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies moderate. Demand moderate, market stronger. New stock: Wide range in prices, mostly 70@80 per lug, poorer 60. White Rose No. 1, sacked per cwt. mostly 2.00@2.25, poorer 1.75, Bakers 2.75@3.00. Jobbing: White Rose No. 1, 1.90@2.00, poorer 1.50@1.65. Sweets: Supplies moderate, market steady. Locals: Mostly 9@10 per lb. No. 2's low as 5@6 per lb.

Onions: Supplies moderate, movement moderate, market steady. Stocktons: Australian Browns 90@1.00 sacked per cwt. Local: Whites 80@90, Browns 70@75 per lug.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock August 7 by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Supplies liberal. Demand moderate, market steady. Per lb.: Kentucky Wonders mostly 4@5 per lb. Jobbing: Mostly 3@4 per lb. Limas: Supplies moderate, movement slow, market steady, mostly 4@5, poorer 3@4 per lb.

Beets: Supplies moderate, market steady. Per dozen bunches mostly 35@40.

Cabbage: Supplies limited. Market steady. Per field crate 2.50, poorer 2.25. Per dozen bunches mostly 35@40.

Carrots: Supplies light, market strong. Per dozen bunches mostly 40.

Celery: Supplies liberal, market weak. Per crate 5.00@5.50.

Corn: Supplies moderate, movement moderate, market weak. Local: Per lug, best mostly 65@75, poorer 60.

Cucumbers: Supplies liberal, movement slow, market weak. Local: Lugs mostly 40@45, poorer 25@35.

Eggplant: Supplies liberal, demand slow, lb. 5@6.

Lettuce: Supplies light, market firm, very little good stock. Local: Field crates mostly 90@1.00, poorer 75 per crate; fancy $1.25.

Peppers: Supplies heavy, market weaker. Locals: Bells mostly 7@10, fancy Chilis 5 per lb., few best 6.

Radishes: Supplies light, market firm, mostly 20 per dozen bunches.

Tomatoes: Supplies moderate. Demand and movement moderate. Local: Per lug mostly No. 1, 1.25@1.50; No. 2, 75@85.

Turnips: Supply moderate. Market steady. Per dozen bunches 35@40.

FRESH FRUITS

Apples: New stock: Supplies liberal, market weak, mostly 50@75, few Bellflowers 1.00@1.25. B grade Gravensteins 2.65@2.75. Crabapples 1.25@1.50 per lug. Loose pack Gravensteins 4½@5 per lb.

Cantaloupes: Supplies liberal. Demand and movement slow, market weaker. Home grown Tiptops per crate mostly 1.50@1.75. Honey Dews mostly 75@1.00 crate.

Figs: Supplies limited, market strong. Locals: 25@30 per lb.

Grapes: Movement slow, market weaker. Wide range in quality. Thompson Seedless mostly 5@6; Muscats, 12.

Peaches: Supplies heavy. Market dull. Wide range in quality. Lugs, best Clings 75@1.00, poorer 50@60. Freestones, best 1.00@1.25, poorer 75; few best Elbertas 1.35; No. 2, all varieties, 50@75 per lug.

Pears: Supplies liberal, market weak. Barletts, 5@6 per lb.; few best 7.

Plums: Supplies heavy, market weak. Satsuma plums 2½@4 lb.; Burbanks 1½@2½ per lb.; Wicksons and Kelsey, 4@5; prunes, various varieties, 4@6.

Quinces: Lug, 1.25@1.50.

Watermelons: Supplies liberal. Demand moderate, market weak. Turlock section: Mostly 2@2½, poorer 1½ per lb. Locals: Klondikes 2@3 per lb. Other local varieties 2@2½ per lb.

CITRUS FRUITS

Grapefruit: Supplies liberal, movement moderate, market steady. Local: Per box, market pack 2.75@3.00; small 2.00@2.25; special packed brands 3.25@3.75. ed box mostly 6.00; loose, per box, 3.00@3.50; lugs 1.25@1.50.

Lemons: Supplies moderate. Demand moderate, market weaker. Local: Packed box mostly 6.00@7.00, loose per box, 3.00@3.50.

Oranges: Supplies moderate. Demand moderate, market firm. Valencias, best brands, all sizes, 5.00; ordinary, 3.00@3.50, loose pack 1.00@1.50, mostly 1.25.

HONEY

Supplies of old crop still on hand. New crop supplies moderate. Beter wire inquiry. Movement moderate, market firm on White Orange, steady on other varieties except Alfalfa, which is weak. Carloads f. o. b. usual terms at loading points. White Orange, new crop, supplies light, 8½@10, mostly 9½; Light Amber Alfalfa 5@5½, mostly 5; White Sage, old crop, 8@9, new crop 9@10; Light Amber Sage, old crop, 7, new crop 7@7½. Alfalfa bloom poor and unfavorable. Climatic conditions have cut down the Alfalfa honey crop. Beeswax: Supplies heavy, demand light. Crude wax offered by dealers at 22@27, mostly 25 per lb.

GRAIN AND FEEDS

Grain Exch. price bid August 9:
Corn: Bulk No. 2 Yellow, 1.57½.
Milo: Eastern 1.65.
Bran: Kansas, 25.25.
Barley: Carloads, 1.31¼.

HAY

Alfalfa Growers of California report:

The market for alfalfa hay showed increased activity during the week in most parts of the state. Prices for common grades remained unchanged, while those for the better grades showed a stiffening tendency. The sustained better demand is undoubtedly the result of the small supplies in the hands of most dealers and users. The freight rate on hay from the Antelope Valley to Los Angeles has been reduced about a dollar a ton as the outcome of negotiations between the railroad and the association, after the representatives of the association had been in position to convince the railroad people that while the alfalfa growers of the valley will thereby save about $25,000 a year, the railroad will, directly and indirectly, be benefited to an even larger extent. We mention this to show the advantage of the growers being able to handle important matters of this kind as an organized whole, that is, as an association. There were 990 tons of grain and alfalfa hay received on the Los Angeles tracks the week ending August 6, with 410 tons held over.

Prevailing prices last week f. o. b. Los Angeles:

No. 1 Dairy	19.00
Standard Alfalfa	15.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats	18.00@26.00
Barley	16.00@24.00
Alfalfa, No. 1 Dairy	20.00
Standard	16.00
Straw	8.00

San Francisco Markets

San Francisco, August 9, 1921.

Quotations made daily by San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

BUTTER

Dairy Exchange quotations August 8:
Extras Choice 44

Dairy Exchange prices extras this week and year ago:

Aug.	3	4	5	8	9
'21	44½	44½	44½	44½	44

CHEESE

Dairy Exchange quotations:

Jack, full cream, street prices	14½@16
Oregon, Y. A.	28
Oregon Trips	23½
Cal. Flats	20½@23
Cal. Y. A.	25½

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases, August 8:

Extras	47
Extra Firsts	44
Extra Pullets	37½
Pullets, Extra Firsts	36
Undersized	26½

Prices Extras last wk. & yr. ago:

Aug.	3	4	5	8	9
'21	47½	49	48	48	47

POULTRY

Wholesale prices are:

Young chickens: Leghorns, 1 to 1¼ lbs., 25@26; 1½ to 1¾ lbs., 2 lbs. and up, 35; heavy breeds, 1½ to 1¾ lbs., 27@30; 2 lbs. and up, 43@47. Staggy roosters, 20@25; old roosters, Leghorns, 15; do, heavy breeds, 18. Hens: Leghorns, large, 20; do, small to medium, 17@20; heavy breeds, 30@32.

Ducks: Young, 35 per lb., old, 25; geese, 25 per lb.; turkeys, live, 35; dressed, 45@50; Belgian hares, live, 14@14; dressed, 18@20; squabs, fancy, 45@48; do, common, 3.50 per doz.; old pigeons, 3.00.

LIVESTOCK

Western Meat Company quotes:

Cattle: Steers, No. 1, 5½@6; do, second quality, 5@5½.

Cows and Heifers: No. 1, 4½@5; do, second quality, 4@4½.

Calves: Light weight, 7@8; heavy, 5½@6.

Sheep: Wethers, 3½@4; ewes, 2½@3.

Lambs: Milk, 7@7¾.

Hogs: Hard, fat, grain fed, weighing 125 to 200 lbs., 12½; do, 200 to 250 lbs., 11; do, 250 to 350 lbs., 11½; light sows, 11½; heavy, 10½.

California Farm Bureau Marketing Association reports:

No. Hogs	Ave. Wt.	Dock	Price
Modesto, August 2			
116	172	...	$12.05
11	249	...	10.20
54	127	...	10.20
8	395	...	8.20

Two cars, 26 consignors, $3,592.50.

Chowchilla, August 4			
68	175	...	$11.75
3	268	...	10.75
16	145	...	10.45
4	397	...	9.25

One car, 16 consignors, $1,872.59.

Fresno, August 5			
94	178	...	$12.40
27	143	...	11.70
31	123	...	11.20
3	283	...	10.70
11	299	120	9.20
1	430	170	6.00
7 Pigs			5.25

Two cars, 19 consignors, $3,412.08.

McFarland, August 6			
43	172	...	$12.00
96	194	...	12.00
52	154	...	11.50
5	134	...	11.00
10	210	...	11.00
3	283	...	10.00
2	330	40	8.00

Two cars, 14 consignors, $4,506.01.

Total for the week, 7 cars, 75 consignors, $13,383.18.

These prices are net to the farmer, while the paper quoted prices of other markets are f. o. b. packing house.

POTATOES AND ONIONS

Wholesale prices:

Potatoes: Old crop, nominal; New, garnets, 1.25@1.50 per 100 lbs.; do, white, 1.50@1.75. Sweets, Coachella Valley, 5@12½ lb.; Merced, 6@7.

Onions: Australian brown, nominal; crystal wax, nominal; new reds, 1.25@1.50; do, yellow, 1.75.

Green Onions: 1:50@1.75.

Garlic: 6@8 per lb.

VEGETABLES

Wholesale selling price:

Artichokes: Crate, 4.00@10.00.

Beets: 1.75@2.00 per sack.

Beans: Kentucky Wonder, 7@9 lb.; garden, 10@11 lb.; Italian, 12@13 lb.; Lima, 10@12; wax, 4@8; Blue Lake, 10.

Carrots: Sk., 1.25@1.50.

Celery: New crop white, 5.50; yellow, 6.50 per cr.

Corn: Alameda, 3.50@4.50 per crate of about 9 dozen ears; 2.00@4.00 per sack.

Cucumbers: 50@75 lug; English 2.00.

Eggplant: Lb., 6@8.

Lettuce: Crate 2.00@2.25.

Okra: 7@10 lb.

Peas: Lb., 5@7; fcy., 7@10½.

Peppers: Bells, 10@13; Chili, 15@20.

Spinach: Lb., 2@4.

Tomatoes: San Pedro, 2.00@2.25 per lug, 1.25@1.75 per crate; Stockton, 2.25@2.50 per lug; Merced, 1.50 per small lug; flats, 50@1.00.

FRESH FRUITS

Apples: Red Astrachan, 4-tier, 1.50@1.75; 4½-tier, 75@1.25; Alexanders, 3½-tier, 2.00@2.35; 4-tier, 1.25@1.50; 4½-tier, 1.25@1.50; White Astrachan, 3½-tier, 2.00@2.25; 4-tier, 1.50@1.75; Gravenstein, lug, 1.25; 3½-tier, 2.00@2.75; 4-tier, 2.50; crab, 1.25@2.25.

Apricots: 50@1.00 per lug; fcy., 6@6½.

Avocados: California, doz., 3.00@5.00; large, 6.00; Fla., 5.00@7.00.

Bananas: Lb., 8½@10.

Blackberries: 30@35 per drawer; cr., 1.75.

Cantaloupes: Imperial, nominal; Turlock, 76@90; do, ponies, 30@50; flats, 25@50; Honey Dew, 1.25@1.75 per crate; flats, 50@65; casabas, 1.00@1.25 per crate, 1½ per lb. Persian melons: Southern, 1.00@1.50; Modesto, 2.50.

Cherries: 1.50@1.75 per box.

Figs: Black, single layer, 50@1.00; double, 2.50@3.50.

Gooseberries: 7@8 lb.; English, 15 lb.

Grapes: Per crate: Seedless, per small lug, 1.00@1.25; Malaga, 2.00@2.25; Fontainbleu, 2.00@2.25.

Huckleberries: 18@20 per lb.

Loquats: 6@7.

Nectarines: Wrapped, 1.50@1.75 per 20-lb. box; unwrapped, 1.25; Sacramento river, 2.00 per crate; No. 2, 1.50@1.75.

Peaches: 40@65 basket and small lug; large lug, 1.00@1.50.

Pears: Bartlett, 3.00@3.25 wrapped; other grades 1.00@2.00.

Plums: Santa Rosa, 1.25@1.50 per crate; other varieties, 75@1.00 per crate, 1.00 per lug; egg plums, 1.00@1.25.

Prunes: Cr., 1.50.

Raspberries: 60@75 per drawer; some 85.

Strawberries: Peninsula and Watsonville, 50@65, some higher; Salinas, 1.20@1.40 per crate; Watsonville, 1.00@1.10 per crate, according to quality.

Watermelons: 1¼@1¾ per lb.

CITRUS

Citrus Fruits: Valencia oranges, 3.75@5.00. Lemons: Fancy, 9.00@10.00; choice, 8.00@9.00 per box; lemonettes, 5.00@6.00. Grapefruit, 3.00@4.50.

DRIED FRUITS

Prices have been named on peaches, figs and apricots by the associations; prune prices not yet named. Sales Manager Wallace of the California Prune and Apricot Growers writes that they will not be for three or four weeks.

Apples, 1921 (Packers' Quotations):

Choice (in 50s)	10¼
Extra choice (in 50s)	10½

Apricots, 1921 (California Prune and Apricot Growers) Bulk Basis:

	Sun-sweet	San Joaquin
Standard	12	10½
Choice	16	13½
Extra Choice	17	14½
Fancy	19	15½
Extra Fancy	21	....

Peaches, 1921 (Cal. Peach and Fig Growers), Aug.-Sept.-Oct. shipment, guaranteed to Jan. 1:

	Yellow	Muir
Slabs (in 50s)	8¾	....
Standard (in 50s)	9	9¼
Choice (in 50s)	9½	....
Fancy (in 50s)	10½	11
Extra fancy (in 50s)	11½	12
Practically Peeled—		
Standard (in 50s)	10	10¼
Choice (in 50s)	10½	....
Fancy (in 50s)	11½	12
Extra fancy (in 50s)	12½	13
Cartons, 30 11-oz., per case		3.10
Cartons, 60 11-oz., per case		6.00
Cartons, 24 2-lb., per case		6.50
Carton, 10 5-lb., per case		6.60

Figs, 1921 (Cal. Peach and Fig Growers), Sept.-Oct. shipment, guaranteed to Jan. 1:

White—	
Standard (in 50s)	6½
Choice (in 50s)	8
Fancy (in 50s)	10½
Bricks, 12 No. 10s	1.10
Bricks, 24 No. 8s	1.80
Bricks, 50 No. 6s	2.80

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$2,000,000.00

(TWO MILLION DOLLARS)
IN LESS THAN FIVE YEARS TO
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WHO HAVE SOLD

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IN PUBLIC SALES MANAGED BY US

INCLUDING THE FOLLOWING BREEDS:

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AT THE LOWEST SELLING
EXPENSE IN EFFECT IN AMERICA

We Render *Complete Service* from the Smallest Detail of Sale Procedure to the Carrying of Notes Received in our Sales.

CONSULT US WHEN YOU NEED THE BEST IN SALE MANAGEMENT

CALIFORNIA BREEDERS' SALES AND PEDIGREE CO.
J. M. HENDERSON, President — C. L. HUGHES, Sales Manager
211-212 OCHSNER BLDG. — SACRAMENTO, CALIFORNIA

Bricks, 70 No. 4s	2.95
Layers, 10-lb., 4-row	1.60
Layers, 10-lb., 5-row	1.40
Calimyrna—	
Standard (in 50s)	7½
Choice (in 50s)	10½
Fancy (in 50s)	13
Bricks, 24 No. 8s	2.05
Layers, 10-lb., 6-row	1.90
Black—	
Standard (in 50s)	6
Choice (in 50s)	8
Fancy (in 50s)	11

Prunes, 1921 (Packers Quotations):

Size	Basis Price	Per lb. in 25-lb. Boxes
30-40s	8½@ 8¾	12¼@12½
40-50s	7 @ 7¼	10¼@10½
50-60s	5½@ 5¾	8¼@ 8½
60-70s	4¾@ 5	7 @ 7¼
70-80s	4½@ 5	7 @ 7¼
70-80s	4½@ 4¾	6¼@ 6½
80-90s	4¼@ 4½	5½@ 5¾
90-100s	4¼@ 4½	5 @ 5¼

Raisins, 1920 (Cal. Assoc. Raisin Co.):

Prices on the unsold portion of the 1920 raisin crop, effective August 1 to September 10, announced by California Associated Raisin Company at Fresno. It was announced further that opening prices on the 1921 season crop will be at least one-half cent a pound higher.

Muscats, Sun Maid seeded, 36-15 ounce to case, 14 cents a carton.

Sun Maid bakers, bulk seeded in 25 pound cases, 12½ cents a pound.

Sun Maid, one crown loose in 25 pound cases, 13 cents a pound.

Thompsons—Sun Maid, bulk in 25 pound cases, recleaned, 13½ cents a pound.

Sun Maid bakers, in 25 pound cases, 14 cents a pound.

Sultanas, bulk, in 25 pound cases, recleaned, 13 cents a pound.

Bleached Thompsons—Soda Thompsons, in 25 pound cases, 15 cents a pound.

Oil dipped Thompsons, in 25 pound cases, 15 cents a pound.

Sultanas, soda dipped, in 25 pound cases, 14½ cents a pound.

Oil dipped in 25 pound cases, 14½ cents a pound.

Layers, three crown, 20 pound boxes, $2.90 a case; ten pound boxes, $1.50 a case; five pound boxes, 80 cents a case.

All prices are quoted f. o. b. Pacific Coast mail points on regular California dried fruit contract terms.

BEANS

Below California Bean Growers Association shippers prices choice recleaned:

Large Whites	4.25
Small Whites	3.85
Pinks	6.70
Mexican Reds	7.40
Red Kidney	9.50
Henderson Bush	4.00
Cranberries	5.50
Bayos	7.50
Blackeyes	6.00

HAY AND FEED

Alfalfa Growers of California state that prevailing prices f. o. b. S. F. are:

No. 1 Dairy	15.00
Standard	14.00

Under date of August 6, A. W. Scott Co. says:

Receipts of hay during the week were 2,329 tons, as compared with 3,037 tons last week. Light and irregular demand with heavy receipts were the features of the San Francisco hay market during the week. Sales were weak and scattered and effected only by active salesmanship. Marine shipping is recovering and building construction is increasing. There is undoubtedly a better day coming. Holders of hay and grain who cannot find a sale now must simply "take up another hole in their belts" and wait with patience for better times. Mill and dairy feeds are influenced by the same conditiaons, and although fluctuating up and down they remain at the end of the week at practically former quotations. Alfalfa meal has been moving in little heavier volume for export, while coconut and oilcake meal have been picking up, chiefly because of the depletion in the stocks on hand.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers charges of switching, cartage, commission and handling expenses must be added according to conditions).

Wheat Hay, No. 1	15.00@18.00
Wheat Hay, fair grade	13.00@15.00
Tame Oat Hay	12.00@15.00
Wild Oat Hay, new crop	10.00@12.00
Barley Hay	10.00@12.00
Alfalfa Hay, 2nd and 3rd cutting	12.00@14.00
Alfalfa Hay, 1st cutting	9.00@11.00
Stock Hay	8.00@10.00
Barley, Ground	31.00@33.00
Barley, Rolled	27.00@28.00
Oats, Rolled Feed	32.00@35.00
Bran and Millrun	33.00@35.00
Middlings	46.00@49.00
Linseed Meal	36.00@38.00
Coco Meal	22.00@25.00
Alfalfa Meal	22.00@24.00
Cottonseed Meal	35.00@40.00
Sugar Beet Pulp	32.00
Molasses, Tanks	21.00
Molasses, Bbl.	25.00
Milo	40.00@45.00
Corn Meal and Cracked Corn	40.00@45.00
Scratch Feed	46.00@48.00

GRAIN

Wheat: Milling, 1.90@1.97½; feed, 1.90 @2.00.

Barley: Feed, 1.15@1.20; shipping, 1.25 @1.35.

Oats: Red Feed, 1.20@1.30.

Corn: California yellow, 1.50@1.60; white Egyptian, 2.20@2.30 per cental; California red milo, 2.00@2.10; Eastern red milo, 1.85@1.95; Eastern kafir, 1.75@1.80.

Citrus Markets

Los Angeles, August 10, 1921.

Shipments of Valencias are holding up. They are usually ranging around 150 cars per day. Prices are holding very satisfactory.

Lemon prices have dropped materially but most good stock is still well received.

Shipments

Shipments of citrus fruits to date since November 1, 1920, Southern California: Oranges 34,055 cars; lemons, 9,635; total, 43,690. To same date last season: Oranges, 26,597; lemons, 6,839; total, 33,436. From Central California to date this season: Oranges, 6,644; lemons, 212; total, 6,856. To same date last season: Oranges, 5,377; lemons, 289; total, 5,666. From Northern California to date this season: Oranges, 305; lemons, 5; total, 310. To same date last season: Oranges, 261; lemons, 22; total, 283.

AT THE AUCTIONS

August 3

New York: 25 or., 3 mixed, 5 lem. Val. 4.50-8.00, St. Mikes. 4.50-5.10, grapefruit 3.05-4.05, lem. 3.95-5.10.

Boston: 3 or., 4 lem. Val. 5.60-7.80, lem. 3.90-6.00.

Philadelphia: 5 or., 5 lem. Val. 5.40-7.45, lem. 3.30-5.15.

Pittsburg: 3 or., 4 lem. Val. 5.45-5.90, lem. 3.10-5.35.

Cleveland: 4 or., 4 lem. Val. 4.80-6.35, lem. 1.50-4.85.

Cincinnati: 1 or., 3 lem. Val. 5.35-5.60, lem. 3.45-6.15.

St. Louis: 1 or., 4 lem. Val. 5.65, lem. 2.45-7.35.

August 4

Pittsburg: 3 or., 1 mixed, 2 lem. Val. 3.35-5.55, lem. 2.60-4.05.

Philadelphia: 4 or., 3 lem. Val. 5.55-8.25, lem. 4.40-5.45.

Boston: 5 or., 5 lem. Val. 5.40-7.75, lem. 3.45-5.15.

New York: 22 or., 1 grapefruit, 2 mixed, 6 lem. Val. 3.65-7.75, grapefruit 3.00-4.05, lem. 4.65-5.80.

August 5

Boston: 6 or., 6 lem. Val. 7.10-8.10, lem. 3.65-5.10.

Philadelphia: 3 or., 2 lem. Val. 4.95-6.90, lem. 1.60-5.55.

Cleveland: 3 or., 3 lem. Val. 3.85-6.40, lem. 2.70-3.90.

New York: 15 or., 4 mixed, 6 lem. Val. 5.10-8.25, grapefruit 3.85-4.55, lem. 2.80-5.30.

August 8

Pittsburg: 6 or., 3 lem. Val. 4.70-6.25, lem. 3.00-6.00.

Philadelphia: 8 or., 5 lem. Val. 5.65-7.35, lem. 2.65-5.75.

Boston: 14 or., 6 lem. Val. 5.25-8.80, lem. 2.40-6.10, grapefruit 6.10.

New York: 38 or., 2 grapefruit, 1 mixed, 13 lem. Val. 5.25-7.80, grapefruit 2.75-3.75, lem. 1.95-5.65.

August 9

New York: 27 or., 1 grapefruit, 1 mixed, 5 lem. Val. 5.00-7.60, grapefruit 2.75-4.05, lem. 2.10-4.95.

Boston: 8 or., 5 lem. Val. 5.30-7.45, lem. 2.35-4.35.

Philadelphia: 10 or., 3 lem. Val. 4.75-7.15, lem. 2.70-4.05.

St. Louis: 3 or., 3 lem. Val. 3.80-5.20, lem. 2.90-4.15.

REPORT OF CATTLEMEN'S MARKETING COMMITTEE

Eastern markets are continuing to advance and are now in their strongest position for several months. California markets are holding steady to stronger. There is an especially good demand for lightweight steers, a considerable number of sales being reported at 6¼ and 6½ cents. The average carcass weight reported thus far this year is 54 pounds lighter than last year. Information received from southern Oregon and Nevada indicate that about one-half the usual number of cattle will be marketed in southern Oregon this fall and that there is a considerable shortage of cattle in Nevada. The bulk of beef cattle in central and southern California has been marketed. Very few, if any, commission cattle are going onto the market. Do not ship cattle on commission, and do not sell half fat cattle. We expect the market to continue steady to stronger during August.

BUMPERS FOR FLORIDA TRACTORS

Power farming in Florida is beset with all kinds of difficulties, and a lot of ingenuity has to be exercised in overcoming obstacles met with in reclaiming some of the Florida land, as, for instance, in plowing land which is covered with palmetto. The palmetto stems are very stiff and grow to considerable height. In order to give the plows a chance to do good work, the palmetto brusn must be broken down and crushed so that it can be turned under.

For this purpose some farmers are equipping their tractors with heavy bumpers placed rather low so that as the tractor moves forward the brush is crushed and broken. The brush breaking is further assisted by unusually long angle iron lugs which are put on the tractor wheels, the lugs being supported by extra spokes that run to the hub of the drive wheel where they are bolted on.

BEAN GROWERS EXPANDING

Bean growers are not particularly hilarious over market conditions but they are determined to hang together and secure the utmost out of the busted market. This is resulting in closer cooperation than has before been possible. The California Bean Growers Association still maintains its central office in San Francisco but now has thoroughly alive working branches in Yuba City, Sacramento, Stockton, Lompoc and Santa Maria, and is now establishing a large working center in Los Angeles in charge of S. D. Pine.

It is satisfactory to note that a slight increase in quotations has been made within the past few days. Mr. Pine reports that the new contract is proving entirely satisfactory to the members and to the entire movement. It is ironclad, in this, that once signed up with the association the member remains with it, but at the same time he has certain options which enable him to sell through the association to any individual shipper or commission man. This enables the association to protect other members and at the same time allow disposal of a portion of the crop.

The agreement on which the association is now operating may be terminated June 1, 1924. If it is not terminated, then it runs until the end of the 1926 crop season. The usual "liquidated damages" clause obtains which grants to the association sufficient to cover damages which may be caused by growers' withdrawal.

WEATHER REPORT

San Francisco, Cal., August 6, 1921.

Stations	Rainfall Wk.	Rainfall Season	Rainfall Norm.	Temp. Max.	Temp. Min.
Eureka	.00	.00	.12	62	48
Red Bluff	.00	.00	.00	106	62
Sacramento	.00	.00	.00	100	52
San Francisco	.00	.00	.01	69	51
San Jose	.00	.00	.00	88	50
Fresno	.00	.00	.00	104	60
San Luis Obispo	.00	T	.03	82	52
Los Angeles	T	T	.00	80	58
San Diego	T	T	.00	74	63

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Will be the Big Livestock and Agricultural Exhibition of the Southland this Fall.

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W. W. VanPelt, Secretary

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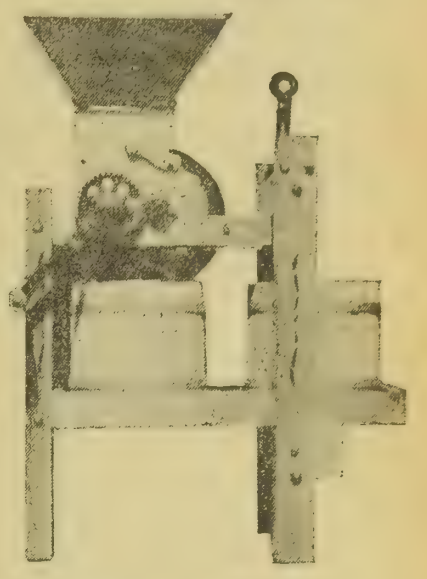

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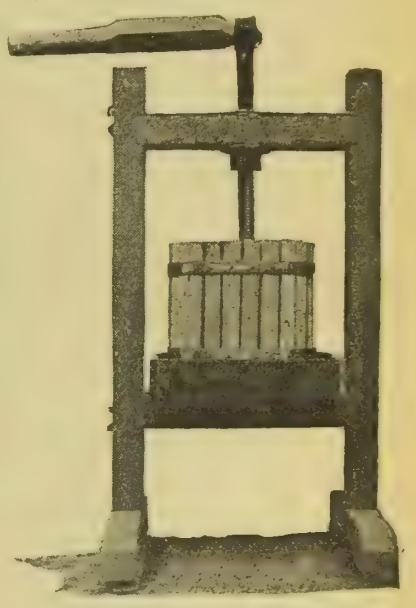

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The HOW AND WHY OF GOOD PIE

MRS. BELLE DE GRAF

Director of the Sperry Domestic Science Department, to whom thousands of housewives look for practical help and kitchen-guidance. The recipes below were selected and tested by this home-cooking expert:

THE art of making rich, tender pie-crust is often considered impossible by many women who seem to think that success comes only to a chosen few. Given a good recipe and working quickly, any woman can make a good pie provided she understands the baking.

Even the more inexperienced housewife will be able to make an appetizing pie if she will study first the recipe, then the few simple rules regarding manipulation and baking.

It is a great help to have the ingredients cold — particularly for those unskilled in handling pie crust, but it is not essential. The process should be quickly done, handling the paste as lightly and as little as possible.

Pastry must be baked in a fairly hot oven with the greatest heat at the bottom; then it will be light. But if placed in a moderate oven the pastry will be oily and decidedly indigestible as well as unpalatable. After the pie has been in the oven ten minutes—or when the filling is heated through, the heat may be reduced.

Pies which contain a filling where eggs are used as the thickening medium should not be baked so rapidly that the filling boils or the mixture will separate and the pie will be watery. This applies to any form of custard pie.

It is unnecessary to grease pie plates for the fat in the crust is sufficient. Glass pie plates are very satisfactory, especially for deep pies. Plain or perforated tin can be used for the shallow pie or pastry sheils.

Pie crust should be rolled out to about one-eighth of an inch in thickness. When lining the pan, lay the crust on loosely and allow it to come a little over the edge. The scissors will be found the most convenient means of cutting the dough. If the pastry is stretched it will shrink and probably break while baking.

When making fruit pies which may be very juicy the undercrust can be brushed over with the unbeaten white of an egg—which coagulates as soon as the heat reaches it and makes an impervious coating. Or the bottom crust may be sprinkled with very fine dry bread crumbs or with a little flour which will absorb the excessive moisture at once and prevent the crust from being soaked. After the filling is put in, the top crust is placed in position; this should be rolled out about one-eighth of an inch thick also and should extend about a quarter of an inch beyond the pie plate. Then fold the top crust under the bottom one and either flute the edge with the fingers or a fork. Perforate the top crust so that the steam may escape—or the crust will be soggy on the under side. If a very dark brown is desired the top crust may be brushed over lightly with milk.

When making very juicy pies—allow one tablespoon of Sperry Drifted Snow Flour to each cupful of sugar used. Mix sugar and flour until well blended then sprinkle over fruit. Or the pie may be bound around the edge with a narrow strip of cloth which has been dipped in either milk or water.

When making pastry shells for a one-crust pie invert a deep pie pan and place the pastry on it, pinching about the edges to make a deep border. Prick the pastry in several places with a fork. Place in a hot oven; in about ten minutes the shell should be a golden color and should be watched carefully until ready to take from the oven. Remove from the tin and place the filling in the shell.

Pastry for several pies may be made at a time, rolled up and set in a cool place in a well-covered utensil until needed. This is often a great advantage for a busy housewife. Always serve pastry fresh or reheat if the pie is a day old and it will become crisp and fresh. The kind of pastry depends upon the amount of fat used and the method of putting the ingredients together.

Director Sperry Domestic Science Department

SPERRY PLAIN PASTRY

NOTE: All measurements are level and flour is sifted once before measuring. One-half pint measuring cup is used.

One and one-half cups Sperry Drifted Snow Flour, ½ teaspoon salt, ½ cup shortening, ⅓ (about) cup cold water.

Sift flour and salt together. Chop shortening into the flour; add liquid gradually, using knife. This dough should become stiff enough not to stick to the sides of mixing bowl. Place dough on moulding board and roll to ¼ inch thickness. Then fold one-third of this sheet of pastry over to the center, folding the remaining third over the first fold, then fold across. Roll to ¼ inch thickness again.

This pastry can be used at once, but is improved if allowed to stand several hours. By folding the dough in this manner, layers of air are enclosed, which expand when the pastry is placed in a hot oven, making the pie flaky. While the oven should be hot at first the heat should be reduced after it has browned.

LEMON PIE

Three tablespoons butter, 3 tablespoons Sperry Drifted Snow Flour, 1⅓ cups sugar, 1½ cups milk, 3 egg yolks, 3 egg whites, 2 lemons.

Cream butter, add ⅓ cup sugar, continue to cream. Beat yolks well; add to mixture, mix flour and sugar; add this to other ingredients and mix well; also add lemon juice and grated rind, milk and well-beaten whites of 2 eggs. Bake in pan lined with pastry. When baked and partly cold, make a meringue of remaining egg and set in a cool oven to brown.

MERINGUE

White of 1 egg, 2 tablespoons granlated sugar, ½ teaspoon lemon flavoring. Beat egg very stiff; add 1 tablespoon of sugar. Beat well and add remaining sugar. Meringue should be placed on cold or partly cold pie or pudding and baked in a slow oven.

PRUNE PIE

Two cups prunes, ⅓ cup sugar, 2 teaspoons butter, 2 tablespoons Sperry Drifted Snow Flour, 1 teaspoon lemon juice. Wash prunes and soak in cold water to cover, 2 hours or more. Cook slowly in same water until soft. Remove stones, cut prunes in quarters and mix with sugar and lemon juice. Line plate with pastry, cover with prunes, pour over liquor, dot with butter, dredge with flour, put on upper crust and bake in moderate oven.

CALIFORNIA CULTIVATOR

and **LIVESTOCK** *and* **DAIRY JOURNAL**

Los Angeles *An Illustrated Weekly for the Rural Home and Ranch* ***San Francisco***

Vol. LVII **August 20, 1921** **No. 8**

Letting the Sun Do It in California Dry Yards

THE proportion of fruit which is going on the trays is much greater than for several years. In the past canners have been able to prepare our fruits so as to command higher price for that of canning quality than could possibly be secured when dried or evaporated. But last year, with sugar at 25 cents per pound and a market condition which looked like exceptionally long prices, induced the putting up of great quantities of high quality canned fruit. Today the packer is trying to get the sugar and fruit cost out of that last year's pack, hence limited demand for canning quality and the calling into action of the sulphur house and fruit tray. This has, however, enabled our producers to get their fruit into form for holding until cooperative marketing secures fair return to the producer.

Established 1877 Forty-fourth Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877

Combined with California Cultivator 1914 Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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Copy for change of advertisement must be in the office on Saturday preceding date of issue. New advertising copy must be in the office Tuesday preceding date of issue to insure insertion.

Advertising rates furnished on application.

The Sacramento office is Room 210 Ochsner Building. All mail pertaining to livestock should be addressed to our Sacramento office.

The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

Member ASSOCIATED FARM PAPERS

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S. E. Leith, Fifth Avenue Building, New York.
C. A. Cour, Globe Bldg., St. Louis, Mo.

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Entered as second-class matter February 12, 1900, at the post office at Los Angeles, California, under the Act of March 3, 1879.

Saturday, August 20, 1921

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

If among the more than 40,000 Cultivator's weekly circulation any fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

EDITORIALETTES

Now it looks as if the dryers of peaches and apricots and prunes, especially, will find ready market for their product. The dried 'cot holdover is practically cleaned up; prunes have been in big demand abroad; future peach prices have been advanced. Altogether the prospects are cheering.

* * *

Imperial Valley shipped practically 10,000 cars of cantaloupes. This was nearly 1,000 cars in excess of any preceding season. The railroads take it that this great movement of fruit is proof that the present high freight rate is acceptable to the Valley growers. We venture, however, there were but few of these growers who received as much per acre for their fruit as did the railway company.

* * *

Capper wins with his bill providing for federal regulation of grain exchanges. It passed the senate after its passage by the house, but there are still some minor differences in amendments requested by the senate. In speaking on the bill Senator Capper denounced the Chicago board of trade as "the biggest gambling hell in the world." It is no credit to this nation that it has permitted this institution to retain its hold as long as it has. Senator Capper added: "It is against the law to run a gambling house anywhere in the United States, but today, under the cloak of business respectability, we are permitting the biggest gambling hell in the world to be operated on the Chicago board of trade. The big gamblers have made the Exchange Building in Chicago the world's greatest gambling house. Monte Carlo or the Casino at Havana are not to be compared with it. The extent and completeness of its system for rounding up suckers explains how the Chicago board of trade must 'sell' more grain every year than the entire globe produces, ranging from $15,000,000,000 to more than $20,000,000,000 in value."

* * *

A lot of us are thinking up what congress ought to do to save us and our industry. This is entirely proper for congress will bear watching. On the other hand, let's bear in mind that congress can't work out our salvation for us excepting as a mere incident. There are a lot of problems the working out of which is entirely in our own hands. For instance, some poultry sharps recently wanted to see how certain types of poultry were producing. They culled out 68 hens, put them in a pen by themselves and at the end of five days test, with heavy feeding, secured exactly one egg. All the protection on earth "won't make money out of them hens."

* * *

With the farm home electric lighting system, often with water under pressure, the telephone, good roads and automobile, there is no reason why every farm home should not have practically all the comforts of the city and in addition many other wonderful blessings possible out in the open air of California—no reason other than possibly that of cost, and here we remind the homemaker out in the broad acres of the fact that this last handicap operates in the city as well as on the farm. It costs money to lay sewers, pipelines for gas and for water, wires for telephones and lights, and the city's use of them is only possible because of awful expenditures and resulting awful taxes. So don't expect to get by on the farm without spending the money for it's worth the price.

* * *

The women who are members of the health department of an Eastern county farm bureau have pledged themselves to wear no more high heels and in addition to do all in their power to induce their daughters to take the same course. The beginnings are entirely wrong. The daughters should have set the style, for instance, there is the length of her skirt.

* * *

Ruskin says: "We can live without pictures, but not as well." Not a farm in California but has its wonderful outlook; it may be of richly colored desert with the green and white capped mountains, or of peaceful valleys, but we are still offered our pictures, that is, if we are wise in planning our homes and build into them broad and open windows. Insist on these wonderful window views so far as possible from every room in the home.

A. T. CURRIER

Alvan T. Currier, one of California's pioneer farmers, died at his home near Pomona, August 13. Mr. Currier first came to California in 1861 and since 1869 has been owner of a ranch of nearly 3,000 acres at Spadra, Los Angeles County. He not only has been one of California's foremost livestock and grain farmers, but entered in his early life somewhat into politics, having been elected to the office of sheriff of Los Angeles County and later to the state senate. In later years he has been devoting most of his energies to his farming operations, although he retained directorate in the First National Bank of Pomona, was president of the Walnut Growers Association, was one of the charter members, and from its beginning president, of the L. A. County Mutual Fire Insurance Company. Senator Currier was born in Maine in 1840.

Mr. Currier's life was not only an inspiration to California farmers but in social and religious life he was always active, giving much of his own time and means.

ETERNAL VIGILANCE

The Poultry Producers of Central California announces the contemplated visit of the general manager to London and other British cities for the purpose of disposing of large shipments of eggs and making a study of possible markets for Pacific Coast produced eggs. In a letter to members the situation confronting Pacific Coast egg producers was touched at some length. From this we take a mere hint:

"Egg production in California has now increased to such an extent that we produce a great many more eggs than can possibly be consumed on the home market. This means that in order to secure reasonable prices in our home market the large surplus must be moved out of the state to other markets. So far we have depended mainly on the New York market to take our surplus; there is no other market in this country that will take many of our eggs at a profitable price. This market is now being supplied to a large extent with white eggs similar to ours in style and quality, from the states of Oregon and Washington. The poultry industry in those states is increasing even more rapidly than it is in California. They must seek a satisfactory outlet for their surplus eggs, just as we do, and consequently they are now very active competitors of ours in the New York market. If the supply of Pacific Coast white eggs on the New York market increases faster than the demand, this condition will naturally tend to lower the price, which in turn will react on our home market and mean lower prices here."

All of which means that the poultry business is looming large; also that its only salvation is everlasting cooperation. Not only must the cooperation be complete in the neighborhood, but in all the state, and especially between the different associations. The independent who will insist on remaining "free and untrammelled" is jeopardizing his own future. Worse, he is jeopardizing the future of the entire industry.

DELAYED IMPROVEMENT

Nipomo, August 12, 1921.—Your editorial "More and Better Roads" noted. Very good. I want to say a word for the Auto Clubs.

I have been agitating for a delayed road improvement between Nipomo and Guadalupe. Among other things I wrote to The Automobile Club of Southern California about said improvement and they jumped on the job with both feet, and immediately. And I firmly believe that the Auto Club has brought this particular improvement several years nearer, as we have reports that the work will be started very soon.

I received two very nice letters from the club, and I am not a member of this club either.

All of our public servants are politic and politicians need attention after elections.

Farmers are generally too busy for this work and they should appreciate the efforts of the automobile clubs as well as the work done by the California Highway Commission, county engineers, etc. Yours truly, Frank Littig.

We appreciate the opportunity of getting this particular angle on the present fight being made by the automobile clubs. If we have it correctly, one of the principal contentions of the clubs has been that the highway commission would not accept suggestions which have been made by it or its engineers. If the contention of our subscriber is correct that the automobile club did secure the desired improvement more quickly than would otherwise have been possible, it is proof that in at least one instance the automobile club secured what it went after.

However, we think there is one statement in Mr. Littig's letter which is not entirely correct. We do not believe that "all our public servants are politic and politicians." When a typical politician's activities are brought to light by the merciless publicity of the daily paper we sometimes jump to the conclusion that all our public servants are corrupt, or at least doing politics. It would be as fair to take the first news page of a sensational daily paper with its murders and scandals concerning an infinitely small percentage of the people as the correct measure of the life of average people.

Our needs and our private expenses increase, sometimes we feel without rhyme or reason. Likewise, we, the taxpayers, realize that our state must march forward and our public needs and public expenditures increase much in the same proportion as do our own. Hence, taxes mount. We help them along by voting new bond issues. However, the tax gatherer is in little favor for we forget the enthusiasm of election day at taxpaying time. We become angered, and it is easy to charge our public servants with being corrupt.

Or if there is plainly no corruption and our pet schemes fail of accomplishment we listen attentively when agitation is started which embarrasses the people who have charge of the work and compel them to fight a defensive battle instead of accomplishing real advance. Every step of the present fight on the commission is causing delay in California's good roads construction.

We believe there are thousands of conscientious, hard working officials in this state doing their level best.

Notwithstanding that, we would suggest that if farmers are generally "too busy for this work" they may well use some organized effort to do the "watching." But when the long headed "watchers" after years of faithful service take steps which make it look as if the "politics" were not all on one side, is it not wise for us, the taxpayers and laymen, to open our eyes and make some observations of our own?

For instance, quoting from the report on the California State Highways by the California and Southern California Auto Clubs, this paragraph on Page X:

"The Commission's attitude toward highway contractors of excellent standing has been the cause of severe criticism from contractors of the soundest reputation. Highway contractors in the past have found little profit in highway work. The list of contracting firms who have become bankrupt is astonishing. Numerous instances of rigid and drastic rulings involving considerable losses to the contractor have been cited, causing some contractors to claim that the Commission's policy has been one of alienation rather than of cooperation. Such policies can have only one result; an increase in future prices bid."

This is quoted not with the idea of endorsing entirely the position taken by the highway commission, neither of endorsing the attitude of the automobile clubs in making this a part of their report. However, we cannot see in that the slightest cause for a charge of doing politics or of failing to watch after the taxpayers closest interests. There is naturally opportunity for contention between employer and employe, and there have been plenty of occasions in the building of California's highways where contracting firms have not built according to specifications, but we have never heard it charged that this was done with the connivance of the commission, and there is evidence in the report of the automobile club that the commission has been absolutely on the square with the taxpayer.

To us it appeals as an encouraging fact that we have a commission looking after the interests, not of the contractors, but of the taxpayers, and more than a little strange that such action should be presented to the taxpayers as blameworthy.

California Cultivator

Vol. LVII, No. 8 | Los Angeles, August 20, 1921 | One Dollar Yearly

Cooperative Farmers Invest Quarter of a Million

COOPERATORS of California have furnished abundant proof of the fact that they can really and truly cooperate, that they can go down in their jeans and dig up the money which will construct buildings and purchase appliances and provide marketing machinery which makes possible disposal of their products at a profit, or at least that stands a show for profit when marketing conditions are normal. The best of it is that our cooperators are big enough to see through the dust which is sometimes stirred up by antagonizing interests. They see through it and far enough into the clear beyond to stand pat and wait till it lifts.

This has been largely because of the initiative taken by a handful of orange growers nearly 30 years ago. The crude appliances possible to those early cooperators and the lack of men with knowledge of marketing or even of packing methods make it appear wonderful to those who look at present methods and then backward to those days in the early 90's. Those early cooperators used railway warehouses, open sheds along sidetracks, fruit canneries, and all without equipment, and still they stuck together. Ultimately the stronger hearted urged equipment, and a few hundreds, sometimes thousands, were borrowed, and pitifully inadequate structures put up to handle the fruit.

Time has passed and on this page appears the photograph of one of the world's finest packing houses. It is all concrete; it is practically fireproof; it is complete in every sense, that is, for the purpose of preparing for market and packing oranges. It is in the little town of La Verne near Pomona, Los Angeles County. D. G. Arbuthnot has been for many years manager of the association and is now operating in the old packing house near this new one, construction of which has just been completed. Work will be continued in the house so long as needed. In addition lemon growers of the same section have an association with separate house handling about 150 cars of lemons. The directors of the La Verne Fruit Exchange, La Verne Orange Association, and La Verne Lemon Association are: D. C. Crookshank, president Fruit Exchange and Orange Association; Dr. V. W. Baker, vice president Fruit Exchange; H. E. Howard, president La Verne Lemon Association; L. E. Cree, vice president, La Verne Lemon Association; R. L. Davis, vice president, La Verne Orange Association; V. Peyton, W. S. Romick, H. V. Bright, A. J. Gilbert, J. C. Gapp, I. L. Noggle, John Weber, J. T. Titsworth.

When California Producers Cooperate They Cooperate Right

Here is a packing house built and owned by orange growers at La Verne in eastern Los Angeles County. It cost $275,000 and is complete in every respect.

We have asked Manager Arbuthnot for some facts regarding the plant and he writes:

"The new plant was started about the middle of March and we packed and handled through that plant 300 cars of Navels. The plant has proven very efficient and satisfactory in every respect.

"The dimensions of the packing house proper are 136 by 180 feet, with basement under the entire structure. About one-half of this basement is used for the precooling plant having a capacity of precooling 50 cars of oranges. We carry the refrigeration to the rooms by means of a large circulating fan which forces the cold air through the room. This is a continuous circulation, the fan blowing the air across a series of coils through which we pump the cold brine from the ice tank. We can thus maintain any temperature we desire. It takes about 72 hours to properly precool a car of oranges.

"In addition to the packing house we have a machinery room 50 feet by 80 feet. All the necessary mechanical equipment for an ice plant is installed in this room. We are using electric power and have installed a motor of 125 horsepower. The type of motor which we are using is something new to this country, being synchronous motor using 22 volts. It is directly connected onto the shaft and drives the compressor at high speed. The plant has an ice capacity of 55 tons. This plant has a capacity for packing and precooling from 10 to 12 cars per day. The cost of the entire plant including all the necessary ice making equipment is approximately $275,000.

"The association owns another plant which has been built for 12 years. Seven years ago a precooling plant was installed in connection with the packing plant which has proven very satisfactory. The output of the association varies from 1,200 to 1,600 cars per year.

"In addition to these packing houses the association owns a number of houses built for its employes, principally the Mexicans. These houses consist of three rooms and are sanitary in every way. The association also has recently built a dormitory for its packing house employes which has about 20 apartments that are very convenient. During the heavy shipping season the association employs about 300 workers.

"The lemon growers have a separate association which handles about 150 cars of lemons. Both the Orange and Lemon Associations handle their sales through the La Verne Fruit Exchange, D. G. Arbuthnot being secretary and manager, and he is also general manager of the La Verne Orange Association and La Verne Lemon Association. E. P. Jochimsen is manager of the La Verne Orange Association, and J. W. Lamont is the manager of the La Verne Lemon Association."

Concerning the Yuccas

By William M. Bristol

WITHIN the past few weeks there have been many protests against the cutting of the blossom stalks of the Yucca Whipplei, those gigantic and spectacular plumes of creamy white flowers which jump up like magic all over the hills and washes of Southern California in springtime. Everyone agrees that this is the most wonderful and interesting of all the California flora and it is not strange that many have cried out against the vandalism.

I heartily agree with the objectors that these marvelous flowers, like all the wild things of nature, lose their charm in captivity. It is only fair to say, however, that the danger of extinction of the species is not as great as feared. It seems to be assumed that cutting the blossom stalk kills the plant, but this is not quite true. The plant dies anyhow as soon as it has bloomed and ripened its seed. To be sure, continued and systematic cutting of all blooms would eventually exterminate the family, but it would require at least a quarter of a century to accomplish this for the plants which bloomed this year have been somewhere from 20 to 30 years getting ready for their day of destiny.

The life habit of the yucca in question seems to be known to but few people, even among those who dwell in their midst. Perhaps it is because a dozen of the plants were growing within a hundred feet of the spot where I built my house on the East Highlands mesa in San Bernardino County, 30 years ago, that I have come to know them so intimately. At that time these plants were almost as large as others which bloomed that same year. But not one of them were ready for their crowning glory—and their crowning sacrifice. In fact, it was nearly a dozen years before even one of them was ready and nearly half a dozen years more before all of them bloomed. In the meantine I had gone into the hills and dug up small plants to replace those which nature had put in my dooryard—for to captivity of that character I do not object. It must be the transplanting hastens the blooming of the yucca, for these imported wildlings all finished their careers within six or seven years after they were moved.

About ten years ago I planted a yucca seedbed. At that time the people of Redlands started a movement to beautify the highway across the Santa Ana wash between their city and Highland. It occurred to me that a logical way to beautify a stretch of waste country would be to augment the indigenous vegetation which has demonstrated its ability to thrive therin. The evergreen scrub cedar, also known as juniper, the yerba santa and the yuccas flourish in this two mile strip of wash, but the attractiveness of the drive would be enhanced by increasing their numbers by ten or even a hundred fold. I planted a hatful of yucca seed, the product of two or three stalks, and raised 10,000 plants. They grew like weeds in their unusual environment, and when they were a year old I offered to donate them for planting along the roadway in question. But the committee in charge of the adornment of the said highway elected to plant two straight rows of eucalyptus trees in that drouthy soil, and after making an extensive planting of the little yuccas in my home grounds I reluctantly threw the rest away. The two rows of eucalyptus trees, kept alive by the expensive method of hauling water to them for a number of years, serve today to advertise the poverty of the sand in which they were set and, fortunately, do not cut off the magnificent mountain cyclorama which the wash drive affords. Although I am a member of the San Bernardino County forestry commission I am frank to say that I do not favor shading a paved road nor cutting off, with monotonous rows of shade trees, the scenery for which California is famous. In these days of autmobiles no thought need be given to the comfort of the horse; and as for the motorist himself, he carries his shade with him wherever he goes. But I have digressed.

I said in beginning my story that I am intimately acquainted with the yucca. I must add, however, that only a few months ago I learned something about them that had escaped my notice for 30 years. I had observed that those growing along the Highland foothills bloom in April and May, while those of the Cajon Pass region come several weeks later. I supposed this

(Continued on Page 186.)

Agricultural News Notes of the Pacific Coast

Northern California

Colusa County reports two crops as heavy; grain and plums.

The Shasta County fair wil be opened at Anderson, October 6.

Colusa is sending out heavy shipments of barley on river barges.

Petaluma is celebrating Egg Day today and tomorrow, August 20 and 21.

Humboldt County reports a big crop of wild blackberries of excellent quality.

Dr. W. P. Jackson of Chico has been named livestock inspector of Butte County.

Pear growers in Eldorado County report excellent results from use of alfalfa for fertilizer.

More than 100,000 young pear trees in Contra Costa County are this year in bearing for the first time.

By far the heaviest tree planting in El Dorado County last spring was of pears, the number being 34,227.

The "Inter-Mountain Fair" of Shasta County will be held in Fall River Valley, at McArthur, October 8-10.

Goat breeders are expecting the coming state fair to show the largest exhibit in goats yet made in this state.

Yuba County supervisors have appropriated funds for exhibiting and advertising Yuba County at the state fair.

California Almond Growers Exchange is putting up a big fight for adequate tariff. Manager Tucker is in Washington.

Andrew Johnson, near Santa Rosa, Sonoma County, has a field of kale in which some of the plants are more than 11 feet high.

In the week ending July 30 there were 43,500 dozen eggs shipped from San Francisco for Hawaii and 83,650 dozen for England.

The dairymen's association on the State Land Settlement Colony at Durham has selected J. L. Cummings to operate the creamery station.

Ranchers at Sycamore, Colusa County, have finished harvesting and hauling of grain. Both quality and quantity are better than last year.

The Glenn County pig club has 31 members, enthusiastic boys and girls who are keeping close track of the gains made by their pet pigs.

The Sacramento County forestry board has begun suit against an electric power company which is alleged to have cut trees between Twelve Mile House and Folsom.

Barley growers at Red Bluff, Tehama County, members of the farm bureau, sold their barley at $1.25 a hundred weight, claimed to be the highest price paid in the state.

Petaluma expects soon to have a poultry experiment station in the old F Street school. Report is that the station will be handled cooperatively by national and state departments.

At a meeting of Shasta County dairymen at Redding last week a committee was appointed to take the census of dairy cows and organize a dairymen's branch of the farm bureau.

Dr. J. C. Whitten of the University of California and J. J. Fox of San Francisco have been named judges of the horticultural exhibits at the 1921 California State Fair, September 3 to 11.

Central California

Sweet potatoes are being shipped from Turlock, Denair, Hughson and Keyes, Stanislaus County.

The first carload of Thompson Seedless grapes to be shipped from Lindsay, Tulare County, went east July 28.

Prices set for figs in Tulare County will net the growers seven cents for Adriatics and nine cents for Calimyrnas.

The college of agriculture of the state university announces a correspondence course of 12 lessons in practical beekeeping.

The Tulare County Fruit Exchange will ship out between 1,500 and 1,600 carloads of citrus fruit, Navels, Valencias and lemons.

Turlock melon growers find the Eastern market is being supplied with local melons and in consequence are receiving lower prices.

Poultry culling demonstrations were held in Kings County last week by R. B. Easson, poultry specialist of the University of California.

The Central California Berry Growers Association has named a minimum price of 8 cents to canners for August-September strawberries.

The onion seed crop is being harvested in the Richgrove section of Tulare County. Much of the onion seed is grown as intercrop in orchards.

O. E. Lambert, Stanislaus County, has six acres of Hubam, or annual white clover, in a young plum orchard, that is seven feet high, planted in late spring.

Selma, Fresno County, is planning to build a community ice plant. Representatives from that city have been inspecting the community plant at Lindsay.

Twenty-four students from the division of pomology of the University of California visited Kings County last week to make a study of fruit growing and marketing.

Mayor Hart of Fresno called a conference of towns in the district about Fresno, Saturday, August 6, to organize association for developing a power and irrigation project in Squaw Valley.

Plant Pathologist Boncquet of Tulare County has asked the supervisors for an appropriation of $2,000 with which to carry on special study of June drop. He has made similar request for fund for studying grape disease.

Horticultural Commissioner Haupt of Kings County reports: "During the fiscal year of 1920 and 1921 a total of 1,870 cars shipped from Kings County to Eastern markets, all of which complied with the standardization laws."

Auto traffic control on the Giant Forest road between Kaweah and the forest has been in operation for a month and has proved extremely satisfactory. During the last two weeks of July nearly 2,000 autos entered the park over this road.

The Modesto Herald says: "The sweet potato outlook in the Turlock district is one of the best in years, taking it acre for acre. Total acreage is approximately 3,285. It is probable that the price at the beginning of the season will be from 8 to 10 cents a pound."

Southern California

A great Iowa picnic was held at Bixby Park, Long Beach, last Saturday.

Orchardists of Yucaipa met August 9 to discuss picking prices for apples.

The Imperial Valley reports an unusually large planting of sweet corn.

The American has installed a sugar beet dump at Wintersburg, Orange County.

A horse show will be on the program of the Ventura County fair, October 5-8.

Escondido, San Diego County, will celebrate its annual grape day September 9.

The annual meeting of the Los Angeles County farm bureau will be held at Ganesha Park, Pomona.

The Southern California farm bureau egg laying contest begins at Pomona, October 1.

San Gabriel Valley communities are still up in arms against the hog garbage feeding proposition.

Ojai, Ventura County, will hold a big free barbecue and carnival during the last week in August.

Riverside has to date shipped one-half more lemons than were shipped during the whole of 1920.

Two Orange County sugar factories, one at Dyer and one at Huntington Beach, commenced operations August 1.

Talbert, Orange County, celery growers set out the first plants during the first week in August, totaling 55 acres.

Ventura County is amused and somewhat disgusted with newspaper stories of a citrus parasite which is terrorizing orchardists.

Plantings of Acala cotton in the Palo Verde Valley, Riverside County, are showing 1⅛ inch staple with heavy crop on the stalks.

An Agricultural Taxpayers League has been organized in Ventura County. The first regular meeting will be held at Ventura, August 29.

The associated chambers of commerce of Coachella Valley are getting behind plans for celebrating the Date Festival, October 21-23.

Farm Adviser Fox of San Bernardino County has resigned to take position in the agricultural department of the Pasadena high school.

The Orange County farm bureau and California Fruit Growers Exchange have established a cooperative employment bureau at Santa Ana.

Santa Barbara County farm bureau is now collecting exhibits which will represent it at the state fair. Walnuts, lemons and beans will have chief honor.

Little Bear Lake in the mountains north of San Bernardino is reported to have been sold to Los Angeles capitalists who will build a big pleasure hotel.

President Jerome of the California Bean Growers Association says that Orange County bean growers as a whole have declined to enter the state association.

Ranchers of the Palo Verde Valley, Riverside County, are getting together in an effort to bring in a large number of feeders from Arizona. Recent reduction in freight rates is the occasion.

The Coast and General

Montana will hold ten county fairs from August 26 to October 1.

Pomegranates are reported to be a heavy crop throughout all parts of California.

The Washington apple crop is rated 98 per cent of normal as against 65 per cent last year.

A cotton gin on the U. S. reclamation railroad, 12 miles south of Yuma, was totally destroyed by fire.

California shipments of Elberta peaches will total 500,000 boxes, the same amount as shipped last year.

Figs are the only subtropical fruits listed in the 1920 census report as growing in the state of Washington.

The berry crop of the Puyallup district, Washington, comprising five counties, will be three times that of 1920.

High waters on the Verde river damaged the new intakes of the new city water system of Phoenix, Arizona, which is nearing completion.

Sloper Brothers, Independence, Oregon, planted broccoli between the rows of their hop fields on 12 acres and received $4,700 for the crop.

Two ten weeks courses in agriculture will be given by the University of Idaho at Moscow, the first beginning October 7; the second, January 4.

C. U. Pickrell, formerly manager of the Babbitt-Cowden ranch of the Salt River Valley, has been selected county farm agent for Yavapai County, Arizona.

The report of the Arizona agricultural statistician for July indicates a condition of 89 per cent of normal for the cotton crop as compared with 64.7 for the entire country.

The first load of 1921 cotton in the Salt River Valley, Arizona, was hauled to the gin July 30. While this is the so-called "volunteer" cotton, it has a staple length of 1 9/16 inches.

The cost of hauling freight over the new road system in Maricopa County, Arizona, is estimated by stage companies to be approximately one cent for each 100 pounds for each mile.

Cantaloupe shipments from the Salt River Valley of Arizona totaled 1,459 cars, compared with 1,146 in 1920, 1,621 in 1919, 1,173 in 1918, 1,314 in 1917, 865 in 1916, 490 in 1915, and 562 in 1914.

Rains have fallen over nearly all parts of the Arizona range country during the past week. The result will be the saving of thousands of head of cattle and sheep. Although water shortage may imperil livestock in some districts before fall, the rains have helped out feed conditions and to a very large degree will provide sufficient stock water to prevent further loss.

An example of cooperation is that of the residents of the Chandler district in the Salt River Valley. The direct road to Florence from that town was badly in need of repair but no funds were available, so the citizens turned out and practically built seven miles of road. This is a part of the Bankhead national highway and shortens the distance to Tucson from Phoenix several miles. Citizens of Florence are to rebuild a portion of the road west of that town.

Home Made Fruit Juices

By W. V. Cruess, University of California

FRUIT juices have many uses in the household and serve to maintain health during that season of the year when fruits are not abundant. On hot summer days nothing is quite so refreshing as a generous glass of iced berry or grape or other highly flavored juices. Salads, gelatins, fruit pies and fruit punches are greatly improved by the addition of fruit juices. There are many excellent juices on the market and we should by all means patronize the manufacturers of such juices to the limit of our means; but we can supplement the factory made products by putting up in the kitchen a home made supply from the fruits of our own orchards or from fruit that we may purchase from our neighbors. The process is not difficult and is more interesting than canning.

Equipment Needed

Practically every kitchen contains most of the equipment needed. A large aluminum or agate ware kettle is needed for heating the fruit; a wash boiler sterilizer for sterilizing the bottled juice; a small meat press or small fruit press is desirable, although the juice may be expressed from the fruit by use of a cheesecloth bag; crown caps (soda water bottle caps) and a small hand power bottle capper such as most hardware stores advertise for the use of "home brewers" is very desirable but not necessary, and a dairy thermometer registering to 180 degrees Fahrenheit or above is needed. The thermometer can be purchased from a drug store usually for less than $1. For citrus fruits a glass cone of the type distributed by the California Fruit Growers Exchange to its customers is required. Grocery stores carry these.

Crushing the Fruits

A food chopper will be found very satisfactory for crushing all varieties of fruits. It is slow but effective. Berries, grapes and other soft fruits may be crushed with the hands or with a potato masher. Crushing facilitates heating and pressing out of the juice.

In order to obtain a good yield of juice and to improve the clearness of the product the fruit should be heated, with two exceptions. Do not heat citrus fruits or pomegranates.

An aluminum or heavily tinned or agate ware kettle must be employed in heating the fruit in order that there shall be no action of the juice on metal. Do not use galvanized metal. It forms a violent poison with fruit juice.

Place the fruit over a slow fire and stir constantly with a thermometer inserted in the crushed fruit, until the temperature of the fruit reaches 160 degrees Fahrenheit. Constant stirring avoids overheating of some portions of the fruit. Fruit which is heated to boiling will have a cooked flavor and not the fresh fruit flavor that it is desirable to retain. This point is extremely important. Many recipes call for heating the fruit or juice to boiling. This is a serious mistake.

Some Steps in Processing Fruit Juices
1, Heating the crushed fruit; 2, pressing out the juice; 3, straining the juice.

As soon as the fruit reaches 160 degrees Fahrenheit remove it from the fire and to the press.

Pressing

This is accomplished in one of two ways. A small hand power meat or fruit press is best. If such is available first place in the press a large heavy, clean cloth or two or three thicknesses of cheesecloth. The cloth should entirely enclose the fruit. If press is not available press through a cloth bag with the hands.

Straining the Juice

Strain the hot juice through a heavy jelly bag several times until it is as clear as it is possible to make it by this means. Citrus fruit juices should be given a rough straining only through cheesecloth to remove the coarser particles because most of the flavor of citrus juices is in the pulp.

Bottling the Juice

Fill bottles to within about 1½ inches of the top. If ordinary corks are to be used first boil the corks in water; insert them hot in the bottles and tie them down securely with a string to prevent their being forced from the bottles during pasteurization. Crown caps, that is soda water bottle or "home brew" bottle caps, need not be boiled. Place them on the bottles and close them.

The tying of corks requires considerable skill, but explicit directions will be given by any druggist; the loop used by drug clerks in tying magnesium citrate bottles, etc., is the one to use.

Pasteurizing

The bottled juice will soon ferment, burst the bottles and damage the features of the nearest bystander, unless it is pasteurized within 48 hours after bottling. It should be pasteurized at once. Pasteurization is simply sterilization at a temperature below that of boiling water.

Place the bottles horizontally in a large pot of cold or lukewarm water. A false bottom consisting of a screen or a large cloth should be used to protect the bottles from the direct flame.

Cover the bottles completely with water. Heat slowly with thermometer inserted in the water until the temperature reaches 175 degrees Fahrenheit. Keep the water at this temperature for 30 minutes. Remove the bottles and allow to cool in a room where the draft will not strike them.

Corked bottles should be sealed by dipping the necks of the bottles in hot melted paraffin. Crown caps do not require this treatment.

The bottles in any case during pasteurization must be placed horizontally in order that the hot juice shall be in contact with the caps or corks; otherwise the air space in the top of the bottle protects the cork or cap and molds or yeasts thereon are not killed.

Use of Jars

Ordinary fruit jars are suitable for fruit juices and are used in the same way as bottles. The juice is placed in the jars to within about one-half inch of the top. Scalded rubbers and lids are placed on the jars and the lids screwed or clamped down tightly. The jars are then placed horizontally in the sterilizer and pasteurized as directed for bottles.

Sweetened Berry Juices

All berry juices and citrus juices require the addition of sugar. For each pint of juice add one pound of sugar for sour juices and one-half pound for soft ripe berries. This is added after the juice is strained and before bottling. These juices are diluted with water when served.

Orange Juice

One pint of orange juice, one-half pint of lemon juice and 1½ pounds of sugar make a good combination. Orange juice alone soon loses its flavor after bottling. Bottle and pasteurize.

Grapefruit Juice

One pint of the juice and one-half pound of sugar is about the proper ratio of juice to sugar. Bottle and pasteurize.

Lemon Juice

Lemon juice requires the full pound of sugar per pint of juice. Bottle and pasteurize.

Grape Juice

Use equal parts of Muscat and red wine grapes. Crush. Heat to 160 degrees Fahrenheit; press; strain; bottle and pasteurize at 175 degrees Fahrenheit for 30 minutes.

Or use Concord or Isabella grapes. Crush, heat and bottle as directed for the Muscat blend.

Wine grapes alone are rather flat in taste, hence the need of adding an equal quantity of Muscat.

Pomegranate Juice

This is one of the best juices made. Open the fruit and remove the red "seeds." Discard the outer rind and pulp. Crush the "seeds" and press out the juice. Heat the juice to 160 degrees Fahrenheit and allow to stand over night. Strain. Add one-half pound sugar per pint of juice and bottle and pasteurize. Serve diluted with water.

Apple Juice

Crush; heat to 160 degrees Fahrenheit; press; strain; bottle and pasteurize. Or crush; press; heat to 160 degrees Fahrenheit; strain; bottle and pasteurize. The second method is preferred.

Kern County Boys Show the Way

By R. P. Royce

ELK. DICKSON, local club leader of the Kern County Union High School, has organized one of the most successful boys agricultural clubs to be found in the whole country, and during the past two years the activities of the club have been of such practical worth as to attract wide attention and the club members have come to be important factors in the agricultural development of their county.

The club was organized, or rather reorganized, in the fall of 1919, and the first project inaugurated was a pig litter contest. Thirty boys purchased pure bred sows, and in passing it might be mentioned that the class of sows secured was considerably above the average used in pig club work. A local bank financed the operations of the club to the extent of a loan of $5,550. Later the Kern County Union High School loaned the club $1,000 for the purchase of a suitable boar the services of which were available to all the club members.

During the first year accurate account was kept by each boy of the cost of raising his pigs to weaning age. The figures were published in a 72 page bulletin.

Last fall and again this past spring feeding tests were undertaken to ascertain the cost of producing a pound of pork. As is the usual custom, the results are given in terms of grain. The following figures, which are taken from the club's latest publication, "The Cost of Raising a Pound of Pork in Terms of Grain," should prove of interest to men interested in raising hogs and should demonstrate to many barley farmers a better method of marketing their crops.

The first test was started September 24 with 12 pure bred Poland China barrows, and is described in detail by Earl Ahmann, one of the club boys, as follows:

"They were good, thrifty pigs. Their weights varied from 52 to 121 pounds, making an uneven lot of hogs, but a good one to collect records from, as the results show how hogs gain when started at different sizes and ages.

"When entering the test these barrows were given range on fair alfalfa pasture and a self feeder with ground barley, ground milo and tankage. Each morning and evening they were fed all the soaked feed they would clean up at the time of feeding. This soaked feed was a mixture of equal parts of ground barley and ground milo.

"After the first month of feeding the alfalfa pasture became very short, due to cold weather, and hardly figured any longer in the ration. Beginning the seventh week, we started feeding a lot of comparatively poor barley—not very finely ground and somewhat dirty. It will be noticed that considerably more of this barley was required to make a pound of gain than

(Continued on Page 184.)

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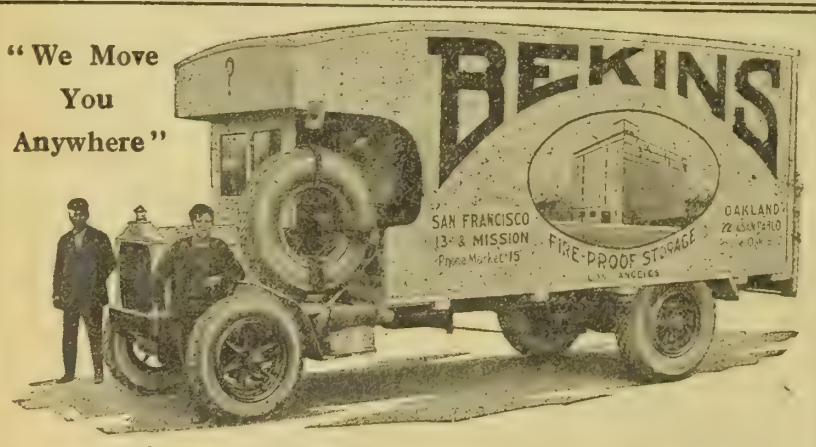

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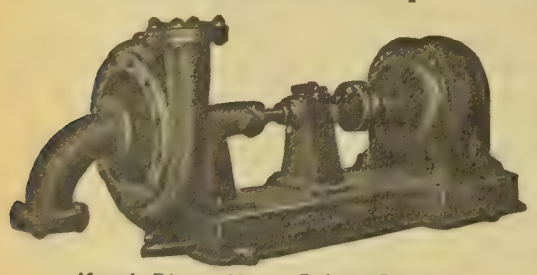

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Canning Peach Growers Organizing

By M. D. McLeod

WE have many outstanding examples of the benefits to farmer and consumer alike of the cooperative idea. The American farmer is probably unlike any other farmer in the world. He is progressive, not saving. When markets are good and prices high he thinks of nothing further than improvement, enlarging his acreage, buying out his neighbor in order to have larger holdings. The latest type tractors, harvesters, or other farming implements must be seen at work on his fields or in his orchards. There seems to be very little thought that next year may not be so prosperous.

The American farmer has always been an individualist, but today he is forced to sell his produce to combinations of keen business men who know when they have an advantage. They understand the situation and know that so long as they can work upon unorganized industry they have their hands on both the credit and debit side of that particular line. Therefore, upon the realization of these facts we have witnessed from time to time the organization of one farming industry after another. It is only necessary to look at the personnel of the originators of cooperative movements. They are mostly men of previous commercial business experience, men who have been drawn into ranching or farming through inheritance or voluntary investment. These are the men who have quickly realized the unsatisfactory business position of the farmer. These are the men who are helping today to put the producing end on a par with the selling end, and we should be very thankful.

It is natural then that the last of the great unorganized fruit industries of California, that of the canning peach growers, should heed the signs and rid itself of the old threadbare byword of "independence" for that of "cooperation." This has been done in the northern districts with as much success as could be expected from local organizations, but we must have a state unit rather than county units as the latter may be set at each other's throats, and while they have been the stepping stone to greater cooperation we can readily pick the flaws, and should correct these as quickly as possible.

A state organization has already been started by the growers of Sutter County who are at present about 60 per cent associated and incorporated under the name "Sutter Peach Growers," with articles of incorporation providing for state wide expansion. They are now campaigning the rest of the state. The first meeting was held August 16 at Walnut Grove, Sacramento County, followed by meetings at Modesto, Atwater, Selma and today, August 20, at Visalia. Riverside County will be included August 22.

Enthusiastic support of the plan is prevalent throughout our entire preparation. Growers do not wish to see another $35 year. We cannot return our investment during the life of an orchard at $35 per ton for the fruit. Our object is to stabilize returns, to keep them within reasonable limits and profitable income. In order to prevent $10 years, such as 1915, we must prevent $100 years such as 1920. If we allow the pendulum to swing too far one way we must expect that through the natural laws of nature it will swing just as far the other. Therefore, it is plain that in order to stabilize we must have a governor and that governor must be a central office run absolutely in the interests of the growers. This office will collect information and data regarding costs and market conditions that will place it upon a par with any organized branch of commercial enterprise with which we may be called uopn to compete. We will know as much about our own business as anyone else, which is not the case today. We want to see the buyers and canners prosper because in so doing they are spreading California fruits and vegetables throughout the world's markets and are helping in the distribution of the vastly increasing production which in the past 11 years has multiplied 300 per cent, and we must help in finding new markets through a well laid plan of advertising. If this is not done we will simply have to stop planting. We cannot go on with this one sided game; from no angle today can it be looked upon as a good business investment.

Prune and Apricot Growers

"MOST encouraging" is the good word of comment from the California Prune and Apricot Growers Association.

In discussing the situation, Mr. Coydendall reports a practical clean-up of the old crop apricots and an early market development on the new crop at excellent prices. "With the opening of the harvest season the very light cannery purchase and consequent increase in dried production, the market on apricots slumped temporarily. Although our association policy is somewhat changed this year in that we are not opening with guaranteed prices, our firm stand through the period of slump enabled us to bring about recovery and have now a very sound market that we hope can be maintained for the sale of the season's production. Of course, all markets are very susceptible these days to a break on the least provocation, but with our association handling the bulk of the production and holding firmly through periods of slump and backed up by merchandising campaign plan, we are looking forward to a more successful and profitable season than anticipated after the depression of the past year.

"On prunes where we have held over a considerable portion of the past season's crop, the last couple of weeks our market has recovered and we are rapidly disposing of the balance on hand. Our packing houses will be busy for the next two months packing out this holdover. The trade has also begun to take an interest in futures on the new crop. Prices are firming up and apparently a sound demand is developing. From our surveys we have report of an excellent consumer trade developed throughout the country and no overstock on hand at any point.

"The export business is developing marvelously and consumption and sound business seem to be on the increase. Our New York plant certainly places us in close touch with this market and is developing a wonderful business for us. We are at present preparing a shipment of machinery to double the capacity of the New York plant. During the coming season our packing there will be a large item of our business."

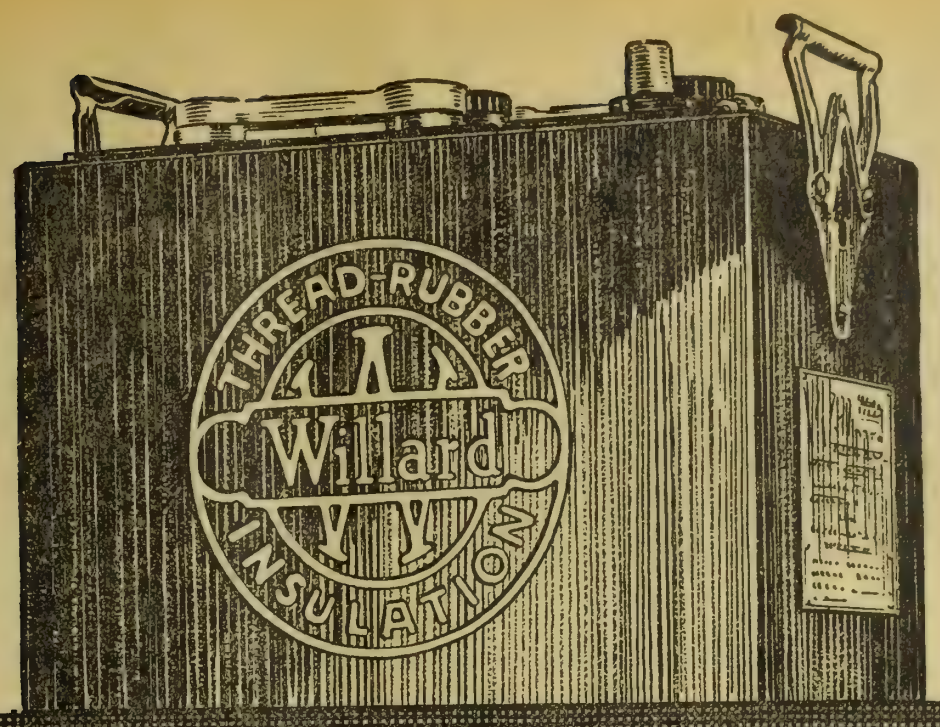
In the Field

H. C. Dunlap, reporting for the field department of the association, considers the market development most timely:

"Our growers, as a result of many months of unsatisfactory market and financial conditions, have become discouraged. Of course, this is very natural for the past season has amounted to a crisis for most of us. The crop of 1920 was produced at the peak of production expense and sold in a large way at the low ebb of the first break. We are now selling to a legitimate trade and the market is founded on a consumer demand which we certainly expect to maintain.

"Our association has recently completed merchandising and advertising plans for the fall and winter season. We are undertaking again this year intensive local campaigns, getting close to the consumer in intimate advertising features and specialty work in the retail trade. This form of campaign was demonstrated to be sound and extremely useful during the past winter and spring.

"Speculative money is not at all Continued on Page 187.)



The Thread-Rubber trade-mark tells you that the plates in your battery are *insulated*—not merely *separated*. Willard Threaded Rubber Batteries are selected by the best brains in the automobile business as standard equipment for 185 makes of cars and trucks.

Manufacturers of 185 cars and trucks have paid the additional price for Threaded Rubber Insulation to assure the users of their product the lowest battery cost per mile of uninterrupted service.

You can buy the Willard Threaded Rubber Battery of any of the dealers in your territory listed below. They all give authorized Willard Service:

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Auburn....Duryea's Serv. Sta.
Bakersfield, Auto Elect. & Batt. Co., Inc.
Berkley, Auto Elect. Serv. Co.
Bishop.....Griffith Bros.
Brawley, Valley Auto Elect. Co.
Burlingame..Davis & Goodhue
Chico.....Vaughan & Fordyce
Coalinga....Coalinga Batt. Co.
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Concord....Ward's Service Sta.
Corona..Corona Auto Elec. Co.
Covina...Covina Sto. Batt. Co.
Dinuba.....Elam & Call
Dunsmuir, Callisch Elect. Sta.
ElCentro.....Valley Auto Elect. Co.
Eureka.....Eureka Batt. Co.
Exeter, Weaser Bros. Serv. Sta.
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Fullerton...Orange Ign. Works, Inc.
Gardena, Gardena Batt. & Ign. Wks.
Gilroy.....Oscar F. Lamb
Glendale....E. W. Cizek Co.
Hanford.....Crow & Railsback
Hayward...Hayward Batt. Co.
Healdsburg, Healdsburg Batt. & Ign. Co.
Hollister, Hollister Batt. Co.
Huntington Pk., Huntington Pk. Auto El. Co.
King City, King City Batt. Co.
Kingsburg, Kingsburg Batt. & Tire Co.
Lemoore...Lemoore Batt. Wks.
Lindsay.....E. M. M. Service
Livermore, Auto Elec. Serv. Co.
Lodi.....J. W. Blair
Lompoc.....King Serv. Sta.
Los Banos, Los Banos Batt. & Tire Co.
Long Beach.....A. C. Walker
Los Angeles, Acme Auto Elec. Wks.
Hollywood Auto Elect. Co.
L. A. Duncan
E. E. Mason
Vaughn-Schuler Co.
Western Auto El. Corp.
C. D. Wilson
Los Gatos, Gem City Serv. Sta.
Madera, Valley Batt. & Vulc. Wks.
Marysville...Raymond Lawton Co.
Merced.....Merced Batt. Co.
Modesto.....Mission Batt. Co.
Monrovia, Storage Batt.Serv.Co.
Monterey....Monterey Batt. & Vulc. Co.
Napa, Auto El. & Batt. Serv.
Newman....West Side Battery & Ign. Co.
Oakland....Auto El. Serv. Co. (2 stations)
Ontario.....R. J. Tobey
Orange, Orange Co. Ign. Wks. Inc.
Orland..The Orland Batt. Co.
Oroville...Records & Brandt
Oxnard...Herbert Hedges, Inc.
Palo Alto.....Reed Co., Inc.
Pasadena.....F. W. Birnei
Paso Robles..... Hibbard & Hibbard
Petaluma, Lloyd's Auto Elect. Co.
Pomona.....Loney Bros.
Porterville.... Porterville Batt. Works
Red Bluffs...Tehama Co. Batt. Co.
Redding..Mt. Shasta Batt. Co.
Redland.....R. B. Goodfellow
Reedley.....Enos & Murdock
Redwood City, Auto Ignition Co.
Richmond..Pioneer Batt. Co.
Riverside, Mission Auto El. Co.
Sacramento....E. W. Cutler
Salinas, Salinas Sto. Batt. & Elec. Shop
San Bernardino..G. H. Stickel
San Diego....J. Stanley LaSha
San Fernando Walter & Walters
San Francisco, Willard Storage Battery Co.
Chas. W. Barnes (2 stations)
Julius Brunton & Sons Co. (3 stations)
H. F. Toomey & Co.
North End Stor. Batt. & Elect. Co.
E. Koenig & Co.
Sanger.... Sanger Batt. Works
San Luis Obispo, San Luis Auto El. Wks.
San Mateo..Davis & Goodhue
San Jose...Electric Batt. Sta.
San Pedro, Ross Sto. Batt. Serv.
San Rafael.....Sparrow Bros.
Santa Ana, Orange Co. Ign. Wks., Inc.
Santa Barbara, Santa Barbara Batt. Co.
Santa Cruz, Santa Cruz Batt. Co.
Santa Maria..Lukeman Bros.
Santa Monica..G. C. Hammond
Santa Paula..Fred A. Ransdell
Santa Rosa..The Battery Shop
Sausalito, Linderman's Serv.Sta.
Selma, Selma Battery & Tire Co.
Sonora, Gibbs Sto. Batt. & Ign. Wks.
Stockton, Stockton Auto Ign. Co.
Suisun, Solano Supp. & Con. Co.
Taft.....Maxwell & Thompson
Tulare.....Hopkins Elec. Co.
Turlock.....Gailey Serv. Sta.
Ukiah.....Auto Elect. Co.
Vallejo..Vallejo Sto. Batt. Co.
Van Nuys..... F. C. Morgan
Venice.....Elect. Serv. Co.
Ventura.....R. B. Haley
Visalia....Ferguson Elect. Co.
Watsonville, Watsonville Batt. Co.
Whittier, Whittier Auto Elect. Wks.
Willows.....Dean's Batt. & Elec. Co.
Woodland, Woodland Batt. Co.
Yreka....The Elec. Supp. Co.

NEVADA

Carson City.....Carson City Elect. Shop
Elko..Harris Elect. Serv. Co.
Ely.....Ely Battery Co.
Reno..... Brown & Milberry
Tonopah.....Tonopah Elect. & Tire Co.
Winnemucca, Winnemucca Batt. & Tire Co.

WILLARD STORAGE BATTERY COMPANY
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THREADED RUBBER BATTERY

Save Loss of Lug Boxes

On August 1 the new California trademark act, which prohibits the misuse of lug boxes used in the fruit growing and canning industry, became effective. Canners assert that the misappropriation of these boxes, which cost from 30 to 40 cents each, has brought about losses of thousands of dollars every year. An investigator for the Canners League of California recently found a crew of Chinamen operating in a large basement in the San Francisco produce district, their method being to pick up canners lug boxes wherever possible, plane off the names stenciled on the ends and sides and sell the boxes as new. All over the produce markets and in all the growing districts of the state for years lug boxes have been used for purposes other than intended, and many peddlers, junk dealers, etc., have made large, illegitimate profits thereby.

Under the new law owners of lug boxes can register with the county clerk the wording or design stenciled on the boxes and publish notice of registration once each week for three weeks in a newspaper. Having given this formal notice to the public covering ownership of the boxes, the burden of proof rests on the possessor of the boxes as to his right to have them or to use them for any purpose other than that permitted in writing by the owner. It is also unlawful for any person to deface such boxes or to remove the marks. A contract which passes between a fruit grower and a canner gives written permission to the grower to use the canner's boxes, but only for the handling of canner's fruit from the orchard to the packing house.

Under the act, according to the interpretation of leading attorneys, peace officers have the right, without special warrant, to arrest any person who has possession of these boxes without written permission of the owner in the same manner that peace officers can arrest a violator of the traffic law or other criminal acts, without special warrant.

Aside from a penalty of 50 cents per box for each box misappropriated, the law provides for prison terms for offenders who traffic in these boxes.

In addition to lug boxes, the law also covers other containers used by manufacturers or producers in any line, provided proper registration is made.

DAYLIGHT ORCHARD FUMIGATION

R. S. Woglum and M. B. Rounds, in the Journal of Economic Entomology, state:

"The writers have carried on experimental daylight fumigation with liquid hydrocyanic acid from the middle of the active fumigation season in October throughout the winter period. As a result of this work they are convinced that, where practicable, daylight winter fumigation is preferable to night work. At this period the insects are especially difficult to kill on cool nights. Furthermore, the trees are in a dormant condition and can withstand a stronger gas even at temperatures approximating 80 degrees Fahrenheit. Particular attention should be given to the exposure.

"While the data accumulated during the past season shows that an experienced and careful operator with a few tents can, by constant manipulation of dosage and exposure, practice daylight work during the growing season, especially on lemons, with partial success, such practice in preference to night work cannot be recommended at the present time. Experience has proved that fixed dosages and exposures are the safest guides to effective fumigation, and the necessary data have not yet been accumulated to establish this condition for daylight summer and autumn work. In fact, there is considerable doubt if a fixed dosage exposure combination can be developed which is practical under the extreme varieties of daylight weather during the usual fumigation season, a situation which is further emphasized by the widely differing conditions between the hot interior valleys and the cooler, more humid coastal belt."

BROWN ROT OF APRICOTS

In California experiment station bulletin 326 by W. L. Howard and W. T. Horne, a description is given of the brown rot fungus (Sclerotinia cinerea), which affects the ripening fruit and the twigs of the apricot. As the attack on the twigs is considered more serious, particular attention is paid to this phase of the investigation. The twigs become infected through the fungus attacking the withering flowers, and not only are the blossoms and young fruits killed, but also the twigs to a distance of several inches. Based on experiments and observations as to the best method of treating the disease, it is recommended that a thorough cleaning out on all blighted twigs and all rotted fruits be made, followed by thorough spraying. Experiments gave such satisfactory results that it was concluded that apricot blossoms may be effectively protected from brown rot by spraying the trees once before they come into bloom with either lime sulphur or Bordeaux mixture. The best results followed spraying when the buds were considerably swollen, although excellent control was secured by spraying at the time the trees were coming into bloom. No evidence was secured to show that spraying apricot trees before the buds begin to swell affords any protection against the disease.

SAN FRANCISCO HARBOR EXHIBIT

The board of state harbor commissioners is to install an exhibit at the state fair that will give a comprehensive idea of the harbor of San Francisco. The booth will be arranged with panoramic view in the background showing the Sacramento and San Joaquin Valleys and the rivers and waters leading into the Bay of San Francisco. The exhibit also will show two models of vessels, one an old time sailing vessel and the other a modern steel freighter, thus demonstrating the change that is taking place in the system of handling the state's products. There will also be shown about 3,000 feet of film depicting the activity of the harbor beginning with the entrance of the passenger steamer through the Golden Gate, the operation of the Belt Railroad, and the shipping and receiving of merchandise through vessels at the piers.

TRACTOR WHEEL SLIPPAGE

The necessity of giving consideration to the slippage of tractor wheels in determining the efficiency of tractor operation is emphasized by E. S. Patch, a prominent tractor engineer. He considers it a factor even greater than that of the economy of the motor proper.

A driving wheel slippage of 35 per cent means that an almost proportional part of the motor power output is spent in doing work that is useless or worse, and that to maintain a given plowing speed, the motor speed must be increased by a like percentage, and this may carry it beyond a safe value.

RECORD APPLE CROP EXPECTED IN NOVA SCOTIA

There is every indication of a record crop of apples in Nova Scotia this year, reports the American consul at Halifax. Trees showed remarkable bloom. Frost affected the setting of the fruit in only a few districts.

KIRKMAN NURSERIES

Reliable Trees and Vines

For Commercial Orchard and Vineyard Planting

Deliveries made direct from nearest propagating plant. To serve the orchard and vineyard planters of California to the fullest satisfaction and efficiency is our aim. We are gratified to have entrusted to us the future of small orchards as well as the large projects. One acre of Kirkman Trees will draw to us greater future plantings. One California orchard has taken two hundred and fifty thousand of our trees. Another four hundred thousand trees. Another six hundred thousand trees and vines together. They have reservations with us for their next season's plantings. The Ex-Governor of Coahuila, Mexico, named his immense project "El Fresno" in honor of our deliveries of nursery stock. We plan to serve every customer so satisfactorily that his future profits will be assured. Correspondence solicited.

Kirkman Nurseries

Fresno, California

Member of Nurserymen's Bud Selection Association of California

LYE PEELING OF FRUIT

Paring peaches, pears and plums with a knife cuts off and wastes a considerable amount of fruit even with the most careful and skilled paring, and careful paring takes a lot of time. Experts say the fruit next to the skin has the finest flavor, and this part is cut off and thrown away with the skin when a paring knife, however sharp, is used. The use of the paring knife adds unnecessary labor and is far less cleanly than when lye is used. So peel these fruits with lye.

The process of peeling peaches, pears and plums by dipping in hot lye solution is approved by the United States government board of food and drug inspection, which reports that lye peeling has no bad effect on the quality or flavor of the fruit and is not contrary to the requirements of the food and drugs act known as the pure food law. Lye peeling saves time, fruit and trouble, is wholesome, rapid, cleanly and economical.

Dipping in Boiling Lye to Facilitate Peeling

All you need is a good iron kettle big enough to hold plenty of water, a wire basket with side handle preferably, to hold the fruit.

To nine gallons of cold water add half a can of lye and a half ounce of alum. Bring to a boil. Have kettle large enough so that it is not over two-thirds filled with the water—this for safety to prevent splashing of the hot solution when the fruit is plunged into the kettle.

When the mixture is boiling, lower the fruit into the boiling solution in a wire basket container or in a thin but firm cloth such as cheese cloth. For smaller quantities of fruit use four tablespoons lye to one gallon of water with a pinch of alum added.

Let the fruit remain two minutes in the hot lye solution, then put it through two cold water baths to thoroughly remove the lye, and in the second bath of cold water rub off with the hands the small pieces of fruit skins that sometimes persist in clinging to the fruit.

MEXICAN TOMATO CROP

Consul W. E. Chapman at Mazatlan thus reports on the only tomato crop which competes with that of California:

"Tomato growers in the state of Sinaloa, Mexico, exported 923 carloads of tomatoes to the United States during the harvest season which began early in January and ended the latter part of May. There was an average of about 825 crates per carload, the crates averaging about 28 pounds each. There was, therefore, an average of about 23,300 pounds of tomatoes per carload, or a total of 21,455,900 pounds of tomatoes exported to the United States during the tomato season just closed.

"The average gross price paid per crate in United States market was $2.62. The costs of production, freight, etc., totaled about $1.83 per crate, giving a net profit per crate of 79 cents to the growers.

"Nearly all of the tomatoes exported from the state of Sinaloa are marketed west of the Mississippi River, and for that reason, as well as the fact that the harvest begins during the first days of January, this crop is not a serious competitor of the Florida product which is sold in the East, but it is quite impossible for Sinaloa producers to export at a profit ten days after the California and Texas crops begin to flow to the markets. When the harvest of these crops begins the Sinaloa producers are forced to cease operations, no matter what quantity and quality of tomatoes they have on hand, as the freight and customs charges are so high and the selling price so low that they could only operate at a loss. The 94 cars of Sinaloa tomatoes marketed in Texas were shipped before the crop in that state matured."

WINTER AVOCADOS

J. T. Whedon, avocado grower of Yorba Linda, speaks of the exceptionally favorable location afforded in the foothills near Yorba Linda for the production of avocados and calls attention particularly to the advantage of growing winter maturing fruits for commercial orchards. He says: "If you are planting a home orchard you should select trees bearing in the four seasons, spring, summer, fall and winter, so as to give you fruit every day in the year. If you are planting a commercial orchard the great majority of your trees should be winter bearing as the winter is when you get your very best prices.

Florida, with her 18 to 20 years experience, has demonstrated that there are practically no markets in the East for avocados in the summer. As a practical illustration a crate holding 48 avocados was shipped to New York in July, netting $1.25; the same size crate shipped in December netted $36.

ARIZONA'S ALFALFA

Hay conditions in Arizona on August 1, according to U. S. bureau of crop estimates, forecast a crop of about 462,000 tons, compared with 381,000 tons in 1920. This year a large acreage of new alfalfa was planted in the Salt River and Yuma Valleys, which has resulted in an increase of about 15 per cent in the state's acreage. Maricopa County reports 75,000 acres; Graham, 11,000; Yuma, 10,000; Pinal, 4,000; Apache, 3,500; Coconino, 3,000; Yavapai, 5,000; Pima, 4,000; Navajo, 2,500; Cochise, 3,000; and Gila, 1,000 acres. For the United States, the forecast is 83 000,000 tons. This compares with 91,000,000 tons last year, and 86,000,000 tons the five year average production.

THE COMING COTTON CROP

The U. S. bureau of crop estimates forecasts for Arizona a crop of about 47,000 bales. Of this amount 35,000 bales will be of the Pima variety of long staple. Last year Arizona produced 83,000 bales of Pima and 20,000 bales of short staple. For the United States the forecast is 8,203,000 bales, a decline of 230,000 bales during the month. Last year's crop totaled 13,400,000 bales.

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One-piece Piston Rings
appeal to thrifty motorists

because: they mean a saving in gasoline and oil; they prevent carbon and all consequent troubles; they prevent loss of power; they lengthen the life of a motor; and they assure a comforting peace of mind and security of pocketbook. Because Gill Piston Rings do all of those things unfailingly month after month through thousands of miles of the most rigorous service they pay for themselves many, many times over and, as a result, are always asked for by thrifty motorists.

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Identify the Gill One-Piece Piston Ring by the joint, but do not measure its merit by the joint *alone*.

Gill Service is nation wide. There are more than 2,500 stocks of Gill Piston Rings in the country. Some one of these dealers is located near you to supply you with whatever size you may want and the number you want *when* you want them. If your garage or repairman or accessory dealer doesn't happen to carry Gill One-piece Piston Rings tell him to get them from his jobber or from the nearest of our 39 Branch Offices.

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Clearing Water in Swimming Pool

On my grove along the hillside in Orange County I have a swimming pool so designed that the irrigation water is used every two weeks to fill same, the wasted water being used to irrigate my orange trees. Moss quickly grows on the surface, and millions of little black appearing bugs, which I understand develop into mosquitos, appear after the water is about seven days old. This practically prevents use of the pool each second week. The pool is exposed to the sunshine at all times. Is there any mechanical or chemical way of preventing these and at the same time not injuring my trees upon which I am compelled to waste the water. If there is no safe chemical method, what do you think of aerating the surface water continuously by means of a miniature fountain operated by very small electric motor and pump, using the same water over and over? I have been advised that copperas will prevent the growths in the water, but it might prove serious to the orange trees. There must be many pools operating under the same conditions here in Southern California whose owners have solved this problem. If so, I would greatly appreciate hearing in regard to them.—Subscriber, Orange.

The best preventive of the forming of algae and purifier of water is copper sulphate. Add at the rate of one ounce of the chemical to 30,000 gallons, or 4,000 cubic feet, of water. If the water is naturally "hard," that is, has high content of carbonate of lime, slightly more of the copper sulphate will be required. The chemical may be introduced to the reservoir by placing in cloth bags and drawing over the surface of the water, which dissolves and secures partial distribution, or it may be dissolved in a small quantity of water and added through perforated pipe at the inlet. If there are already algae formed in the water this will kill them and they will settle to the bottom, but it may require cleaning to secure clean, attractive appearance. Where water contains large quantity of bacteria and is very impure it is sometimes treated with chloride or hypochlorite of lime, powerful germicides, in either case using about one part of the chemical to 7,000 parts of water, or at the rate of about one pound to 33,000 gallons of water. Presumably this treatment will rid the water of all vegetable matter and in doing so put it in condition where you will not be troubled by the bugs.

Canadian Thistle

I have known farmers along the shore of Lake Michigan going bankrupt trying to fight the Canadian thistle with cultivation, knife, hoe, and paying fines into the county treasury. Where you cut one with a knife today tomorrow three to six sprang up in its place. You have to smother them. Alongside our farm there were nine acres of Canada thistles on a side hill. We named it Canada Thistle Hill, fenced it off and turned sheep on it from the middle of May to the first of July. There was no water on the land and they had their drink from the morning dew. During July and August they were taken to pasture where they could get water and the first of September turned back again. The rankest parts of the thistle were salted. The first season we mowed some grass for the sheep and fed them as there was nothing growing but thistles. In the spring when the frost came out of the ground we sowed clover and red top grass over this land. For six years then it was plowed up. No more Canadian thistle there.

Later I was foreman of a large farm more or less infested with Canada thistles. I hooked up eight head of horses with a line and ran them around in a ricle, tramping the life out of them, even 10 to 12 feet on the outside of the infested spots. This I did on all patches of any size on the farm, generally when the ground was moist enough to pack well, twice in the season. The few that came up through the crust we took a club to and thrashed them right and left about the time they started blooming. On land too sandy to pack we made a pair of wooden tongs and pulled them out by the roots after rains when the ground was good and soft—sometimes roots over three feet long. All patches were seeded to clover the following spring when the frost came out of the ground. Large fields were seeded to clover and one crop of hay taken off them, pastured to sheep, salt scattered on the thistles. On those around buildings, fence corners, sidewalks, rock piles, rocky and brush land we used the club and scattered salt on them. Bear in mind that salt will kill soil also, but eventually it will come back. We had one patch near the barnyard on which we poured all the brine from a pork barrel. It cleaned them out also. In the three years' time I worked on that farm we cleaned out nearly all Canada thistles.—N. M. Beecher, Fair Oaks.

Almond Hulls on Soil

Will you kindly tell me whether quantities of almond hulls will injure or benefit when put onto the soil of an orchard?—Subscriber, Durham.

We can see only benefit in making application of these hulls. Of course there might be a situation such as exceptionally light sandy soil into which the hulls might be plowed and then if not sufficiently irrigated an open porous condition might result in loss of moisture. But this condition is hardly probable. The hulls might not become thoroughly decayed as quickly as a green manure but in a heavy or even ordinary loam soil they should prove beneficial. We believe every opportunity should be taken to apply vegetable matter or humus forming material.

Pruning Blackberries

I am pruning blackberries now. Is it too early? How many years do vines last? My vines are very strong and I am cutting canes to a length of four to five feet; also laterals I headed back. How many canes should be left to a plant?—D. G., Anaheim.

Pruning blackberries is a matter of secondary importance. All sorts of prunings are indulged in and success attained. Crops depend on care given. Trellised berries are usually kept at four or five canes to a plant, four feet long, laterals to one foot. In small lots it is best to pinch all growths off when soft, at proper length, the first year; also every year as far as possible. No use growing wood to cut away. Never prune any deciduous tree or plant while green leaves remain, for they are manufacturing food for next year's crop. Wait until leaves are yellow. Always prune off old canes, for crop is grown on new canes.

Budding Avocados

I have two avocado trees, seedlings, that were budded last spring and buds did not grow. Would like to get someone to bud them again. Please advise me. Do you bud same as in orange trees?—Subscriber, Anaheim.

Avocados are budded in same manner as orange trees. It is yet too early for re-budding. Autumn budding is best and allows buds to lie dormant until spring. Apply to Farm Adviser Wahlberg, Santa Ana, for name of someone who will bud your trees.

Propagating Ornamentals

How early this fall can I root rose cuttings? Please give best method. How can I propagate crepe myrtle? Sowing seeds failed. What is the cause of sunflower leaves turning black in spots?—Subscriber, Corning.

Time is largely dependent upon condition and ofttimes the latter upon climate. The more nearly dormant the wood is the better the per cent of rooting. Do not water rose bushes now. Let them rest. Usually early in November or immediately after first heavy rain (before sap starts) take cuttings from leafless canes about size of lead pencil—not much smaller or much larger. With sharp knife cut to four or five eyes. Place cutting with at least two eyes below top of soil. A box of sharp sand is best but well drained sandy loam without decaying vegetable matter will do. Keep well watered, but not soggy, and keep from sun and wind. Best cover sides and top with cheese cloth or burlap. Leave cuttings that grow until next autmun (one year); dry them off by not watering and plant in permanent place when dormant or nearly so. Crepe myrtle may be propagated in same manner and at same time—when tree is dormant. Spots in sunflower leaves are caused by a fungus. After attack no treatment will stop it, but it seldom is sufficiently serious to be injurious.

Dogs Kill Chickens

I have broken three dogs from killing chickens by taking the chicken which the dog has killed and bringing the feet up over the dogs neck and tying them together. The dog will eat it at first, after the first day he will have enough of the chicken and try to get it off, but let the bones hang on his neck for several days. Only once did I have to put a second chicken on a dog.—E. E. R., Watsonville.

Grape Erinose

I am sending under separate cover some leaves from an infested grape vine. What is the cause and what the remedy?

The grape leaves are afflicted with a very minute mite known as erinose. This mite confines its work to the under surface of the leaves and its activities are responsible for the whitish felt like patches so noticeable on the specimens submitted. Control of the mite is usually easy. A simple application of sulphur such as is used to control mildew is effective, in fact where plenty of sulphur has been used for mildew erinose gives little if any trouble.—F. K. H.

Irrigate 'Cots

Should Moorpark apricot trees be irrigated as soon as the fruit is picked? Would it hurt the trees to delay irrigation until the middle of September? We have had two poor crops. What is necessary to insure good crops?—Subscriber, San Jose.

Many growers follow the practice of pruning soon after the crop is removed, then irrigating very heavily following the cultivation. This induces new growth and heavy setting of fruit producing buds. Then, depending upon the soil and sub-soil conditions, irrigating later if necessary. Bear in mind that in order to secure good plump fruit producing buds sufficient moisture in fall as tree approaches dormant period is essential. Many orchardists make the mistake of assuming that once the crop is off there is no further need of giving attention to tree or soil. This belief is the cause of much barrenness. However, with Moorpark it must be borne in mind that it is often a shy bearer.

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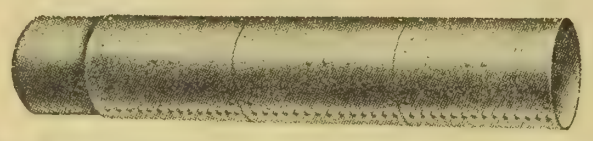

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Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.
Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Damages for Son's Death

My son was killed through the negligence of officers of a tank steamer owned by oil company, upon which he was an engineer. Can I maintain an action, even though the death occurred in Mexican waters?—Subscriber, Watsonville.

Probably an action could be maintained in the courts of Mexico, and it may be possible that an action could be maintained against the vessel itself in the home port of the vessel in the United States. If such action is maintained it would probably be a libel in admiralty.

Waste Irrigation Water

Three ranches lie between an irrigation ditch and a natural wash. The upper ranches discharge waste water into a road gutter bordering a third ranch. This water should run off into a wash, but it chokes up the gutter with silt. Who should be required to keep this gutter open along the ranch of the lower proprietor?—Subscriber, Orange.

Assuming that the lower road gutter of the lower proprietor is an easement over the lands of the lower proprietor, he would have the right to require the upper proprietors to refrain from accumulating silt upon his lands. This would, of course, require the upper proprietors to convey away the silt. If the gutter lies on an open road the lower proprietor could make application to the road supervisor and it would be the duty of such supervisor to require the obstruction to be removed by those who have caused it. In either event it would appear that the upper proprietors are required to keep open the gutter.

Change in Water System

By reason of a change in the water system of a mutual water company I was cut off from my former supply. The water company proposed that I buy a new meter and accept a one inch connection in place of the former two inch connection, which I agreed to do. They billed me for the meter and also the connection. Am I required to pay it?—Subscriber, Escondido.

It would seem that as the company cut off the water themselves and as you formerly had a meter there, which they rendered useless, it would be the duty of the company to supply you with not only the cost of the new connection but also the new meter required. However, if you agreed to pay for this new meter and connection it might be that you would be required so to do.

Federal Farm Loan

Can I borrow money from a farm loan bank on a citrus grove?—Subscriber, Oakland.

Under the operation of the federal loan act money is borrowed from and through the local farm loan association and not directly from the central bank. Money may be borrowed on the security of the citrus grove as well as on any other lands.

Damage from Overflow

Does a neighbor have a right to flood my place with overflow irrigation water? If he does so, is he liable for damages done to my crops and land? My land does not lie in a wash or natural drainage but is merely lower than the neighbor's land.—Subscriber, Ontario.

A case very similar to this has been directly passed upon by the supreme court, in which it was held that each land owner must so use his own land as to not cause injury to the land of his neighbor. One cannot bring water upon his land, accumulate such water thereon, and permit it to overflow upon the land of his neighbor, even though such land does constitute a natural water course. The easement of such natural water course is for the conveyance of water naturally coming upon the upper land and not water artificially produced there. Where one brings a foreign substance on his land he must take care of it and not permit it to cause injury to his neighbor's land. If he does so he may be enjoined from permitting it to overflow and also be held liable for damages that may be caused either to crops or land.

Line Fence

When a line fence is without agreement placed on the line can the party erecting the fence claim all right thereto? Can the other party place wire on his side of the posts?—Subscriber, Compton.

If a fence is erected upon the line or at least recognized as being on the line, it belongs to each of the parties as tenants in common. Either party may repair it and may lawfully enter on the land of the other for that purpose. Under the ruling concerning repairs undoubtedly either party would be entitled to place wire upon his side of the posts, as that would probably aid in making the fence more efficient.

FOREST SERVICE EMPLOYES ASKED TO GIVE UP SMOKING

Realizing the danger of forest fires from burning tobacco, even when used in the woods by the most careful persons, District Forester Redington has called upon the field men of the national forests of the California district to refrain voluntarily from smoking during the next few months of extreme fire danger.

At present the fire situation is very critical. Precipitation has been very low. This, with the prevalence of hot, dry winds and the opening of the deer hunting season within the next few days in several of the coast counties, increases the fire hazard considerably. However, the forest officers are hoping that the great number of users of the national forests will be more careful this year than ever before and that the percentage of man-caused fires may be greatly reduced from the high figure that it has held for the past several years.

A HUBAM ASSOCIATION

Down in Alabama they have an association devoted to the encouragement of Hubam clover culture. They use as their slogan, "The plant originated here." With the aid of the farm bureau Alabama folks recently met in a great picnic and convention in order to discuss Hubam and the disposal of seed. It was stated at the meeting that some farmers had grown Hubam and sold the seed "until their land returns them from $600 to $1,000 per acre."

While Alabama usually has very good rains throughout the growing season, an unusual drouth has prevailed this year. But in spite of this fact in many fields the clover stood from six to seven feet in height at the time of the demonstration. Some of the earliest planted had already been cut and threshed, though the bulk of the acreage was just ready for cutting and in fact was in the best condition for observation and study. The fields which have been cut and threshed have made yields of from five to seven bushels per acre, while many of the best fields are expected to yield at least ten bushels of clean hulled seed per acre.

Since the seed of this clover, when ripe, shatters very easily, the grain binders and corn binders used to harvest the crop have been equipped with pans and canvas aprons to catch the shattered seed.

While 1½ pounds of seed per acre was used in making most of the seedings this year, the growers are convinced that from three to four pounds per acre planted in rows from 30 to 36 inches apart will prove most profitable.

PRETTY MUCH THE SAME

"I'm sorry to see you here," said the friend of a convicted bank embezzler.

"Oh, there isn't much change, after all," said the prisoner, cheerfully.

"No?"

"You see, I had been shut up in a cage and looking through the bars for years before I came here. These bars are just a little thicker, and instead of being brass they are steel."

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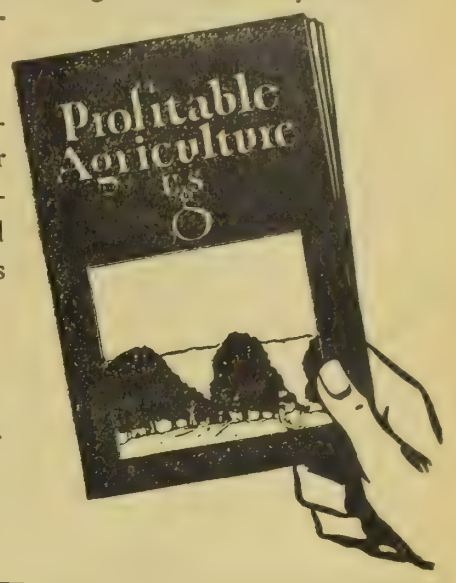

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The Cultivator Patterns

3630. Boy's Suit.—Cut in 4 sizes: 2, 3, 4 and 5 years. A 4 year size requires 3½ yards of material 27 inches wide. Price 10 cents.

3649. Misses' Dress.—Cut in 3 sizes: 16, 18 and 20 years. An 18 year size requires 4¼ yards of 44 inch material. The width of the skirt at the foot is about 2½ yards. Price 10 cents.

3159. Girl's Dress.—Cut in 4 sizes: 2, 4, 6 and 8 years. For a 6 year size 3½ yards of 27 inch material will be required. Price 10 cents.

3633. Ladies' Apron Dress.—Cut in 4 sizes: Small, 34-36; Medium, 38-40; Large, 42-44, and Extra Large, 46-48 inches bust measure. A Medium size will require 5¼ yards of 36 inch material. To make the small apron illustrated will require 1½ yards. The width of the skirt at the foot is about 2 yards. Price 10 cents.

3645. Child's Dress.—Cut in 4 sizes: 2, 4, 6 and 8 years. A 4 year size requires 2 yards of 36 inch material. Price 10 cents.

3638-3417. A Stylish Gown for Stout Figures.—Waist 3638 cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Skirt 3417 cut in 7 sizes: 24, 26, 28, 30, 32, 34 and 36 inches waist measure. The width of the skirt at the foot is about 54 inches. To make the dress for a 40 inch size will require 5¾ yards of figured and 2¼ yards of plain material 27 inches wide. TWO separate patterns, 10 cents FOR EACH pattern.

3644. Girl's Dress.—Cut in 4 sizes: 8, 10, 12 and 14 years. A 12 year size requires 5¼ yards of 27 inch material. Price 10 cents.

3636. Ladies' Work Dress.—Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size will require 6½ yards of 36 inch material. The width of the skirt at the foot is about 2¼ yards. Price 10 cents.

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Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cents) stamps for each number. In order to furnish our readers with the very best NEW YORK styles, all patterns ordered are filled in NEW YORK. Therefore, we promise to deliver all patterns ordered within TWO WEEKS: we guarantee safe delivery of all patterns.

CATALOGUE NOTICE

Send 15c in silver or stamps for our Up To Date Fall and Winter 1921 Catalogue, containing over 500 designs of Ladies', Misses' and Children's Patterns, a concise and comprehensive article on dressmaking, also some points for the needle (illustrating 30 of the various simple stitches) all valuable to the home dressmaker.

PATTERN DEPARTMENT
California Cultivator
Los Angeles

Household Department

A WASHDAY LYRIC

I sing the song of a day in spring,
When the rainbow suds foam high,
When round the shed the swallows sing
And the vine's new tendrils creep and cling,
And a gay breeze gambols by;
My thought is swift as the swallow's wing,
And work is pleasure, for love is king,
And I rub and sozzle and rinse and wring,
And the wind is right to dry.

There's a crown of gold on the mountain's crest
And a dream of blue in the sky,
The knoll is green in its summer vest,
And the wind blows free from the boundless west,
While the great sun shines on high.
The wood bird sings to his fairy nest,
And I join his song as I work with zest,
For my clothes are white as his snowy breast,
And the wind is right to dry.

The day is perfect for wind and sun;
And who is so blythe as I?
For the tree is white where the clothes lines run,
Its blossoms are falling, one by one,
Like stars in the grass they lie.
The housewife's week is well begun,
The world is brighter for duty done,
And rest is sweeter when hardly won,
And the wind is right to dry.
—Claribel W. Avery in Farmer's Wife.

HINTS FROM HOUSEKEEPERS

Date Salad

One-half pound (or more) dates. Pour boiling water over them and stir while coming to boiling point. Dry in oven or on towel, stone and cut each date into five or six pieces. Boil ½ cup sugar and ½ cup boiling water. Add juice of 1 lemon and 1 tablespoon gelatine that has been soaked in ¼ cup of cold water. Cool and add dates and three sliced bananas or other fruit. Put in molds and when set serve on lettuce leaves with a spoonful of salad dressing. The best of all dates is the dry, or usually so-called Bread, date grown in the Coachella Valley. The boiling in water results in a delicious moist date.—Mrs. S. V. C.

Canning Quinces

To can quinces, pare and cut into desired pieces. Put into a fireless cooker utensil, add enough water so you can just see it, also the desired amount of sugar and place in the cooker for an hour or longer. Reheat and can. The fruit is well colored and penetrated with the syrup. This is a shorter operation than the usual one and far superior.—E. S. C.

Canning String Beans

In the Cultivator of July 23 I see subscriber from McFarland asks for recipe for canning string beans. I am sending my recipe which I think is far superior to any way I have read of and less work. Beans canned this way will keep well and are just as green and fresh as the ones just out of the garden. No need of any acid or brine nor do you have to blanch them. You may also can peas this way but they should be boiled three hours for three days in succession.

We have been a subscriber to the Cultivator for three years and find many useful things. Pick the beans when ready and string and wash well, cut in pieces and pack in jars as tightly as you can and then place in cooker or boiler and fill the jars with just clear cold water (do not put any salt or brine in), let come to boil and exhaust about 40 minutes; then tighten lids on jars and boil until they have cooked two hours. Leave until next day and cook two hours longer and they are ready to put away when cool. I always have boiling water to fill jars before sealing and always tighten lids when I take them out. — Mrs. Geo. S. Hewett, Corning.

* * *

Seeing an inquiry as to how to can string beans, I submit the following:

Prepare as for immediate use fresh string beans. Put on to cook in enough hot water to cover and cook one-half hour. Can hot. I use Mason jars and do not screw caps on tight. I use no salt nor acid.

Have a boiler with false bottom in it and enough water the temperature of the jars on the stove and as jars are filled put them in it. When boiler is full put on tight lid and boil one hour. Remove from boiler while hot, screw caps on tight and set aside to cool.—Subscriber, Gardena.

Dried Figs

Answering inquiry for drying figs a short time ago:

Make a syrup of 1 pound sugar and 1 pint water. Wash fresh ripe figs and put them in the hot syrup. As figs are added they will make juice enough to fill kettle. Let cook one-half hour. Take off stove and let stand in syrup until next day, when boil one-half hour again. Let cool again and boil one-half hour the third day. When cool press out as much juice as possible and put in dryer. Will dry in two or three days in hot weather. I use the same syrup several times. If it gets thin I add another cup of sugar. Most figs do not need much sugar.—Subscriber, Gardena.

HOUSEHOLD QUERIES

Bronzing Powder

Would someone please tell me how to paint the cattails and eucalyptus leaves in different colors.—Subscriber, Dodgeland.

Bronzing powder in many different shades of gold, silver, bronze, pink, blue, etc., may be purchased from any art store with directions for applying. If subscriber cannot find this in her own neighborhood and wishes addresses of firms from whom it may be purchased we will be glad to send them to her on request.

Canned Pears Ferment

Before I start canning pears I wish you would let me know through your columns what is the trouble with my canned pears. About a week after they are put up their juice turns like milk color and the pears turns dark and afterwards ferment. But some do not ferment at all but are unfit to eat. I have the same trouble every year with some jars. I pour the cooked fruit boiling hot in the jars and seal immediately after filling. I have success with the other fruits put up in the same manner.—Subscriber, Santa Maria.

The milky appearance of the pear juice is probably due to the commencement of fermentation. Pears contain less acid than do peaches and most other fruits, so that it is necessary to use more sugar to assure preservation when canning. Still, pears are very easy fruits to keep and we are inclined to lay the blame for the difficulty to the jars, caps, or rubbers used. Sometimes the jar caps are a trifle bent and one does not notice it and these slight indentations let in the air and spoil good fruit and sugar. If the "zinc" tops are used it sometimes happens that there has been a slight corrosion or a slight deposit of metal on the screw part and this roughness also permits entry of air. The safest thing to do is to throw away old tops and purchase new, making sure that the new ones are perfect. Of course new rubbers should be used each year and they must be good ones. Some rubbers offered are so thin and uneven that they are absolutely worthless. Another precaution: No matter how clean the jars may have been when they were put away, it is necessary to give them a thorough scrubbing with hot water, strong soap powder and a good stiff scrubbing brush, paying especial attention to the neck of the jars outside and in.

Lemon Cucumber Pickles

I would like a recipe for lemon cucumbers pickled green, both sour and sweet, if space permits.—Subscriber, Santa Maria.

We hope the subscriber has saved her Cultivators of July 2 and 9. On page 11 of the issue of July 2 she will find the best recipe we have ever found for making crisp cucumber pickles. This is even better for the lemon variety than the ordinary cucumbers (merely because the lemon cucumbers suit our taste better). On page 37 of the issue of July 9 is a good recipe for sweet pickles. The lemon cucumbers are much better if they are picked while still green before they show yellow color. If they can be picked in the morning and pickled immediately while they are fresh and crisp they will be many times better than if allowed to stand a day or two. If it is not possible to put them immediately into the pickle jars from the vines they may be freshened by standing for a short time in cold water. In washing take care not to rub off the tiny spines or bruise the skin in the slightest. It is best to let the water merely run over the cucumbers with considerable force. A bruising of the skin is apt to leave soft spots in the pickles.

Canning Corn—Corn Salad

Have you a recipe for corn salad, the kind you can for winter, also a recipe for canning corn?—A Cultivator Reader.

General directions for canning fruits and vegetables will be found on page 77 of the Cultivator of July 23, and time tables giving exact time for boiling on page 125 of the issue of August 6. In preparing the corn use sweet corn gathered fresh from the field, husk and silk, blanch in boiling water for 10 minutes, chill by plunging in cold water, cut corn from cob, taking care not to cut so close that you get some of the cob; scrape out remainder of corn from cob; proceed with canning according to directions in Cultivator referred to. If subscriber has not preserved these issues we will be glad to send them on request.

We do not quite understand the question about corn salad. Does subscriber mean the lettuce like plant which is sometimes called corn salad? If so this may be canned in the same way as spinach, directions for which will be found in issues above referred to. If by corn salad she means a sort of corn relish, here is a good one: 12 ears corn, 1 cabbage, 3 sweet red peppers, 3 sweet green peppers, 1 quart vinegar, 1 cup sugar, 2 tablespoons mustard, 1 tablespoon salt, 1 tablespoon celery salt. Prepare corn as for canning above, add other ingredients and cook 20 minutes. Pack into sterilized jars and proceed with canning as directed above.

Cucumber Pickles

Please publish in your household column recipe for pickling cucumbers. —Subscriber, Llanada.

See answer to Subscriber, Santa Maria, given on this page.

Dill Pickles

I see you publish different recipes in your paper from time to time and see some call for certain recipes. Do you do this free of charge for the benefit of your readers? If so, I would like to have the recipe for dill pickles. I used to have one but don't just remember the proportion.—Subscriber, Pomona.

Yes, we are glad to print recipes called for by our readers, as it is the purpose of this department to give practical help wherever possible. If this subscriber has saved her Cultivator of July 9 she will find on page 42 very careful directions for making dill pickles.

Cucumber Pickles in Brine

I would like to know through your household queries whether cucumber pickles will keep put down in brine here in California.—Subscriber, Arlington.

Yes, it is the usual custom to keep pickles in brine, then freshen and add vinegar a short time before they are to be used Place fresh cucumbers in brine made in proportion of 1¾ pounds salt to 1 gallon water. Leave in this brine for 2 weeks, pour off and replace with stronger brine made in proportion of 2½ pounds salt per gallon of water. Cucumbers may be held in this until needed for final pickling. Fermentation takes place during storage, the green color fades to an olive green, the acrid flavor disappears, lactic acid is formed from the sugar, and the texture and flavor improve. The cucumbers must be kept submerged in the brine. This can be done with a wooden float. Should softening set in more salt must be added. After fermentation the barrel is closed and stored until needed for use. After fermentation has ended the head of the barrel or crock may be sealed with paraffin. The salt must

be removed by soaking in cold water or by heating in several changes of water to about 120 to 150 degrees Fahrenheit. A teaspoon of alum per gallon of hot water used will make cucumbers more crisp. Several hours' heating are usually necessary to remove the salt. Good cider vinegar should be used. If the salt has been removed by soaking in cold water the vinegar is added to the pickles boiling hot; if it has been removed by heating in water to 120 to 150 degrees Fahrenheit the vinegar is added cold.

Cucumber Pickles

We enjoy your recipes very much and I would like a cucumber pickle recipe not requiring any oil or horseradish roots, so that I can gather cucumbers from my few vines and put in brine (how heavy?) daily until I have enough to pickle, then how to proceed.—Subscriber, Ramona.

See answer to similar query in this department. Cucumber pickles made by this simple recipe can be packed in jars as you pick them, the whole process finished, the jars sealed and put away until you use them. If you prefer the old time brine method you will find directions for treating in this way under "Cucumber Pickles in Brine," in this department.

Crabapple Recipes Wanted

Will someone send in crabapple recipes (other than jelly) worthy of a place in Bergtholdt's book?—Watsonville Subscriber.

Cactus Fruit

Can anyone tell me use for spineless cactus fruit? Have bushels going to waste every year.—Subscriber, Bonsall.

"Romance of the Counties"—"Nearer Home"

Will you please let me know if there is any book known as "The Romance of the Counties of California"? Also, I would like to have a poem written by the Cary sisters, known as "I Am Nearer My Home Today."—Subscriber, Gustine.

We do not find any book under the title of "Romance of the Counties of California," but we do find one by John Habberton, published in 1880 under the title of "Romance of California Life." This is made up of stories of the old days in California, Nevada and other Western states. It was published by Baker, Pratt & Co., New York.

NEARER HOME

By Phoebe Cary

One sweetly solemn thought
Comes to me o'er and o'er.
I am nearer my home today
Than I've ever been before,

Nearer my Father's house
Where the many mansions be,
Nearer the Great White Throne,
Nearer the jasper sea,

Nearer the bound of life
Where we lay our burdens down,
Nearer leaving the cross,
Nearer gaining the crown.

But lying darkly between,
Winding down through the night,
Is the dim and unknown stream
That leads at last to the light.

Closer and closer my steps
Come to the dark abysm,
Closer death to my lips
Presses the awful chrysm.

Father, perfect my trust,
Strengthen the might of my faith,
Let me feel as I would when I stand
On the rock of the shore of death,

Feel as I would when my feet
Are slipping o'er the brink
For it may be I am nearer home,
Nearer now than I think.

Southern Recipes

Will some of the cooks who know the old Southern ways of cooking chicken tell us how to prepare them. Also ways of serving green corn.—Mrs. G. H. B.

THE WOMEN KNOW HOW

That the San Fernando Valley Fair, September 13 to 18, will be a great success can no longer be questioned, for the women of the valley are back of it in the most thoroughly organized department of the fair. I walked into their meeting at Burbank last week and found 150 members of the ten valley clubs in executive session. And for thorough organization and businesslike handling of their share of the work of building a successful fair the meeting was far ahead of any man's meeting I have attended. Chairmen of each department for each of the valley towns had some definite accomplishment to report in the culinary, needlework, art, and plant and flower classes.

Mrs. Harry Huston, the manager of the women's department of the fair, called for entries for the baby show. Fifty entries have already been made from the town of San Fernando alone and the women from the other towns say: "50 isn't many; wait till you see our list and wait till you see our babies."

Hamilton Horse Bassett with his horse show, R. M. O'Neil with his tractor demonstration, and all the rest of the men's departments will have to hustle to keep pace with those women. —Wm. M. Geddes.

MORE GOOD COOKY RECIPES

(Continued from last week.)

Mrs. M. Tuelling, San Joaquin

Two cups sugar, 1 cup shortening, 1 cup milk, 3 or 4 eggs, 2 teaspoons baking powder. Beat yolks and whites separately, stir up as for a cake. Beat sugar and shortening to a cream, then add beaten yolks, then a little milk and a little flour and so on till the milk is all used, then add beaten whites and finish adding the flour. Do not make the dough too stiff as that makes the cookies solid and hard. Cut out as soft as you can handle the dough. Roll out, sprinkle with granulated sugar. Roll sugar in dough. This improves them very much.

Mrs. A. Semler, Sebastopol

One cup butter, 1 cup sugar, 3 eggs, 3 cups flour. Cream butter, sugar and yolks of eggs, add flour and whites of eggs beaten stiff. Roll out thin and cut with cooky cutter. Moisten top with beaten egg (can dilute with little milk or water) and sprinkle with sugar and finely chopped almonds. Bake in moderate oven.

Marie V. Peres, Yountville

Plain Cookies.—Two cups sugar, 4 cups flour, 1 cup butter, 1 teaspoon vanilla, ¾ cup milk, 2 teaspoons baking powder, 2 eggs. Cream butter and sugar, add eggs and flavoring, mix baking powder with one-half flour, alternate with milk, then add remainder of flour. Turn out on floured board. Roll thin, cut, brush with milk and bake quickly.

Mrs. G. H. Brown, Loomis

I am sending a few old time tried and true cooky recipes. I find many good ideas and helps in household department.

Ingredients for cookies need not be creamed as for cake nor need eggs be separately beaten: Two eggs, 3 cups sugar, ½ cup butter, 1 cup sour cream, ½ teaspoon soda, 1 teaspoon baking powder. Flour to roll. Roll thin, use cutter, moderate oven.

Another.—One cup shortening, ½ cup water, 2 cups sugar, 2 eggs. Flour to roll thin. Add to flour 2 teaspoons baking powder. Place in pan so cookies do not touch.

Mrs. A. R. Arnold, Tracy

White Sugar Cookies.—One cup butter, 1½ cups sugar, 1 cup sour milk, 1 teaspoon soda, pinch salt, flavor to taste. Mix into stiff dough, roll thin, cut and bake in quick oven.

H. J. Kitchner, Los Angeles

Grandma's Cookies: 1¼ cups light brown sugar, ½ cup lard (or substitute), 3 eggs, 2 tablespoons cold water, 1 scant teaspoon soda dissolved in water, ½ teaspoon baking powder, nutmeg to flavor, flour to make soft dough to roll. This recipe has been in our family for many years. We think they are fine.

DELICIOUS AND REFRESHING
A HOT day is just one of the incidents of life that recalls the legend: "Drink Coca-Cola, Delicious and Refreshing."
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"La Fortuna" Pearls are guaranteed to be of highest quality, genuine Mother-of-Pearl Oriental Indestructible Pearls. These singularly beautiful spheres are cut from the solid Mother-of-Pearl shell and are absolutely indestructible. Every woman desires a real pearl necklace, especially these days when pearls are indicated as the last perfect finishing touch of the well-dressed woman. Owing to our direct importing system we are able to offer these exquisite necklaces at the truly remarkable prices quoted.
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Use the OTTAWA Pressure Cooker and Canner and prove to your own satisfaction that cheaper meats and foods taste as tender and delicious as expensive cuts cooked the usual way. Cook a whole meal at once—meats beans, vegetables, desserts. Does away with heat and cooking odors. Write at once for FREE BOOK and Special 10-Day Trial Offer. Fine for Canning.
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IN CANADA the governments and railroads help the farmer in every possible way. It is to their interest to do so. Land prices and taxes are low. Laws are just. Transportation facilities and markets excellent. Language, social conditions, religion, money and other conditions are the same in Canada as in the United States.
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More than ½ the tractors on the Pacific Coast use
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The Standard Oil ZEROLENE For Motor Cars
A grade for each type of engine

Cost of Inspection to the Dairyman

By G. A. Pfaffman

OF late many individuals and investigating bodies have been dealing with problems pertaining to the milk and dairy interests, in which the question of the cost of operating under the present state dairy law has been a weighty and beclouding factor. Certain dairymen complain of the costly hardship imposed on them by this law. In order to arrive at a clearer solution of this vexatious question the writer has been attempting to conduct an impartial investigation and has arrived at the following results:

The essential requirements of the present law are: The dairyman is compelled to have a milk house in which to store and properly handle his milk. Milk must be cooled to a satisfactory temperature. Milking should be done in a suitable, clean, well drained stable. All utensils are to be thoroughly washed and sterilized. Other requirements that are mostly minor, such as regular cleaning of the barnyard, and the proper arrangement of toilets, chicken coops, hog pens, etc., generally with special regard to distance. These arrangements can be made with little or no expense. Very often no changes are necessary so that in the main these latter requirements need hardly be taken into consideration in relation to cost. The problem would, therefore, seemingly resolve itself into a consideration of the costs of a milk house, washing, sterilization, cooling and stabling. A close study shows that every one of the items, excepting the few minor ones mentioned, are absolutely essential to producing market milk upon a profitable basis, irrespective of the state law.

A milk house is a wonderful, economic feature, far better than handling the milk in one's home or out of the way places, a great convenience in every respect. No dairyman, law or no law, would be without one, once he becomes acquainted with its advantages. In cooling and sterilization the owner saves himself hundreds of dollars a year, far more than the cost, in having no loss from sour and returned milk and being very rarely troubled with complaints from the public as in years past when even the best dairyman in hot weather had considerable trouble before he knew of the science of sanitation and bacterial counts. With reference to the other items of expense, the clean milking shed, rather than a dirty corral, is in itself a profitable appliance. The cows will give more milk, the loss from milk being spilled in the corrals from unruly cows is overcome, and, added to these, is also a cleaner, low bacterial count milk. In other words, a milking shed, which is often cheap to construct, can be classed as an asset. In fact, the milk house, cooling devices and sheds are all assets, and by installing these the owner increases the value of his dairy. So, considering that all the provisions of the dairy law tend to produce better milk, how can there be a legitimate charge made against the dairy laws' operation?

In the case of raw milk, which includes all the above phases, plus the tuberculin testing of cows, we can find a charge which is traceable to the operation of the state dairy law. The charge in this respect can be safely computed upon the following basis: State wide reactors in 1920 were eight per cent. On a basis of 23 cows to a string, an ordinary dairy, we would say there were ten per cent, or two cows, thrown out of the herd. The average cow costing in the neighborhood of $150 would make this $300, and as the animals can usually be disposed of for about half their value, the loss would be then about $150. If the cost of milk production per quart, we will say, between eight and ten cents, or, say, ten cents, and each cow will, on a low average produce eight quarts daily, or 63,560 yearly, for the entire dairy, we find that the yearly cost of the milk would be $6,356, of which $150 would represent a cost of $.0024 per quart, chargeable to the tuberculin testing, as calculated on a state wide basis.

In this connection it may be stated that this can often be considerably reduced if the dairyman is careful and carries out the instructions of the department. For instance, in the city of Long Beach after several years' work the percentage of reactors in 26 herds has been reduced to three per cent and, according to investigation of the state inspector, could have been reduced to one per cent if the owners had complied with the instructions that all animals introduced into the herds between tests must be tested by qualified veterinarians. The above figures do not apply, however, to dealers and speculators in tubercular cattle nor the so-called chance taker, but to the real, honest, well meaning dairyman.

Against this cost of .0024 of a cent a quart for tuberculin testing the owner finds in it a great advantage, as he can use this as a selling point, often netting him two to three cents more a quart. In other words, it is a great monetary advantage, plus also the advantage of having a healthy herd which will aid in giving an increased yield, as well as increasing public confidence and consumption of dairy products.

Considering all the above phases of the dairy law, we find that a strange coincidence has arisen in that a law framed originally to protect the public health has developed into the greatest boon the dairy industry has ever experienced. It may in a sense have been the salvation of the dairy interests. The law not only helped the dairyman solve his own private problem but increased the public confidence, which in the future, when the work becomes more standardized, will work even more to the dairyman's interest. Is it strange that certain associations in dairy countries like New Zealand and Denmark employ their own inspectors and frame rigid rules of their own? Verily it looks as though the California dairyman is getting something for nothing, and it is not surprising that large, high class dairies are employing men acquainted with dairy inspection as superintendents and as business counselors.

As a final summary we must admit that the account of the dairyman to the state dairy law must be placed in the red; in other words, the dairyman, strange as it may have seemed at first glance, is debtor to the law. The wise dairyman realizes this and his attitude is changing. Many of them who professed that they would never change their methods, law or no law, not only welcome the inspectors now, but seek them.

NORTH BAY COUNTIES FAIR

The district across the bay north of San Francisco has joined hands with the Sonoma County Fair Association in promoting this year's fair at Santa Rosa. J. Francis O'Connor, the well known Berkshire breeder, is president of the association, and this assures the livestock men every possible convenience as Mr. O'Connor sees the fair from the exhibitors' point of view.

The new fair grounds at Cotati are adjoining an unloading platform on the main line of railway so there is no cartage nor driving. Straw for bedding is furnished free. The exhibitors' and grooms' tickets admit to all the free shows, horse, motor cycle and auto races.

The fair will be held inside the new speedway on which Eddie Hearne has just broken the world's record for 150 miles, and a large attendance is assured.

The north bay region is a natural stock country. In many portions pasture is green the year around and, though one of the smallest counties of the state, Sonoma County ranks fifth in yield of dairy products.

Pure breds are not numerous in this district and it is a virgin territory for breeders. All exhibitors at last year's fair made sales both at the show and since.

Breeders should not hesitate to take in this fair. It will help them in building up their project and will help you to condition your show animals for the state fair under show conditions. The Santa Rosa show is from August 24 to 28. L. L. Putnam is the secretary and you will receive excellent treatment from all concerned.

1921 GUERNSEY SALES

The average price paid for 1,192 Guernseys sold in 24 sales since late in March is $335.70. The average prices for previous years are: 1915, $262.76; 1918, $330; 1919, $546; 1920, $508. There has been a slight drop in the average price as compared with the previous two years, but an analysis of the facts reveals that there has been no drop in the appreciation of the breed. According to the bureau of labor statistics, in May, 1920 all commodities were 172 per cent higher than the average for 1913. In May, 1921, all commodities were 151 per cent higher than during the year 1913. In other words, in 1920 the dollar had a lower purchasing value than during the pre-war period or during the present time. It is but reasonable to conclude that the drop in the price of Guernseys is largely the result of the returning value of the dollar.

Another factor of great importance is the age of the Guernseys which have been consigned. Breeders have found it more suitable to consign young stock than ever before. An analysis of the consignments in 15 sales held in various parts of the country reveals that 24.8 per cent of the consignments were under one year of age; 17.4 per cent were one year and under 18 months; and 9.3 per cent were over 18 months and under two years. Only 37.6 per cent of the consignments were three years or over. Assuming that no Guernsey females under 18 months of age had been bred, 42.2 per cent of the animals consigned would be unbred females. Over 50 per cent of the consignments were under two years of age.

Taking all these facts into consideration the average price received for Guernseys in 1921 sales is but little, if any, lower than the average prices received in the years 1919 and 1920.

BEMMERLY HEREFORD SALE

On Wednesday, October 19, W. J. Bemmerly's herd of registered Herefords will be auctioned on the Bemmerly ranch near Woodland, Yolo County. There is probably no other herd of Herefords in the entire West so widely known to the cattlemen as this same Bemmerly herd. Its influence in the development of the Pacific Coast and Hawaiian Island beef industry has been considerable. Mr. Bemmerly has been a figure in the Western cattle world for a generation. His ability as a breeder and his integrity as a man have endeared him to his host of friends, who will regret as much as he the dispersal of a herd of Herefords it has taken a lifetime to develop.

Get rid of the unprofitable cows in the dairy. The milk scales and Babcock test will point them out.

The most profitable gains are made by the young pigs. It pays to give them a chance to get to market early.

SENSATIONAL DISPERSAL

Bemmerly Registered Hereford Herd

On the Ranch, 10 Miles Northwest of WOODLAND

11 A.M., Wednesday, Oct. 19, 1921

Foundation Hereford Opportunity of Decade

Further Particulars and Catalog, Write

W. J. BEMMERLY, Woodland, Cal. Or 222 Sharon Bld., San Francisco, Cal.

A New Fashioned "Old County Fair"

Agriculture
Horticulture
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Industrial School Exhibits
Domestic Science and Art
Baby Show
Livestock Show
Cat Show
Poultry
Tractors
Automobiles
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Trailers
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Tractor Demonstration
"$1,000 a Night Horse Show"

At San Fernando, Cal., September 19th to 24th, Inclusive

"$1,000-A-NIGHT-HORSE-SHOW"

A Style Show of 116 Famous Horses of the Pacific Coast. They will be seen in action, running, jumping, dancing, fancy stepping, side-splitting antics and in amusing games. Every rider, ring master, attendant and groom will be garbed in the most superb attire. It will be a Courteous and Genteel Performance that will stand out in your memory.

TRACTOR WORKING DEMONSTRATION

See in operation the different kinds of Tractors, from the largest to the smallest, combined harvesters, grain and bean threshers; power cultivators, sub-soil and deep cultivators, automatic hay loaders, plows, harrows. The tractor demonstration will be larger than anything of its kind ever held in the Southland and will include a complete POWER FARMING EXHIBIT.

THE POULTRY SHOW WILL BE THE ONLY OFFICIAL AMERICAN POULTRY ASSOCIATION SHOW HELD IN CALIFORNIA THIS YEAR.

SPEND 6 WONDERFUL DAYS AND NIGHTS AT THE

San Fernando Valley Fair Chamber of Commerce Bldg. SAN FERNANDO, CAL.

One mile north of town of San Fernando on State Highway

E. R. ELKINS, Director of Fair Official Los Angeles County Fair

Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins

October 4, S. O. Walker, Visalia.
October 5, Robt. T. Curtis and Son, Tulare.
October 6, Alex Whaley, Tulare.
October 21, Robt. N. Clapp, Nuevo.
November 3, A. W. Morris & Sons, Inc., Woodland.
November 9, Palo Alto Stock Farm, Palo Alto.

Herefords

October 27, Pacific Coast Hereford Breeders' Association, California National Livestock Show, San Francisco.
November 1, J. H. Cazier and Sons, Sacramento.

Shorthorns

October 28, California Shorthorn Breeders' Association, California National Livestock Show, San Francisco.
November 2, W. M. Carruthers, Live Oak.

Overton H. Harris, Missouri, one of the most distinguished Hereford breeders of America, has been visiting a number of the leading herds of this state. It is Harris opinion that the outlook for Hereford cattle in California is very promising, and he expressed enthusiastic surprise in the improvement made in California herds in recent years. Harris expects to visit the California National Livestock Show to be held in San Francisco next October and it is probable that his herd will be represented.

E. Z. Russell, swine expert of the United States department of agriculture was in California last week.

Carnation Stock Farms has purchased the Holstein bull, Pietertje Prospect Colantha, son of the world's champion cow, Segis Pietertje Prospect, from Brentwood Farm and Huntingdon Valley Farm of Pennsylvania, for $50,000. Pietertje Prospect Colantha was sold by the Carnation firm last spring for $27,100 and was repurchased to take the place of the celebrated Carnation King Sylvia that died recently.

The American Farm Bureau Federation's Livestock Marketing Committee of 15 met in Chicago on August 10 to complete plans for launching a market selling agency, the purpose being to establish selling agencies at such markets as are deemed advisable. The members will be bona fide livestock producers, either individuals, partnerships or corporations, also cooperative livestock shipping associations. It is proposed to organize a stocker and feeder concern as a subsidiary corporation to buy and sell stockers for members of the U. S. Livestock Producers, and others. To provide the necessary funds for its operation preferred shares of $25 each will be sold, drawing 8 per cent dividends. Profits above interest on preferred stock will be prorated between buyers and sellers of the stock handled.

According to Secretary Paine of the state fair this year's livestock show will be distinguished by the large number of new exhibitors.

W. S. Guilford, one of the owners of the Butte City Ranch and one of the most popular livestock men of the state, is recovering from a long siege of illness.

Members of the Western Berkshire Congress are planning to hold a "donation sale" at Sacramento during the week of the state fair. For several years this organization has resorted to such sales as a means of financing their operations.

William Briggs, who is establishing one of the high class Hereford herds of California on his ranch near Dixon, is now in the East and it is probable that he will make additional selections for his herd.

Senator B. F. Rush, Suisun, president of the California Shorthorn Breeders' Association, has purchased from the Blackhawk Ranch, Diablo, the red three year old Shorthorn bull, Blackhawk Sultan, a son of Roan Radium and out of Red Lady 39th.

Female livestock imported into Mexico, must now pay a duty of $4.99 (U. S.) per head. Two males to each female are allowed in free of this duty when for breeding purposes. There is also a duty of 50 cents per head for mature cattle and 10 cents per head on young stock sent in for six months' grazing by breeders on our side of the border.

William V. Mong, owner of Your Duroc Farm at Whittier, is taking out a nice bunch to the shows. The herd is headed by My Partner, the Walt's Top Colonel boar, and includes a fine Pathfinder's Likeness sow, a High Pathfinder junior yearling sow and futurity litters by Mammoth Sensation and My Partner.

Arizona sheep men can't understand why the freight rate on wool from Phoenix to Boston is $3.33 a hundred while from Los Angeles to Boston it is $1.66. For the time being they find it necessary to ship their wool to Los Angeles, thence by Panama Canal to the Atlantic.

Santa Anita Rancho reports records: "Blanche Nudine Clothilde Walker, senior three, milk 464.3 pounds, butter 24.11, average test 4.15 seven days. Lady Lilith Walker De Kol, senior two, two months after freshening, milk 492.8 pounds, butter 21.11, seven days, milking 70 pounds a day. Ellen Walker Hartog, senior two, milk 383.3 pounds, butter 21."

E. H. Crabb, chairman of the livestock sanitary board, and president of the Arizona Cattle Growers Association, died July 30 at his home in Flagstaff. Mr. Crabb was one of the best known and most loved of all the cattle men of the state, and his loss will be keenly felt not only among cattle growers but by his business associates and acquaintances throughout the state.

STATE FAIR DAIRY PRODUCTS EXHIBITS

By Prof. C. L. Roadhouse

Creameries, cheese factories and dairymen are encouraged to enter their products in the state fair dairy products exhibit. Liberal prizes amounting to $1,080 and gold medals are offered by the state agricultural societies to exhibitors of dairy products, including cheddar, California (granular), jack, Swiss and goat cheese and condensed and powdered milk.

Creameries and cheese factory operators are especially urged to send exhibits, since there has been a decreasing number of exhibits in recent years. The Dairy Building at the state fair grounds is equipped with glass enclosed refrigerator rooms, and products will be exhibited with the name of the exhibitor, throughout the ten day period of the fair. Milk and cream samples are to be shipped on August 29, to Director in Charge of Dairy Products, Consumers Ice & Cold Storage Company, Sacramento, and butter and cheese exhibits shipped to arrive in Sacramento on September 2, express prepaid, addressed to Director in Charge of Dairy Products, Dairy Building, State Fair Grounds, Sacramento.

The milk and cream exhibits will be judged by R. J. Posson, U. S. Dairy Division, Salt Lake City, Utah; George H. Hart and C. A. Phillips of the University of California. Butter and cheese exhibits will be judged by C. L. Mitchell, of Los Angeles; S. L. Denning of San Francisco, and G. D. Turnbow of the University of California.

It is hoped that the dairy interests of the state will support the state fair in their effort to give prominence to California dairy products.

BARNESON HOLSTEIN SALE

Col George W. Bell made a nice sale of the milking herd of registered Holsteins on the Barneson ranch near Corcoran on August 10. While almost none of the animals was advance register tested and many of them had pedigrees practically free from red ink there were some nice individuals among them and these were in demand.

The average on 29 head of tuberculin tested cows was $212 and the top of the sale was only $400. The top was the nice young cow, White Lily Pontiac Vale, a granddaughter of King of the Pontiacs. She, with eight more of the best ones, went to the Maxwell Farms at Hollywood. The Hanford branch of the L. A. Creamery purchased a number of good cows as did Sergeant Brothers of Tulare. Col. Bell was on the block and Col. Perkins of Tulare assisted in the ring.

SEVEN DAY RECORDS

The following seven day official records have recently been completed at the Santa Anita Rancho:

Blanche Nudine Clothilde Walker: Age 3 years, 6 months, 14 days. Milk 464.3, fat 19.389, butter 24.11.

Thelma Riverside Walker: Age 3 years, 1 month, 21 days. Milk 443.4, fat 17.484, butter 21.855.

Anoakia Pontiac Beets 2nd: Age 3 years, 19 days. Milk 584.4, fat 16.968, butter 21.21.

Ellen Walker Hartog: Age 2 years, 6 months, 26 days. Milk 383.3, fat 16.780, butter 20.975.

Lady Lilith Walker De Kol: Age 2 years, 8 months, 27 days. Milk 492.8, fat 16.988, butter 21.11.

Anoakia Pontiac Beets 2nd is a half-sister to King Korndyke Pontiac Acme the $41,000 Baldwin herd bull. She has a record of 17.03 pounds of butter in seven days at 20 months of age

---

LET'S COOPERATE MORE IN USE OF FORESTS

Did it ever occur to you cheerful forest lovers that one of your social duties, when you go for a vacation, is to work with the forest service? The service has men stationed at various points to guard the nation's property from fire, to improve the trails and telephone lines, to give information to you and to all who camp in the tall timber. They have other duties, but these are some of them, and there is not a man on the forest but is glad to help you. What do you plan to do in return? Did you ever think of hunting up a ranger or guard, telling him the names of your party (most of the ranger stations have registers on purpose for you to sign if you want to), the number of your machine, the place you want to camp and about how long you propose to stay? None of this is compulsory in a national forest, but if you get into the habit of doing it, several good results are possible. For you, there is information as to good camping places, good water, good fishing or hunting ground; there are maps for the asking, and suggestions for side trips. Better than these, in case something serious happens at home, you can be found.

The National Livestock Exchange, as the initial step in a widespread campaign to eradicate tuberculosis in livestock, announces the appointment of Howard R. Smith of Chicago as livestock commissioner to coordinate and supervise the efforts of member exchanges at the different markets.

Many livestock exchanges throughout the country, realizing the importance of stamping out tuberculosis, have organized sanitary committees and engaged qualified men to cooperate with federal and state authorities in combating this disease.

A Bargain in Jerseys

2 daughters of the great bull

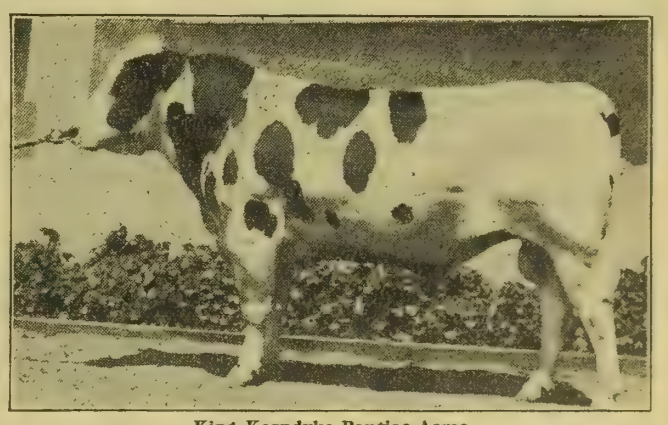
ST. MAWES

along with their 2 yearling daughters and a herd bull. For particulars address

Chas. M. Talmadge, Salem, Oregon

Santa Anita Rancho
HOLSTEINS

Pure Bred Registered
Percheron, Arabian, Thoroughbred Horses
Mammoth Jacks and Jennets Holstein-Friesian Cattle
Big Type Poland China Swine Southdown Sheep



King Korndyke Pontiac Acme

The Most Promising Young Herd Sire of the Country

He combines in a rare degree conformation, quality type and great long distance production.

His sire, King Korndyke Pontiac 20th, a grandson of King of the Pontiacs out of Miss Valley Mead De Kol Walker, who has twice made 1000 lbs. of butter in 10 months and who holds the world's record for three-year-olds in the 8 months after calving division with 25.15 lbs. of butter in 7 days.

His dam, Miss Aaggie Acme Burke, who holds the world's record for milk in 1920 with 24,338.9 lbs. of milk and 1,034.66 lbs. of butter in 365 days at 2 years of age. At 4 years she made 35.38 lbs. of butter from 726.4 lbs. of milk in 7 days and in 7 months has made 825.68 lbs. of butter from 18,393.1 lbs. of milk. He is backed by three generations of 1000-lb. cows, one of which includes a junior two-year-old. Six of his seven nearest dams average 1105.11 lbs. and his seven nearest dams average 1058.16 lbs. butter in a year.

King Korndyke Pontiac Acme is siring excellent straight typey calves which give promise of proving to be ideal Holsteins

Bull calves from high record dams for sale at reasonable prices.
Write for a copy of King's pedigree.

Correspondence Invited Visitors Welcome

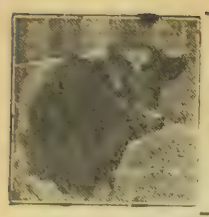
Santa Anita Rancho
and
Anoakia Breeding Farm
Anita M. Baldwin, Owner

SANTA ANITA CALIFORNIA

Watch La Tierra de Uva Durocs **Pathfinders, Orions, Sensations**
Three Top Boars

Fannie's Orion King assisted by Uneeda Orion B, 2nd prize aged boar at State Fair, 1920, and grand champion at Glenn County Fair, 1919, and Valley View's Sensation, 3rd prize junior boar pig and litter mate to 1st prize and reserve champion at State Fair, 1920, and a wonderful string of prize winning sows and gilts, including Miss Sensation, 1st sow pig and reserve champion at State Fair

C. C. ELLIS **Exeter, Cal.**



When Shorthorn cows yield near 20,000 pounds of milk per year and Shorthorn steers continue selling at the top of all the beef markets the landowner or tenant can readily understand the advantage of growing Shorthorns.

"Other breeds may come and go but the Shorthorn goes on forever."

AMERICAN SHORTHORN BREEDERS' ASSOCIATION
13 Dexter Park Ave., Chicago, Ill.

INNISFAIL MILKING Shorthorns
MILK BEEF PROFITS

Two Young Bulls From High Producing Dams
A May 1920 son of the champion Westward Ho and out of a 10,500 pound daughter of the 1919 Chicago champion. A 14 months old son of Glenside Royal and out of Princess Clay a cow of beautiful type and with over 12,000 pounds milk. Also have a few younger bulls and heifers. Prices moderate and all guarantees. Here is your chance. Address
J. D. ROWE & SON, Lessees, Davis, Cal.

NOVEMBER 2
is the date of my
Fourth Public Sale of Shorthorns
30 Scotch Females
10 Scotch Bulls
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A Choice Herd of Fifty Females
Headed by Milmar Stamp
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We have for sale at real bargain prices four extra good yearling bulls that are well bred and of good color. These calves are just right for the range man who wants to improve his cattle. Visit our herd or write for prices. Satisfaction guaranteed.
Edinger-Johnson Company
Hood, California

Show Bull at a Bargain
Born Dec. 10, 1920
A young bull that combines the great qualities of Sir Pietertje Ormsby Mercedes and King Segis Pontiac.
TYPE PLUS PRODUCTION
Sire — Tritomia Pietertje Ormsby, a line bred son of Sir Pietertje Ormsby Mercedes and out of Alice Tritomia Ormsby, who made 34.43 lbs. butter in 7 days and 1,048.6 lbs. from 24.287 lbs. of milk in a year. This bull carries 62½ per cent of the blood of Sir Pietertje.
Dam—K. S. P. Queen Burke, a daughter of King Segis Pontiac. Her record is 31.12 lbs. of butter from 584.3 lbs. of milk in 7 days at 4½ years of age. His seven nearest dams average 31.3 lbs.
Tuberculin tested and guaranteed in every way.
MAXWELL FARMS
Near Universal City R.F.D., Hollywood, Cal.

HOLSTEIN Fred Hartsook RANCH CATTLE
We have assembled an excellent foundation herd of females and will be glad to have breeders call. Fred Hartsook, Lankershim, California.

Sir Aaggie Hiske Walker SHOW TYPE and PRODUCTION
He was first in two year class at Riverside last year.
His dam is a 34 lb. daughter of Prince Gelsche Walker.
His sire is the 36 lb. Morris bull—Sir Aaggie De Kol Acme.
A limited number of approved cows will be accepted for service.
E. D. BARRY, JR. Workman and Azusa Ave., Covina, Cal.

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Offers some excellent young bulls ready for service. Sired by Japs Perfection Owl. Out of cows with Register of Merit records. Also a few heifer calves.
GUY H. MILLER
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Pure Bred Rams and Ewes
For sale cheap. Overstocked. Large smooth frames. From the very best strains of this country and France. Immediate delivery. P. O. Address
Windell Orchards, Glenn, California
8 Miles South of Hamilton City

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Breed your mares to Shire Stallions, good Shire Geldings are in demand. Get some registered Shire Mares.
Shire owners, record colts young, fees are double after one year old. Prepare Shires for fall shows, premiums are very liberal this year. For information on Shires write
W. G. Lynch, Secretary, American Shire Horse Association, Tonica, Illinois.

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Free Information
Mammoth Russian Sunflower silage is proved stock feed. Edwards Bros., Alderdale Herford Farm, Mayville, Ore., feeding 20 bulls, saved $480.00 in 5 months by substituting sunflower silage for mill feed. Write for free list of government bulletins about this wonderful stock feed. You can pay cost of silo from savings you make. We will gladly supply you with full information about sunflowers. 1921 Indiana Silo Book ready now.
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have sold more than $500,000 worth of registered cattle in our sales, under the most stringent requirements laid down by any sales organization in America. Satisfied buyers have been the rule in all our sales.
California Breeders Sales & Pedigree Company
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FEED FOR SWINE, STOCK AND POULTRY
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KERN COUNTY BOYS SHOW THE WAY

(Continued from Page 173.)

under the conditions of the first six weeks."

January 15 opened the spring feeding test with 12 pure bred Poland China barrows in a dry feed lot. They were September and October pigs and weighed from 70 to 120 pounds each. Eight of the 12 averaged between 70 and 90 pounds and four averaged about 115 pounds. The details of this test are set forth by Willie Delfine, who writes:

"The feed lot was near a slough of fresh water and so fenced that the hogs could go down into it to drink. The hogs had access to a large self feeder containing ground barley and milo mixed equal parts. Tankage was fed in a separate and smaller feeder. Each morning the hogs were fed all the soaked barley and corn mixture that they would clean up. This supplemented the dry grain mixture in the feeder. The grain was soaked from two to three days. During the last three weeks of the test ground Indian corn was substituted for the milo. The gain was only a little faster with the Indian corn and seemed to make a saving of about .2 of grain per pound gain. The accompanying chart shows the average rate of gain during the 60 day test. It will be noted that hogs weighing 70 pounds at the start gained1.2 pounds per day during the 60 days; those starting at 88 pounds gained an average of 1.7, and those starting at 110 gained 2 pounds per day. The one that started at 123 is not a fair example, since he had an accident which cut down his average gain. We believe the conclusion from the above figures may simply be stated as follows: A small pig has not the frame or capacity to eat as much food and so grow as fast as the large pig, especially in a 60 day test. The larger pig eats more feed and makes a faster gain. However, this would only be true up to a weight of, say, 225 pounds. At the same time it costs a little more to make gains on the pig weighing above 175, as one has to maintain the body as well as get increased gain.

"A trifle less than five pounds of grain was used to make each pound of gain.

"From January 15 to February 18 the 12 head gained 542 pounds. It was 33 days time for eight head and 24 days for four. During this period 2,827 pounds of grain was used, hence taking five pounds of grain to produce a pound of gain during the first stage of the test.

"The second period, from February 18 to March 2, covered a period of 12 days, in which the average gain per hog was 19 pounds, or a total of 224 pounds for the 12 head. A total of 1,163 pounds of grain used during these 12 days produced pork at the rate of 5.2 pounds of grain per pound gain.

"The two week period from March 2 until March 16 made an increase weight of 308 pounds of pork on the 12 hogs at a cost of 1,504 pounds of grain, or an average of a trifle less than five pounds of grain per pound gain.

"The hogs were sold to the Bakersfield Market, March 21, and dressed out 76 per cent. They were taken directly from the feed lot to the slaughter house and killed before shrinking any in live weight. Otherwise they would have dressed an even higher per cent.

"The members of the Boys Agricultural Club draw the following conclusions from the above reported feeding test: The test was carried on very carefully and we believe the conditions made as near ideal as is practical in dry lot feeding. The figures show us that we must, as a general thing, expect our hogs in the dry lot to use an average of five pounds of grain to make a pound of gain, especially so when they are growing shoats and depend wholly on the dry lot feed of dry and soaked grain."

"During the first two weeks, i. e., from September 24 to October 8, it required 535 pounds of ground barley and 300 pounds of ground wheat or 835 pounds of grain and alfalfa pasture to make 253 pounds of gain on the hogs. In other words, it took 3.3 pounds of grain and alfalfa pasture to make a pound of pork.

"The second two weeks of the test, from October 8 to October 22, the hogs ate 1,120 pounds of ground barley, 375 pounds of ground wheat and 11 pounds of tankage, making a total of 1,506 pounds of grain and short alfalfa pasture to grow 363 pounds of increase. During this period they required 4.1 pounds of grain and the short alfalfa pasture to make a pound of gain.

"The third period, October 22 to November 5, the pigs used 1,175 pounds of barley, 150 pounds of wheat, 150 pounds of coconut meal, 10 pounds tankage, making a total of 1,385 pounds of grain. The alfalfa pasture has become very short by this time. The hogs gained 282 pounds during this period, using4.9 pounds of grain per pound of gain. It will be noted that a great deal more grain was used during this period to make a pound of increase than during either the first or second. The explanation is that during the first few weeks the alfalfa was good and the shoats made very economic gains, using it with the grain. Later the alfalfa became shorter and the hogs got very little good from it, and depended on the grain for their total feed. At this stage the hogs were practically in dry lot feeding on account of the shortness of the alfalfa.

"At the close of the first six weeks of the feeding test, 898 pounds of pork had been produced by 3,726 pounds of grain and fair alfalfa pasture for most of the time. These totals figure 4.2 pounds of grain to make a pound of gain under the above conditions.

"The last two weeks of the test, between November 5 and November 19, took 1,225 pounds of grain to make 215 pounds of gain, or 5.7 pounds of grain for each pound gain. During this period the alfalfa was a minus quantity, so the hogs depended entirely on the grain. It was of poor quality and the hogs ate less of it and made poorer gains than the period two weeks earlier with good grain. This two weeks period brings out the fact that poor grain, although cheap, may be the most expensive in the end, since the hogs make markedly poorer gains on it and use more to make a pound of gain.

"It must also be remembered that the older and larger a hog or any animal becomes, the more feed is required for maintenance, and so it becomes more expensive to make a pound of gain.

"We believe that the following general conclusions can be drawn from this feeding test: Good thrifty hogs on alfalfa pasture, gaining and growing at the same time, use from three to four pounds of grain with the alfalfa to make a pound of gain when the rate of gain is 1½ pounds or more per day per pig. When the same hogs are changed from alfalfa and grain to grain alone it requires from four to five pounds of grain to make a pound of gain, depending on the quality of grain and the rapidity of gain. The faster the gain the less the cost of making it, as there is less food used for maintenance during a short period than during a longer one. and so more of the food eaten actually is used in making gain."

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WRITE FOR THEM.
Animal Industry Department of
PARKE, DAVIS & CO.
DETROIT, MICH.

POTATOES FOR STOCK FEED

By G. E. Gordon

Cull potatoes make a very satisfactory stock feed. They are sometimes fed to cows with good results, usually fed raw. Potatoes make a very satisfactory hog feed when mixed with grains that are high in protein content. They are often fed with cull beans and make a pretty well balanced ration when so fed.

In feeding to hogs it is desirable to cook them. Sufficient can be cooked to last two or three days. This is usually done by taking a large kettle or boiler or vat of some kind that is convenient and building a fire under it and cooking the potatoes quite thoroughly. Beans are sometimes cooked with the potatoes, and sometimes corn or barley, although there is no advantage in cooking the grain. In fact, it can better be mixed with the potatoes after they have been cooked and cooled. The potatoes should be well salted while they are cooking. The cooked potatoes can then be mixed with whatever grain is being fed and a little water added if desired, and it can be fed as a swill. Potatoes should not make up more than 50 per cent of the ration when fed with grain as they are highly carbonaceous and should be mixed with feeds containing more protein.

Cooked potatoes are sometimes mixed with bran for dairy cows and make quite a satisfactory feed. Potatoes are sometimes used in feeding horses and in this case are usually fed raw in relatively small quantities at a time, although cooked potatoes can be mixed with bran and fed quite satisfactorily as a mash.

LIVESTOCK IN FULL FORCE AT SOUTHERN CALIFORNIA FAIR

The premium list of the Southern California Fair, which is now being circulated, shows a strong increase in livestock premiums in all classes. Especially is there a very attractive increase in the cattle and swine departments and there promises to be a big show in all livestock classes.

The dairy breeds will especially be in evidence with the largest display in the state. The fair is very fortunate in having secured W. H. Standish of Lyons, Ohio, one of the outstanding judges of dairy breeds in the United States, to judge these classes.

The swine department will also show a very lively interest in every class. The Duroc-Jersey futurity show has filled, the Poland-China promotion show has filled, and the very attractive litter specials in both the Berkshire and the Hampshire classes have filled. The junior club boys are on their toes for this fair and about 50 pig club exhibits are expected.

The poultry, goat and rabbit shows will be the largest in the south. Riverside has twice held the world's record for goat exhibits and will repeat with a greater one than ever this fall.

LIVESTOCK INSPECTORS ASSOCIATION

At the recent meeting of the California State Veterinary Medical Associaiton at Fresno an auxilliary association was organized among county livestock inspectors. Dr. J. F. McKenna of Fresno is president; R. S. Christman, secretary-treasurer.

SELECTING POLLED HEREFORD FOR SHOWS

Six official inspectors representing the American Polled Hereford Breeders Association are now on the road selecting cattle for the various sales to be held under the management of the association during the coming fall and winter. These men will visit nearly 100 herds located in various parts of the United States and will meet at the home office at Des Moines, Iowa, late in August to agree upon the cattle to be taken from each herd. The territory has been divided among the six men in a way that will permit of seeing all the herds in a minimum length of time and at the minimum of expense. From the cattle chosen by these inspectors as being typical of the best the breed affords, there will be taken enough to make up the big "Polled Hereford Week" sale at Des Moines in February, 1922, and the "International" sale at the Chicago show on November 30, 1921. It is expected that the quality of stock chosen will be better than ever, this season. Thirteen states are represented in the nominations.

Arizona ranges have been greatly improved by recent rains. The bulk of the small grain crops was harvested under favorable conditions. Yields of barley and wheat were below the average, but the total production was larger than last year, due to the increased acreage.

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A complete display of the products and progress of the Golden State.
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EXCURSION RATES ON ALL RAILROADS
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Poland China Hogs
For Sale

Fall boars, sired by Yates Big Orphan and out of Glenn Chief and Long Jumbo sows. Guaranteed breeders.
25 spring gilts of March and April farrow, sired by Yates Big Jones and Young Bob. Tops from 100 head.
Tried sows, bred for August and September farrow, bred to Yates Big Jones and Young Bob. All in perfect breeding condition.
This stock is all priced in accordance with present financial conditions and is cholera immune.
Owner:
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PRACTICAL fruit-growers wanted a plow especially adapted to meet their requirements. They made suggestions. Practical plow-makers put those suggestions into effect. And that is why the **John Deere No. 8** has special advantages for orchard plowing.

Reversible Hitch permits setting the plow to either side for close work in throwing either to or from the row. Note the illustration at the right.

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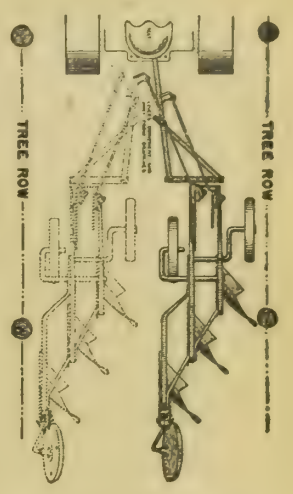

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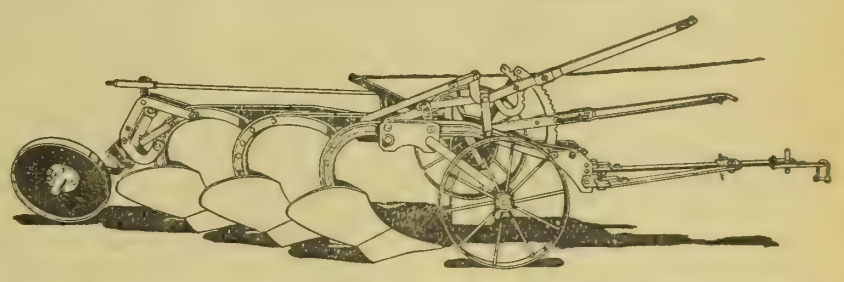

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Day Old Pullets—Here is your chance to get day old White Leghorn and Ancona chicks guaranteed at least 90 per cent pullets. We are taking orders fast for August and September delivery. We also have R. I. Red and Barred Rock chicks but do not separate the sex. All chicks are from strictly thoroughbred laying stock and are hatched right and shipped by Special Delivery Parcel Post. Send for prices and get your orders in at once. We also have a limited number of pullets from two to four months old and yearling hens. Orange County Hatchery, Santa Ana, California.

S. C. White Leghorn Baby Chicks from the heaviest laying (Hoganized) stock. Safe delivery live vigorous chicks guaranteed. No money in advance; pay on delivery. Price from July 15 to August 31, $4.00 per 25, $8.00 per 50, $15.00 per 100. Special prices 500 and 1000 lots. Largest electric hatchery in the world. Established 1898. MUST HATCH INCUBATOR COMPANY, 438 Seventh Street, Petaluma, California.

Petaluma Hatchery, established 1902 by L. W. Clark. White Leghorn chicks from heavy laying free range stock during August 17c each, $8.00 per 50, $15.00 per 100, $140.00 per 1,000 prepaid. Brown Leghorns one cent more than White Leghorns. We positively guarantee safe arrival and full count of good strong chicks and no questions asked. L. W. Clark, 615 Main Street, Petaluma, California.

Fine Young King Pigeons $3 a pair. Guineas $5 a pair. Wyandotte, Partridge Rock and Leghorn eggs $3 a setting. Are disposing of some of our breeding geese; offering them at a bargain price. Yearlings $15 a pair, 2 year old birds $20 a pair. All bred from imported stock. Send for catalog. Paradise Valley Poultry Ranch, National City, California.

It's no wonder so many poultry raisers make a failure of the business. Without any knowledge of raising poultry people will branch out expecting to make a success. By putting in practice the valuable contents of POULTRY FOR PROFIT, $1.00 postpaid, success is assured in the poultry business. Cultivator Publishing Company, Los Angeles, California.

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For Sale—San Joaquin Valley, 40½ acre alfalfa ranch in a prosperious alfalfa and dairy section of Fresno County, 30 miles southwest of Fresno, Kings River water. 30 acres seeded, fine stand. 4 room California house, domestic well, $250 an acre, half cash, balance 9 years at 7%. For full particulars write owner. P. Schilz, 3118 Humboldt Street, Los Angeles, California.

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Guernseys — Grape Wild Farms—Berkshires—Young bulls, from calf age up to 16 months old, of May Rose breeding and out of A. R. cows. Bred sows and gilts, service boars and pigs of both sexes for sale. Grape Wild Farms, Escalon, California. A. B. Humphrey, Proprietor.

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For Sale 40 rebuilt windmills, tanks, pumps, steel towers, cylinders, rods. Special new 1,000-gallon galv. tanks, $39.25; 2,000, $53.25; 3-in. irrigating pipe, $14.75; 4-in., $18.75; also used pipe. Why pay more? Demmitt, 120 N. Main, L. A.

For Sale—Pomona Pump, 28 head; 30 Holt tractor, Saunders plow, disk cultivator. Clarence Wagner, Terra Bella, California.

WANTED

Wanted—Situation as ranch superintendent or manager. Married man thoroughly experienced in orchard and general farming. Box 20, California Cultivator, Los Angeles.

Wanted—Unsulphured dried figs and other unsulphured fruit. Write for information. Martin A. Witt, 120-122 West Ann Street, Los Angeles.

Wanted To Hear from owner having farm for sale; give particulars and lowest price. John J. Black, 116th Street, Chippewa Falls, Wisconsin.

Wanted—Purebred Buff Plymouth Rock cockerel. State age and price. Box 454, Holtville, California.

Wanted—Position as test milker or herdsman of small herd; 20 years' experience; references. Box 12, Cultivator.

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WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

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FOR SALE — 100,000 SOUR ORANGE SEED BED STOCK; WASHINGTON NAVEL, VALENCIA LATE ORANGES AND EUREKA LEMON TREES; ALSO FUERTE, LYON, PUEBLA AND DICKEY "A" AVOCADO TREES. T. J. WALKER, FIRST NATIONAL BANK BUILDING, SAN FERNANDO, CALIFORNIA.

For Sale—Grafted walnut trees, also citrus and deciduous trees. Order now for 1922 delivery. Get my prices. Ketscher's Nursery, 1101 E. 4th Street, Santa Ana, California. Phone 572-W.

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CONCERNING THE YUCCAS

(Continued from Page 171.)

was due to the higher altitude, but this spring I learned that the Cajon yuccas are mostly of a different variety. Some who read this article may happen to know that I am the dreamer who built Camp Cajon, with its Druidic tables of concrete and its structures of granite boulders. Those who have visited the camp may have noticed two yuccas, apparently growing out of two stone columns. These two plants are set, however, in large vitrified pipes which extend down through the columns to the earth beneath and are filled with soil. They have not been watered, except by rain, since they were set two years ago. A few months ago, when the pergola chalet contributed by the California Auto Trades Association was completed and its grounds were ready for adornment, I decided to plant a solid lawn of yuccas on the sunny south side thereof. When we went to get a truck load of the plants I found that the Cajon variety sends out offshoots or suckers and is apparently capable of reproducing itself indefinitely whether it ever blooms or not. I had noticed the plants growing in clumps and had supposed that a whole podful of seeds had sprouted in a bunch, but found instead that some plants had as many as a dozen offshoots. The variety which I had found growing on my Highland place—and this variety is probably the one which occurs in most localities—never forms offshoots; and consequently, when the single plant blooms and dies it leaves no progeny except through the medium of its seed.

Anyone who fears that the yuccas may become extinct and who wishes to do a public spirited thing may gather enough seed from a single stalk to grow a thousand seedlings; for the pods are packed fuller with the thin, flat black disk like seeds than any can ever was with sardines. When the young plants are a year or two old they may be set, during the rainy season, wherever nature seems to be short of them. Two boys, one of them with a spade, could set out the thousand seedlings in a day and with the confident assurance that, without further attention, they would bloom for their children's delight a quarter of a century later.

For the information of those who have not seen the miracle I should state that when the springtime of the yucca's year of destiny at last arrives, the plant sends up, all within the space of a few weeks, a blossom stalk which sometimes reaches a height of 15 feet and with a diameter at the base as great as six inches. While this stalk is mounting upward it resembles nothing else so much as a giant shoot of asparagus. Soon after I settled on the East Highlands mesa a neighbor's wife told me that the Mexicans (or was it the Indians?) made a practice of cutting these shoots when a foot or so in height and of roasting them in hot ashes as a springtime delicacy. Some time afterward I related to her how I had found one of the shoots in just the right stage and started for the house to get a butcher knife with which to cut it and how, upon returning with the knife, I had found it in bloom. "Well, well! How remarkable!" she courteously replied. But her husband, neither so courteous nor so credulous, snapped out, "How long were you gone?" And I was compelled to confess that when I reached the house I forgot all about the yucca shoot and did not return with the knife for three weeks.

Eastern people—and perhaps some Californians — will be interested to know that these blossom stalks after they are fully matured are cut into short cross sections and used as pin cushions, their soft and sponge like centers being ideal material for that purpose, while the hard exterior of the stalk makes a natural holder for the natural cushion. Sometimes the stalks are distorted in their growth and take strange and fantastic shapes. I once saw one over the mantle in a mountain cottage which had grown in serpentine form; and the mountaineer, obviously a sculptor, had carved the big bulbous base of the stalk in imitation of the head of a giant snake. It goes without saying that it made a striking and startling decoration. I have not yet been able to verify the report that a certain saxophone maker has given an order for a thousand

of these stalks to be grown in the form of the instrument he manufactures, but I have no doubt that it could be done.

For the questionable taste displayed in cutting and carrying the yucca plumes from their natural habitat I have no word of defense; but, really and truly, there is no more danger of extinction of the species than there is of extermination of the hardy, vigorous and beautiful California valley quail which the city sportsmen pursue so relentlessly whenever the game card says the season is open.

PRUNE AND APRICOT GROWERS

(Continued from Page 174.)

plentiful and as a consequence we hardly expect to market all of the crop in the early sale, but with the improvement of export we are looking forward to more continuous business than during the past season. Aside from every consideration of past accomplishment, the association has certainly justified the faith of many good grower members in the firm attitude of our sales department over past year's time. This stand alone is certainly in the largest measure accountable for our present encouragement."

FARM NAMES MAY BE TRADE-MARKED

The United States patent office recently approved a trademark covering the name of an Iowa farm. Ledru C. Willits, the farmer in whose name the trademark was issued, is a breeder of pure bred hogs, cattle and sheep. The name of the farm as trademarked is "Hawkeye." To the knowledge of livestock men in the United States department of agriculture, Mr. Willits is the first stockman, and probably the first farmer, to obtain a United States trademark for his farm. There is nothing in the law to prevent it, but apparently no one thought of it before. If a farmer uses his farm name and trademark as part of his selling operation in disposing of what he produces, the trademark protects him in its use in interstate commerce.

Several states have laws which authorize the registration of farm names with the state authorities, but a trademark registered by the government protects the use of the farm name outside of the state in which the farm is located.

Home Made Vinegar

By W. V. Cruess

GOOD vinegar for home use can be made from grapes, apples, oranges and other sweet fruits. Culls, cores, parings and windfalls can be used as well as dried fruit, raisins and honey.

Preparing the Juice

A sweet liquid is first prepared containing from 10 to 20 per cent of sugar. This is made from the fresh fruit by crushing, heating and pressing out the juice. If the juice is not very sweet one-quarter to one-half pound of sugar should be added to each gallon. The juice of very ripe grapes should be diluted with one or two pints of water per gallon. Honey should be diluted with an equal volume of fruit juice plus five times its volume of water. Dried fruit should be soaked in water (one gallon to two and one-half to three pounds of fruit) 24 hours, then heated and pressed.

Peels and Cores

To peels and cores, add three quarts of water to each quart. Boil a short time. Press and to each gallon of juice add one pound of sugar.

Yeast

The liquid prepared by any of the above methods is placed in a barrel, crock, wooden bucket or large bottle and caused to ferment by adding a cake of well broken up compressed yeast to about each five gallons of liquid. The vessels in which this fermentation takes place should be cleaned and sterilized with hot water and soda and must be free from vinegar. Never use galvanized metal.

The temperature of the fermenting liquid should not fall below 65 degrees Fahrenheit, nor rise above 90 degrees Fahrenheit. The usual house temperature in California is satisfactory. It should be stirred frequently during the first week and in two or three weeks all the sugar should have disappeared.

Adding Starter

It is then drawn or poured carefully off the sediment into a clean barrel, crock or demijohn, inoculated with vinegar bacteria and acidified to prevent injurious bacteria from growing. Both these objects are accomplished by the addition of about one pint of home made or barrel vinegar from the grocery to each gallon of fermented liquid.

Vinegar Fermentation

A wide surface and exposure to the air are necessary for the work of vinegar bacteria. The barrel, therefore, should not be filled more than three-quarters and should be provided with air holes in the heads. Other vessels should not be too deep. All openings should be screened with fine netting or cheesecloth to exclude flies. A film of vinegar bacteria will form on the surface and should not be disturbed by stirring or by moving the vessel.

The higher the temperature up to about 80 degrees Fahrenheit and the more abundant the air supply, the more rapidly the vinegar is formed. Below 60 degrees Fahrenheit the process is very slow. In an ordinary kitchen the temperature is usually favorable. In from two to six months, according to the temperature, the vinegar can be used. It should be drawn off the sediment and put in full, closed barrels or bottles. If cloudy, it can be filtered through several thicknesses of cloth. If placed in full well corked bottles and heated to 150 degrees Fahrenheit for a few minutes it will keep perfectly for years and improves with age.

When the clear vinegar has been drawn from the vessel in which it was made the cloudy vinegar and sediment remaining may be used to start another lot. This is done simply by adding a pint of this liquid to each gallon of fermented juice. Never add vinegar or vinegar sediment to fresh unfermented juice; it kills yeast fermentation. Use yeast only on the fresh, sweet juice.

Black Scale Control

WONDERFUL work has been done in the control of black scale in Ventura County under the direction of Horticultural Commissioner Call and the California state department of agriculture. Even under the complex conditions of city gardens this biological control of our worst scale pest is satisfactorily progressing. Mr. Call has liberated on town lots some 15,000 Aphycus Lounsburyi, and so confident is he of their victorious march that no fumigation of city garden trees will be ordered this year.

The Invading Forces

While the most destructive parasitic or predacious enemy of the black scale is Aphycus Lounsburyi, Rhizobius ventralis, Rhyzobius lopanthae, Orcus chalybeus and others are on the warpath, and their destruction is as fearsome as their names. And they are relentless, for their lives depend upon the destruction of their hosts. The Rhizobius cousins and the Orcus have been with us for many years and have been steadily at work. Doubtless they would have accomplished much more had we earlier learned to keep the ants away, for these pests are a great deterrent to the beneficial activities of all our insect friends. The Aphycus is a later introduction from South Arrica but is now by far the most potent parasite of the black scale.

In company with Horticultural Commissioner Ryan of Los Angeles County, H. M. Armitage, in charge of the state branch insectary at Whittier, and Geo. P. Clements, agricultural agent for the Los Angeles chamber of commerce, the writer made a tour of investigation in the Santa Paula district of Ventura County. Commissioner Call has divided his county into four districts, of which this one is by far the most important in the citrus industry. Last year he caused to be fumigated 246,000 trees throughout the county. This year, by reason of the good work of the beneficial insects, but 50,000 trees, in two districts only, will be so treated. The Aphycus have accomplished more on the Limoneira ranch than elsewhere for here they were first liberated in large quantities, but from this and other points they are spreading rapidly. Commissioner Call reports:

"Aphycus from Limoneira spread south and east about one half mile. Has not had sufficient time for clean-up, but parasites have become established. Three thousand Aphycus liberated on Howell's orchard (West Saticoy) on lower end. Some scale left in this orchard yet. Aphycus spread with wind about three-fourths of a mile to Tucker's orange orchard. This orchard commercially clean now. About one year lapse in time. Rhizobius liberated in orchard of J. M. Sharp. Scale just hatching. Cleaned up about ten acres. Spread through walnut orchard about one-eighth mile. Cleaned up orchard of Harry Pardee, about 15 acres. Approximately 90 days lapse in time."

On the Limoneira ranch there are 85,000 citrus trees. In the past about 65,000 of these have been fumigated annually. This year but 7,000 will be fumigated. This reduction proves the effectiveness of the beneficial insects. Last year the saving on fumigation was $14,000. This shows the value of the work of the state department of agriculture, for in the eight years that Harry S. Smith has had this line of experiments in hand (the biological control of insects infesting citrus trees), the total cost has been less than $50,000. Representatives of this department are now collecting Aphycus in the Limoneira orchards and Commissioner Ryan has one man there. It is estimated that each of the collectors will gather 30,000 insects per day.

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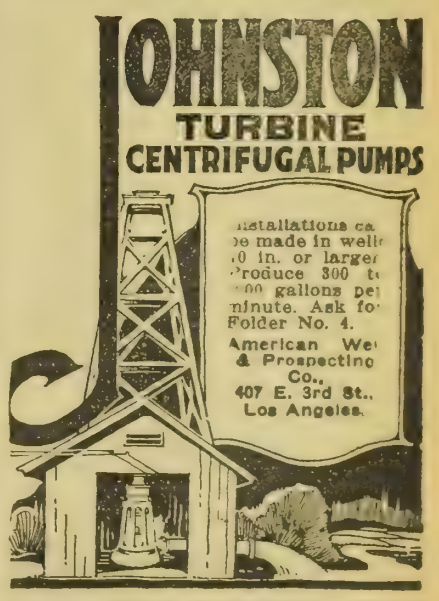

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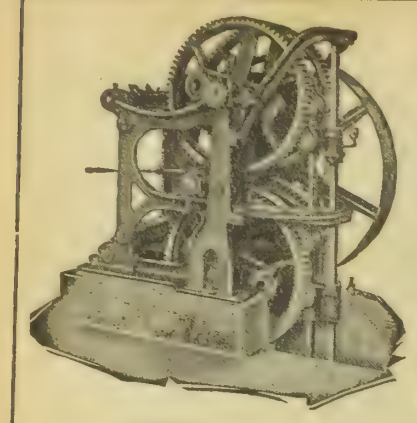

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Southern California Egg Laying Contest

By Cornele G. Ross

A SURVEY of the coast and national egg laying contests shows that poultry culturists on the Pacific Coast are taking the lead in the production of high record White Leghorns. At the close of the first egg laying contest held in Western Washington our attention is called to several new records which we will no doubt find hard to equal, viz:

1st. The remarkable flock average of 210½ eggs per bird for the entire 225 birds entered in the contest. 2nd. The winning pen, owned by D. Tancred, Kent, Washington, which laid 1,306 eggs, an average of 261 1/5 eggs in 365 consecutive days. These five birds were the original ones entered, no mortality losses causing the use of any of the alternates. However, the record at Leavenworth, Kansas, for the season of 1918-1919 of 311 eggs by a pen of five White Leghorns appears to still be the real "high water mark." The two high hens at the First Western Washington Contest tied with 312, good shaped, standard sized eggs, thus breaking the American Egg Laying Contest record of 311 eggs. It might be well to bring to the attention of those who believe it necessary for a good utility Leghorn to be possessed of a beefy comb, squirrel tail and coarse type in general the fact that the winning pair at the Western contest, with records of 312 eggs, were of Standard type, good head points, beautiful backs and with tails true to Standard. The winning pen of Leghorns would score 90 points or better without being put in show condition.

Plans for Contest Well Under Way

The contest committee has decided upon the type of house to be used and the contracts have already been let. The shed roof house as recommended by the university will be constructed. The birds will be kept in pens of about 100 each in order to make the contest compare as nearly as possible with the conditions on a good commercial poultry farm. All fowls will be trapnested and with their records will be returned to their owners at the end of the year, October 1, 1922.

There has been more or less misunderstanding, or rather lack of information, in regard to the actual value of some high records made by hens in contests heretofore. As is the case in other contests, eggs exceedingly malformed, soft shelled, or those that weigh less than 18 ounces to the dozen will not be counted or credited to the bird. Another important regulation to be in effect at Pomona is that any bird laying 50 per cent or more eggs weighing less than 22 ounces per dozen during any month after January 1 shall be disqualified for the monthly prize for that particular month, and those laying 50 per cent or more such eggs for six months beginning January 1 shall be disqualified permanently. However, special records of disqualified eggs will be furnished the owner.

In addition to the contest it is planned to conduct some experimental work to make the contest more than simply an official record of the performances of a given number of hens. Features will be included along the line of extension work in order to shed light on the individual problems that confront the poultryman in the particular section where it is to be staged. It is desired to secure 400 White Leghorn pullets for this phase of the work. The committee is asking that the poultrymen donate two pullets to the contest committee to be used for this work. This will aid the committee materially in financing the work and will not make a burden on anyone. Those desiring to donate pullets should make known their wish to one of the committee.

A resident manager has been secured in the person of C. G. Burgess, who is a poultryman of wide experience and has been associated with the poultry division of the University of California farm at Davis. The rules and regulations covering the contest have been adopted and are available in printed form for all interested. Application blanks have also been prepared and both the rules and regulations and the application form may be secured from any of the farm advisors in Southern California counties and from the Poultry Producers of Southern California, 1560 Industrial Street, Los Angeles. Applications should be sent to G. E. Gordon, 361 Court House, Los Angeles.

STORRS EGG LAYING CONTEST

Storrs, Connecticut, August 1, 1921. Report for week ending July 31:

Up to the first of August the 1,000 hens in the tenth egg laying contest at Storrs have produced a grand total of 127,270 eggs. This is 5,678 more eggs than for the six year average. The hens laid 3,486 eggs during the thirty-ninth week or a yield of nearly 50 per cent. This production is 170 eggs less than the six year average.

The first hen in the present contest to lay 200 eggs is a Rhode Island Red, No. 265, owned by F. S. Chapin of Longmeadow, Massachusetts. A pen of Barred Rocks owned by E. C. Foreman, East Lansing, Michigan, won first honors for the week with a yield of 54 eggs. The following shows the average egg production per bird for the several different breeds at the end of the thirty-ninth week: 140 Plymouth Rocks, 115.4 eggs; 50 Wyandottes, 127.8; 270 R. I. Reds, 123.4; 500 Leghorns, 135.6; 40 miscellaneous, 102.1.

The four leading pens in each of the principal varieties are as follows:

Plymouth Rocks

W. H. B. Kent (Barred), 1,603; Rock Rose Farm (Barred), 1,397; Jules F. Francais (Barred Rocks), 1,300; James F. Macdonald (White Rocks), 1,228.

Rhode Island Reds

Charles H. Lane, 1,592; F. S. Chapin, 1,455; H. S. Bickford, 1,453; The Orchards, 1,438.

White Leghorns

L. E. Ingoldsby, 1,655; Hollywood Farm, 1,645; Jack Trevethan, 1,584; Burchell & Janson, 1,568.

Other Varieties

Obed G. Knight (White Wyandottes), 1,758; H. P. Cloyes (Buff Wyandottes), 1,400; A. E. Hampton (Black Leghorns), 1,256; Harry D. Emmons (White Wyandottes), 1,131.

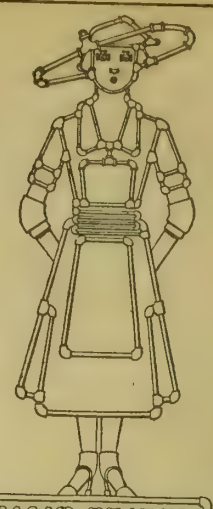
CALIFORNIA FARM BUREAU EGG LAYING CONTEST

By Prof. J. E. Dougherty

Santa Cruz, August 8: The end of July found Hansen's pen still in the lead, but George Gray's pen has consistently gained until it is now only 40 eggs behind and has dislodged Hollywood Farm from its position at second place which it held for the two preceding months. Marshall's pen has spurted up to third place, but the greatest gain was made by Alex Stewart's pen of late May hatched pullets which climbed into eighth. The ten leading pens to date are: Hanson's Poultry Farm, Corvallis, Oregon, 1,896 1/3 eggs; Geo. Gray, Santa Cruz, 1,856 2/3; W. H. Marshall, Santa Cruz, 1,856; Hollywood Farm, Hollywood, Washington, 1,844; W. A. Ford, Umatilla, Oregon, 1,836 2/3; S. L. Gibson, Santa Cruz, 1,832 2/3; Gibson, 1,758 1/3; Alex Stewart, Santa Cruz, 1,680 2/3; Santa Barbara Ranch, Santa Barbara, 1,677; Gibson, 1,676.

Twenty-four hens have now passed the 200 mark. Among the high individuals Hollywood hen, "The Leading Lady," retains top place, improving her lead over the second high hen by four eggs. Hanson's hen No. 19 and Conrado's hen No. 104 are running neck and neck in second place, while La Rita Farm's hen No. 54 stepped back to third, closely followed by hen No. 30 of the Oregon Agricultural College. Following are the high individuals to date: Hollywood Farm, 228 eggs; Conrado, 216; Hanson, 216; La Rita, 215; O. A. C., 214; O. A. C. (Barred Rocks), 212; Hollywood Farm, 212; Crewdson, 210; Hollywood Farm, 208; Brenneke, 207; Kenter, 207; Gray, 207.

Among the high pens for July, Geo. Gray, Alex Stewart and S. L. Gibson still hold the three highest places as they did last month but in different order. The leading pens for July are: Geo. Gray, Santa Cruz, 237 2/3 eggs; Alex Stewart, Santa Cruz, 233; S. L. Gibson, Santa Cruz, 230; W. J. Neef, Santa Cruz, 228; Gibson, 225 1/3; W.



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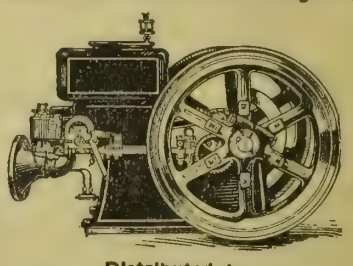

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620 So. Spring Los Angeles, Cal.

H. Ford, Umatilla, Oregon, 222 2/3; C. E. Hyde, Seabright, 219; D. B. Walls, Petaluma, 218 2/3; J. S. Conrado, Santa Cruz, 218; D. B. Walls, Petaluma, 217 1/3; Geo. Wood, Santa Cruz, 215; Warren Wood, Santa Cruz, 213 1/3.

Individual records for July closed with four hens that laid 28 eggs each, two which laid 27 each and ten that laid 26 each. The leading hens for July are: D. B. Walls, 28 eggs; O. A. C. (Barred Rocks), 28; S. L. Gibson, 28; N. C. Westerfield, 28; Walls, 27; Hollywood Farm, 27; C. K. Hale, 26; H. C. Kliensmith (Barred Rocks), 26; O. A. C. (Barred Rocks), 26; C. E. Hyde, 26; O. A. C., 26; Henry Struve, 26; Hanson, 26; W. J. Neef, 26; Alex Stewart, 26; Geo. Gray, 26.

The flock as a whole made an average production of a little over 60 per cent, which represents an average per hen of 18.6 eggs. All birds unless otherwise indicated are S. C. White Leghorns. Fractional figures result from dividing floor eggs by the three entries in each pen.

Barley was substituted for oats in July as the sprouted grain due to the poor quality of the available supply of oats. The approximate feed consumed daily per 100 hens was: Dry grain, 8.08 pounds; barley (sprouted), 4.34 pounds (dry weight); mash, 11.30 pounds, making a total of 23.72 pounds per 100 hens per day or 7.35 pounds per hen per month. The proportion of grain to mash fed both dry and sprouted was increased, resulting in a proportionate decrease in mash consumed.

NATIONAL EGG LAYING CONTEST

By T. W. Noland

Mountain Grove, Missouri: The 300 hens in the Tenth National Egg Laying Contest laid 4,989 eggs during July, or an average of 16.63 eggs per hen. Pen of S. C. White Leghorns owned by D. Tancred, Kent, Washington, won the cup for July by laying 122 eggs during the month. The ten leading pens for July are: S. C. White Leghorns, Washington, 122 eggs; White Wyandottes, Missouri, 119; S. C. White Leghorns, Missouri, 115; R. C. Barred Rhinelanders, Michigan, 111; S. C. White Leghorns, England, 109; S. C. Brown Leghorns, Missouri, 107; S. C. White Leghorns, Missouri, 105; S. C. Anconas, Missouri, 102; S. C. Anconas, Missouri, 101; Barred Rocks, Missouri, 101; Barred Rocks, Missouri, 101.

The ten leading pens to date are: S. C. White Leghorns, Missouri, 1,021 eggs; S. C. White Leghorns, Washington, 1,012; White Wyandottes, Missouri, 1,008; S. C. White Leghorns, England, 992; R. C. Barred Rhinelanders, Michigan, 934; S. C. White Leghorns, New York, 915; R. I. Whites, Illinois, 887; Anconas, Missouri, 882; S. C. Reds, Colorado, 871; Barred Rocks, Missouri, 870.

Sales value eggs average bird for July, 33 cents. Sales value eggs average bird to date, $4.33. Sales value eggs best pen for July, $2.44. Sales value eggs best pen to date, $33.90. Average price eggs during July, 24 cents per dozen.

ANNUAL POULTRYMEN'S MEETING

The meeting of stockholders of the Poultry Producers of Southern California was recently held in Los Angeles, President G. M. Davidson presiding. State Market Director Harry S. Maddox was present and extended heartiest congratulations to members because of the enterprise and aggressiveness of the management of the association. On the question of increasing the capital stock to $250,000 the vote showed there were 7,515 shares of stock voting, and all, excepting 46 shares in the hands of three members, voted favorably to the increase. As to building to be owned by the association it was stated that the board of directors had purchased site on the southwest corner of Industrial and Mill Streets. This property, 150 by 200, cost $42,500. Preliminary plans indicate a building is contemplated which will cost about as much more.

Several addresses were made in support of the policies of the association and steps taken which will doubtless result in material increase in membership.

Poultry Queries

(Conducted by Jean A. Koethen.)

Precocious Pullets

Three little pullets from prize winning Black Minorca stock were hatched April 7 and laid their first egg July 14 when they were just three months and a week old. These pullets were left motherless when they were ten days old and raised themselves for the most part with access to the wheat stack and all the milk they could drink in addition to greens and whatever else they could forage. Is not this a new record for early laying, and is it due to their breeding or to their feed? —Mrs. A. J. M., Bard.

I do not remember just what the record is for precocious laying, but it could hardly be much less than this. Exercise, green range and milk are ideal factors in the raising of chicks. Mrs. A. J. M. should remember, however, that if they are allowed to continue laying before they have their growth they will be spoiled for producers, at least for this fall. They have had too much protein and too little starch and fat, and they should now be put on a ration that will build frame and put enough fat on it to keep them laying through the fall and winter. Oats and corn are particularly good in such a ration. The oats might be sprouted and fed once a day and cracked corn made two-thirds of their grain ration in the evening. Then a conditioning mash, containing considerable corn meal, should be kept before them. The following formula has been used successfully: Wheat bran, 640 pounds; low grade flour, 200 pounds; ground wheat, 200 pounds; corn meal, 300 pounds; ground milo, 200 pounds; meat scrap, 50 pounds; ground green bone, 75 pounds; charcoal, 35 pounds; salt, 10 pounds. If this seems too complicated for so small a number of pullets, a simpler mixture, consisting of equal parts bran and corn meal, with about five per cent ground bone added, will do very well. Do not put them on a regular laying ration till they have attained their normal growth and are at least five months old. Pullets that lay when they are half grown will never reach their proper size.

Turkey Mother?

Can anyone beat this? I gave my neighbor a turkey hen from my flock to mate to her tom. In due time the hen began to go to the nest regularly every day but she never laid an egg. When she became broody she was given 15 eggs. She hatched 13 poults and has cared for them faithfully ever since.—Mrs. E. L. B., San Diego.

The mother instinct, it seems, is something entirely separate and distinct from reproduction. The question is why did that turkey go broody when she had never laid an egg? Somebody answer.

Sick Turkeys

Last week I lost a turkey hen and now another is sick. There is yellowish or greenish yellow diarrhea with fever toward the end. I have been giving a drop of ipecac night and morning, but with no results. I thought it was blackhead but neither hen has been lame.—Subscriber, Garden Grove.

That yellowish diarrhea indicates cholera rather than blackhead, according to Dr. Salmon's description: "The earliest indication of the disease is a yellow coloration of the urates or that part of the excrement which is excreted by the kidneys. This in health is a pure white, though it is frequently tinted with yellow as a result of other disorders than cholera, and in the later stages of the disease may change to greenish or even a deep green. Very soon after these symptoms appear the bird separates itself from the flock, it no longer stands erect, the feathers are roughened or stand on end, the wings droop, the head is drawn down toward the body

(Continued on Page 191.)

Lowest Prices Ever Quoted

On Titan and International Tractors

EFFECTIVE immediately, we make another big reduction in the prices of Titan and International tractors. These reductions wipe out all former advances and place **Titan and International tractors at the lowest prices at which they have ever been sold.**

International 8-16

$915 [With Special California Equipment]

This price is about one-fourth less than the price at which the 8-16 sold prior to March of this year. The new figure is the lowest at which it was ever sold. The new price includes all the necessary equipment — platform, fenders, governor, belt pulley — features which must be paid for extra on some tractors.

Titan 10-20

$900

This is the lowest price ever quoted on the Titan, considering the equipment now included (formerly sold extra). Up to March of this year the price was $1,200—today it is $900. At this figure the Titan 3-plow tractor is the best value in the farm power field.

The International 15-30 has been reduced to $1,750—lower than it has ever been before. The man who needs a 4-plow tractor cannot find a better investment than the 15-30 at this price. (All prices f. o. b. Chicago.)

Considering quality, power, equipment, and the service which follows every machine, Titan and International tractors at these new low prices are unquestionably the best buy in the tractor market.

As the prices have been made regardless of manufacturing costs, we do not guarantee to maintain them. These prices certainly justify the immediate purchase of a tractor. Put it at the horse-killing work of hot weather plowing, and your fall and winter belt work.

See our tractor dealer for full information on deliveries and terms.

INTERNATIONAL HARVESTER COMPANY OF AMERICA (INCORPORATED)

CHICAGO U.S.A.

92 Branch Houses and 15,000 Dealers in the United States

Los Angeles Markets

Los Angeles, August 17, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price 46 cents.

Prices Creamery Extras last week:

Aug.	10	11	12	13	15	16
'21 ...	46	46	46	46	46	46

CHEESE

Brokers' prices:
California flats, 20@22.

EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 41½; case count, 38; pullets, 36; pewee pullets, 24.

Extras last week and year ago:

Aug.	10	11	12	13	15	16
'21 ...	41	41	41	41	41½	41½

POULTRY

Price to producers: Hens, 26@29; colored, 33; broilers, 29@31; roasters, 30; old roosters, 14; fryers, 28; ducks, old, 12; ducklings, Pekin, 3½ up, 25; others, 25; geese, 25; turkeys, live, young tom, 50; dr., 55; old, live, 40; dr., 41; hens, live 40; dr., 44; squabs, 45@47.

Belgian hares, live, 11@14; old 8.

LIVESTOCK

Los Angeles, Aug. 16. — Weighed and delivered off cars without food or water:

Hogs (hard grain fed), 150 to 200 lbs., 12½.

Cattle (on foot, gross weight): Steers, good, 6.50; medium, 6.00; cows, good, 5.00; medium, 4.50; bulls and stags, 2.00; calves, 125 to 150 lbs., 8.00; 175 to 225 lbs., 7.00.

Sheep: Ewes, 5.00@5.50; lambs, 8.50@9.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock August 16, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies moderate, demand moderate, market steady. New stock: mostly 85@1.00 per lug, White Rose No. 1, sacked per cwt. mostly 2.50@2.75, poorer 1.75@2.25. Jobbing: White Rose No. 1, 2.25@2.50, mostly 2.25, poorer ungraded 1.50@2.00. Stocktons: Burbanks No. 1, 3.00@3.25, mostly 3.00. Sweet potatoes: Supplies light, movement slow, market steady. Locals: mostly 8@10 per lb.; No. 2 low as 4@6 per lb.

Onions: Supplies moderate, movement moderate, market firm; White Globe sacked per cwt. 3.00@3.25; old stock Browns mostly 90@1.00 sacked per cwt. Local: Whites 85@1.00, Browns 70@80 per lug.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock August 16, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Supplies liberal. Demand moderate, market seady. Per lb.: Kentucky Wonders mostly 4@5 per lb.; Green pods 3@4. Limas: Supplies moderate, movement slow, market steady, mostly 4.

Beets: Supplies moderate, market steady. Per dozen bunches mostly 35@40.

Cabbage: Supplies limited. Market steady. Per field crate 2.50, few 2.75; poorer 2.00.

Carrots: Supplies light, market strong, per dozen bunches mostly 35@40.

Celery: Supplies liberal, market stronger, per crate 5.50@6.00; few 6.25.

Corn: Supplies moderate, movement moderate, market steady. Local: Per lug, best mostly 65@85, few fy., 90; poorer 50.

Cucumbers: Supplies liberal, movement slow, market weak. Local: Lugs mostly 25@35; few best 40.

Eggplant: Supplies liberal, demand slow, lb. 3@4.

Lettuce: Supplies light, market firm. Local: Field crates mostly 90@1.00, poorer 75 per crate; fancy 1.10.

Peppers: Supplies heavy, market weaker. Locals: Bells mostly 5@6; Chilis mostly 2@4.

Radishes: Supplies light, market firm, mostly 20 per dozen bunches.

Squash: Supplies light. Demand and movement moderate, market steady, 40@50 per lug.

Tomatoes: Supplies moderate. Demand and movement moderate, market weak. Locals: No. 1, per lug, mostly 1.00@1.25, fancy 1.50, No. 2 50@75.

Turnips: Supply moderate. Market steady. Per dozen bunches 35@40.

FRESH FRUITS

Apples: New stock: Supplies liberal, movement slow, market weaker, mostly 50@60 per lug. Jobbing: Watsonville, fancy Gravensteins 4½ tier 2.50, 3½-4 tier 2.75 , Sebastopol B grade Gravensteins 2.55. Crabapples 1.50@1.60 per lug.

Cantaloupes: Market oversupplied. Demand and movement slow, market weaker, prices lower. Homegrowns: Tiptops, per crate 1.00@1.25, few best 1.50, Paul Rose 2.00@2.25. Turlocks: few sales, standards 45s, 1.25.

Figs: Supplies limited, market strong. Locals: 15@20; poorer 5@10; Northern Flats, Calimyrna, 1.00.

Grapes: Supplies liberal, movement slow, market weak. Wide range in quality. Thompson Seedless mostly 4@5@; Muscats and Malagas best 10@12, poorer 7@8; Tokays few 15 per lb.

Nectarines: Supplies moderate, movement slow, market steady, 4@5, few best 5½ per lb.

Peaches: Supplies heavy, movement slow, market weak. Wide range in quality. Lugs, Freestones mostly 75@1.00, poorer 40@60, few fancy 1.25, Clings fancy 1.10@1.25, poorer 50@75.

Pears: Supplies heavy. Demand moderate, market weaker. Bartletts 4@5, best 6, poorer 2@3 per lb.

Plums: Supplies heavy, market weak. Satsuma plums 4@5 lb.; Wicksons and Kelsey, 4@5; prunes, various varieties, 3@5.

Quinces: Lug, 1.00@1.25.

Watermelons: Supplies liberal. Demand moderate, market weak. Turlock section: Mostly 1¾ per lb: Locals: Klondikes, 1½@2½ per lb. Other local varieties 1½@2 per lb.

CITRUS FRUITS

Grapefruit: Supplies liberal, movement moderate, market firm. Local: Per box, market pack, 2.75@3.25, mostly 3.00; special packed brands 3.25@3.75.

Lemons: Supplies moderate. Demand moderate, market weaker. Local: Packed box mostly 6.00; market pack 4.00@4.50, loose box mostly 2.50@3.00, lug 1.00@1.25.

Oranges: Supplies moderate. Demand moderate, market firm. Valencias, best brands, all sizes, mostly 5.00@5.25, market pack, 3.00@3.50, loose pack 1.00@1.50, mostly 1.00@1.25.

HONEY

Supplies of old crop still on hand. New crop supplies moderate. Beter wire inquiry. Movement moderate, market firm on White Orange, steady on other varieties except Alfalfa, which is weak. Carloads f. o. b. usual terms at loading points. White Orange, new crop, supplies light, 8½@10, mostly 9½; Light Amber Alfalfa 5@5½, mostly 5; White Sage, old crop, 8@9, new crop 9@10; Light Amber Sage, old crop, 7, new crop 7@7½. Alfalfa bloom poor and unfavorable. Climatic conditions have cut down the Alfalfa honey crop. Beeswax: Supplies heavy, demand light. Crude wax offered by dealers at 22@27, mostly 25 per lb.

GRAIN AND FEEDS

Grain Exch. price bid August 16:
Corn: Bulk No. 2 Yellow, 1.57½.
Milo: Eastern 1.65.
Bran: Kansas, 25.25.
Barley: Carloads, 1.26¼.

HAY

Alfalfa Growers of California report:

Better demand for alfalfa hay, mentioned in our last letter continued throughout the week. Most of the district offices report a fair volume of local sales at materially better prices than central markets.

Receipts in Los Angeles showed further reduction during the week and grain hay fell off even more. Sales could be increased considerably by giving long credits or agreeing to long drawn out deliveries, but since the only object of growers in selling at present ruinously low prices is to raise money for their immediate wants, they do not show much interest in these offers. The use of alfalfa hay as fertilizer, which up to this year had been confined to a few of the orange districts, is extending rapidly to other sections which have recently absorbed all the damaged and low grade hay available without filling the demand. In addition we were informed that growers in one of the important deciduous fruit districts were considering the use of alfalfa as fertilizer on a large scale and wanted us to take the matter up with them. The Redlands orange district which was one of the first to take up alfalfa hay as fertilizer and therefore has several years experience in the use of it, is now offering $16 a ton grove delivery. Last year as high as $23 was paid there. The government crop report issued last week gives the production of hay in the United States this year as 92 million tons, as against 107 million tons last year.

There were 840 tons of grain and alfalfa hay received on the Los Angeles tracks the week ending August 13, with 60 tons held over.

Prevailing prices last week f. o. b. Los Angeles:

No. 1 Dairy	19.00
Standard Alfalfa	15.00

Quotations by Nichols - Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots: handling and commission must be added to obtain retail prices on new hay:

Tame Oats	18.00@26.00
Barley	16.00@24.00
Alfalfa, No. 1 Dairy	20.00
Standard	16.00
Straw	8.00

San Francisco Markets

San Francisco, August 16, 1921.

Quotations made daily by San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

BUTTER

Dairy Exchange quotations August 16:
Extra Choice 44½

Dairy Exchange prices extras this week and year ago:

Aug.	10	11	12	15	16
'21	43½	43½	44	44½	44½

Rcts. for Aug. 15, 303 centals.

CHEESE

Dairy Exchange quotations:

Jack, full cream, street prices	14½@16
Oregon, Y. A.	25½
Oregon Trips	23
Cal. Flats	21
Cal. Y. A.	27

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases, August 16:

Extras	45
Extra Firsts	43
Extra Pullets	38
Pullets, Extra Firsts	37½
Undersized	27

Prices Extras last wk. & yr. ago:

Aug.	10	11	12	15	16
'21	45	45	45	45	45

Rcts, for Aug. 15, 58,830 dozen.

POULTRY

Wholesale prices are:

Young chickens: Leghorns, 1 to 1¼ lbs. 28@30; 2 lbs. and up, 36; heavy breeds 1½ to 1¾ lbs., 28@31; 2 lbs. and up, 44@48. Staggy roosters, 21@26; old roosters, Leghorns, 15; do, heavy breeds, 18. Hens, Leghorns, large, 20; do, small to medium, 17@20; heavy breeds, 30@32.

Ducks: 18 per lb., geese 25 per lb.; turkeys, live, 35; dressed, 45@50; Belgian hares, live, 13@14; dressed, 18@20; squabs, fancy, 35; do, common, 2.50 per dozen.; old pigeons, 2.00.

LIVESTOCK

Western Meat Company quotes:

Cattle: Steers, No. 1, 5½@6; do, second quality, 5@5½.

Cows and Heifers: No. 1, 4½@5; do, second quality, 4@5.

Calves: Light weight, 7@8; heavy, 5½@6½.

Sheep: Wethers, 3½@4; ewes, 2½@3.

Lambs: Milk, 6@6½.

Hogs: Hard, fat, grain fed, weighing 125 to 200 lbs., 13½; do, 200 to 250 lbs., 12½; do, 250 to 350 lbs., 11½; light sows, 11½; heavy, 10½.

POTATOES AND ONIONS

Wholesale prices:

Potatoes: Old crop, nominal; New, garnets, 1.25@1.50 per 100 lbs.; do, white, 1.90@2.15. Sweets, Coachella Valley, 5@12½ lb.; Merced, 6@7.

Onions: Australian brown, nominal; crystal wax, nominal; new reds, 1.25@1.50; do, yellow, 1.75@2.50.

Green Onions: 1:50@1.75.

Garlic: 6@8 per lb.

VEGETABLES

Wholesale selling price:

Artichokes: Crate, 4.00@10.00.

Beets: 1.75@2.00 per sack.

Beans: Kentucky Wonder, 7@9 lb.; garden, 10@11 lb.; Italian, 12@13 lb.; Lima, 10@12; wax, 4@8; Blue Lake, 10.

Carrots: Sk., 1.25@1.50.

Celery: New crop white, 5.50; yellow, 6.50 per cr.

Corn: Alameda, 3.50@4.50 per crate of about 9 dozen ears; 2.00@4.00 per sack.

Cucumbers: 50@75 lug; English 2.00 bx.

Eggplant: Lb., 6@8.

Lettuce: Crate 2.00@2.25.

Okra: 7@10 lb.

Peas: Lb., 5@7; fcy., 7@10½.

Peppers: Bells, 10@13; Chili, 15@20.

Spinach: Lb., 2@4.

Tomatoes: San Pedro, 1.50@1.75 per lug, 1.25@1.75 per crate; Stockton, 1.50@1.75 per lug; Merced, 1.50 per small lug; flats, 50@1.00.

FRESH FRUITS

Apples: Red Astrachan, 4-tier, 1.50@1.75; 4½-tier, 75@1.25; Alexanders, 3½-tier, 2.00@2.35; 4-tier, 1.25@1.50; 4½-tier, 1.25@1.50; White Astrachan, 3½-tier, 2.00@2.25; 4-tier, 1.50@1.75; Gravenstein, lug, 75@1.00; 3½-tier, 2.00@2.75; 4-tier, 2.50; crab, 1.25@2.25.

Apricots: 50@1.00 per lug; fcy., 6@6½.

Avocados: California, doz., 3.00@5.00; large, 6.00@8.00; Fla., 5.00@7.00.

Bananas: Lb., 8½@10.

Blackberries: 30@35 per drawer; cr., 50@60.

Cantaloupes: Imperial, nominal; Turlock, 75@90; do, ponies, 30@50; flats, 25@50; Honey Dew, 1.25@1.75 per crate; flats, 50@65; casabas, 1.00@1.25 per crate, 1½ per lb. Persian melons: Southern, 1.00@1.50; Modesto, 2.50.

Figs: Black, single layer, 50@1.00; double, 1.50@2.00; White single 50@90; double, 1.50@2.00.

Gooseberries: 7@8 lb.; English, 15 lb.

Grapes: Per crate: Seedless, 90@1.00; Tokay 1.50@1.65; black, 1.50@1.65; Malaga 1.50@1.75; Muscat, 1.50@1.75 per large lug; seedless, 1.25@1.75.

Huckleberries: 18@22.

Nectarines: Wrapped, 1.50@1.75 per 20-lb. box; unwrapped, 1.25; Sacramento river, 2.00 per crate; No. 2, 1.50@1.75.

Peaches: 40@65 basket and small lug; large lug, 75@1.25; El Dorado Co., 75@1.25.

Pears: Bartlett, 3.00@3.25 wrapped; other grades 1.00@2.00.

Plums: Santa Rosa, 50@1.00 per crate; other varieties, 50@1.00 per crate, 1.00 per lug; egg plums, 50@90.

Prunes: Cr., 1.50.

Raspberries: 60@75 per drawer; some 85.

Strawberries: First carload shipped to San Jose last week. Peninsula and Watsonville, 50; Watsonville cr., 1.00; Salinas, 1.20@1.40 per crate.

Watermelons: 1¼@1¾ per lb.

CITRUS

Citrus Fruits: Valencia oranges, 4.00@5.50. Lemons: Fancy 6.00@7.00; choice, 3.50@5.00 per box; lemonettes, 2.50@4.00. Grapefruit, 3.50@4.50.

DRIED FRUITS

Prices have been named on peaches, figs and apricots by the associations; prune prices not yet named. Sales Manager Wallace of the California Prune and Apricot Growers writes that they will not be for three or four weeks.

Apples, 1921. (Packers' Quotations):

Choice (in 50s)	10¼
Extra choice (in 50s)	10½

Apricots, 1921 (California Prune and Apricot Growers) Bulk Basis:

	Sun-sweet	San Joaquin
Standard	12	10½
Choice	16	13½
Extra Choice	17	14½
Fancy	19	15½
Extra Fancy	21	...

Peaches, 1921 (California Peach and Fig Growers), Sept.-Oct.-Nov. shipment, guaranteed to January 1:

	Yellow	Muir
Slabs (in 50s)	@9	...@...
Standard (in 50s)	@9¼	...@9½
Choice (in 50s)	@9 7/8	...@...
Fancy (in 50s)	@11	...@12
Extra fancy (in 50s)	@12	...@13
Practically Peeled—		
Standard (in 50s)	@10¼	...10½
Choice (in 50s)	@10 7/8	...@...
Fancy (in 50s)	@12	...@13
Extra fancy (in 50s)	@13	...@14

Cartons, 30 11-oz., per case	3.10
Cartons, 60 11-oz., per case	6.00
Cartons, 24 2-lb., per case	6.50
Cartons, 10 5-lb., per case	6.60

Figs, 1921 (Cal. Peach and Fig Growers), Sept.-Oct. shipment, guaranteed to Jan. 1:

White—	
Standard (in 50s)	6½
Choice (in 50s)	8
Fancy (in 50s)	10½
Bricks, 12 No. 10s	1.10
Bricks, 24 No. 8s	1.80
Bricks, 50 No. 6s	2.80
Bricks, 70 No. 4s	2.95
Layers, 10-lb., 4-row	1.60
Layers, 10-lb., 5-row	1.40
Calimyrna—	
Standard (in 50s)	7½
Choice (in 50s)	10½
Fancy (in 50s)	13
Bricks, 24 No. 8s	2.05
Layers, 10-lb., 6-row	1.90
Black—	
Standard (in 50s)	6
Choice (in 50s)	8
Fancy (in 50s)	11

Prunes, 1921 (Packers Quotations):

Size	Basis Price	Per lb. in 25-lb. Boxes
30-40s	8½@ 8¾	12¼ @12½
40-50s	7 @ 7¼	10¼ @10½
50-60s	5½@ 5¾	8¼ @ 8½
60-70s	4¾@ 5	7 @ 7¼
70-80s	4½@ 5	7 @ 7¼
70-80s	4½@ 4¾	6¼ @ 6½
80-90s	4¾@ 4½	5½@ 5¾
90-100s	4½@ 4½	5 @ 5¼

Raisins, 1920 (Cal. Assoc. Raisin Co.):

Prices on the unsold portion of the 1920 raisin crop, effective August 1 to September 10, announced by California Associated Raisin Company at Fresno. It was announced further that opening prices on the 1921 season crop will be at least one-half cent a pound higher.

Muscats, Sun Maid seeded, 36-15 ounce to case, 14 cents a carton.

Sun Maid bakers, bulk seeded in 25 pound cases, 12½ cents a pound.

Sun Maid, one crown loose in 25 pound cases, 13 cents a pound.

Thompsons—Sun Maid, bulk in 25 pound cases, recleaned, 13½ cents a pound.

Sun Maid bakers, in 25 pound cases, 14 cents a pound.

Sultanas, bulk, in 25 pound cases, recleaned, 13 cents a pound.

Bleached Thompsons—Soda Thompsons, in 25 pound cases, 15 cents a pound.

Oil dipped Thompsons, in 25 pound cases, 15 cents a pound.

Sultanas, soda dipped, in 25 pound cases, 14½ cents a pound.

Oil dipped in 25 pound cases, 14½ cents a pound.

Layers, three crown, 20 pound boxes, $2.90 a case; ten pound boxes, $1.50 a case; five pound boxes, 80 cents a case.

All prices are quoted f. o. b. Pacific Coast mail points on regular California dried fruit contract terms.

BEANS

Below California Bean Growers Association shippers prices choice recleaned:

Large Whites	4.85
Small Whites	4.30
Pinks	6.60
Mexican Reds	7.40
Red Kidney	9.50
Henderson Bush	4.00
Cranberries	5.50
Bayos	7.50
Blackeyes	6.00

HAY AND FEED

Alfalfa Growers of California state that prevailing prices f. o. b. S. F. are:

No. 1 Dairy	15.00
Standard	14.00

Under date of August 6, A. W. Scott Co. says:

Receipts during the week were 2,353 tons as compared with 2,329 last week. The continued heavy arrivals with the light demand has kept the market in a very sluggish condition and prices have been easier on all grades. It is encouraging to note a little increase in volume in almost all branches of the business. General trading through the country has been a little more active, shipments both for export and coastwise have been a little heavier, and even in the city itself the general movement of business seems to have picked up. The period of severe depression seems to have passed and even those who are unable to move their crops or to handle their stocks of hay or grain seem to be looking forward to an early revival of heavier movement. Building activity is improving daily in San Francisco, and with it the draying and transportation business. Alfalfa continues dull and weak with offerings in excess of the demand. There is not much change in the price, however, as holders seem to prefer keeping their stocks awhile rather than sacrifice below the current figures. Less alfalfa is being ground this year than for several seasons, the extremely dull eastern market interfering severely with the usual movement of alfalfa meal.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers charges of switching, cartage, commission and handling expenses must be added according to conditions)

Wheat Hay, No. 1	15.00@18.00
Wheat Hay, fair grade	13.00@15.00
Tame Oat Hay	12.00@15.00
Wild Oat Hay, new crop	10.00@12.00
Barley Hay	10.00@12.00
Alfalfa Hay, 2nd and 3rd cutting	12.00@14.00
Alfalfa Hay, 1st cutting	9.00@11.00
Stock Hay	8.00@10.00
Barley, Ground	31.00@33.00
Barley, Rolled	27.00@28.00
Oats, Rolled Feed	30.00@32.00
Bran and Millrun	30.00@32.00
Middlings	40.00@43.00
Linseed Meal	36.00@38.00
Coco Meal	22.00@25.00
Alfalfa Meal	22.00@24.00
Cottonseed Meal	35.00@40.00
Sugar Beet Pulp	32.00
Molasses, Tanks	21.00
Molasses, Bbl.	25.00
Milo	40.00@45.00
Corn Meal and Cracked Corn	40.00@45.00
Scratch Feed	46.00@48.00

GRAIN

Wheat: Milling, 1.90@1.97½; feed, 1.75@2.00.

Barley: Feed, 1.20@1.30; shipping, 1.30@1.45.

Oats: Red Feed, 1.25@1.35.

Corn: California yellow, 1.55@1.60; Eastern yellow, 1.55@1.60; white Egyptian, 2.20@2.30 per cental; California red milo, 2.00@2.10; Eastern red milo, 1.85@1.95; Eastern kafir, 1.75@1.80.

Citrus Markets

Los Angeles, Aug. 17, 1921.

Heavy receipts of Valencias in eastern market centers have caused drop in the price of 25 to 50 cents per box. Nearly 1,000 cars have been leaving California each week. Latest estimates show about 7,000 cars remaining for shipment.

Lemons are still meeting good demand. Eastern stocks are fairly well cleaned up so that the market is clear for new arrivals. Cooler weather generally over the East has somewhat depressed prices. There are 60,000 boxes of foreign lemons on hand for sale within the next 30 days.

Shipments

Shipments of citrus fruits to date since November 1, 1920, Southern California: Oranges, 34,841 cars; lemons, 9,775; total, 44,616. To same date last season: Oranges, 27,001; lemons, 6,986; total, 33,987. From Central California to date this season: Oranges, 6,644; lemons, 212; total, 6,856. To same date last season: Oranges, 5,377; lemons, 289; total, 5,666. From Northern California to date this season: Oranges, 305; lemons, 5; total, 310. To same date last season: Oranges, 261; lemons, 23; total, 284.

AT THE AUCTIONS

August 10

New York: 28 or., 2 mixed, 6 lem. Val. 4.30-8.00, lem. 2.00-4.10, grapefruit 2.85-3.55.

Boston: 10 or., 5 lem. Val. 5.55-7.20, grapefruit 4.50-5.85, lem. 1.65-4.45.

Cleveland: 3 or., 3 lem. Val. 4.00-5.65, lem. 1.45-3.75.

Philadelphia: 10 or., 6 lem. Val. 4.30-6.40, lem. 90-4.15.

Pittsburg: 9 or., 7 lem. Val. 3.30-5.35, lem. 1.50-4.05.

St. Louis: 3 or., 3 lem. Val. 2.15-5.35, lem. 1.35-3.50.

Cincinnati: 2 or., 4 lem. Val. 5.40-6.20, lem. 2.10-6.25.

August 12

Boston: 7 or., 2 lem. Val. 5.40-6.95, lem. 2.30-3.75.

Philadelphia: 5 or., 3 lem. Val. 3.70-6.25, lem. 2.00-4.45.

Pittsburg: 3 or., 1 lem. Val. 3.00-5.15, lem. 2.25-2.45.

Cleveland: 3 or., 2 lem. Val. 3.75-6.45, lem. 1.85-3.75.

St. Louis: 2 or., 3 lem. Val. 4.55-6.05, lem. 1.55-3.05.

Cincinnati: 1 or., 3 lem. Val. 5.60-5.65, lem. 1.65-3.50.

New York: 18 or., 4 lem. Val. 4.10-7.55, lem. 1.75-4.75.

August 15

Boston: 16 or., 5 lem. Val. 4.45-6.85, lem. 1.85-5.20.

Cincinnati: 2 or., 4 lem. Val. 5.65-6.45, lem. 1.15-4.80.

Cleveland: 4 or., 4 lem. Val. 4.90-6.00, lem. 1.25-3.70.

New York: 42 or., 2 grapefruit, 6 lem. Val. 3.95-7.90, lem. 1.75-4.75.

Pittsburg: 3 or., 4 lem. Val. 4.80-6.80, lem. 1.40-3.00.

Philadelphia: 14 or., 5 lem. Val. 4.35-6.25, lem. 1.10-3.45.

August 16

New York: 29 or., 4 lem. Val. 3.75-8.00, lem. 2.65-4.30.

Boston: 8 or., 4 lem. Val. 4.25-6.20, lem. 1.60-3.15.

St. Louis: 2 or., 1 lem. Val. 4.00-5.60, lem. 3.15-3.55.

Pittsburg: 1 or., 1 lem. Val. 5.60-6.45, lem. 1.90-2.40.

Philadelphia: 7 or., 5 lem. Val. 3.60-6.30, lem. 1.65-3.60.

CALIFORNIA CATTLEMEN'S MARKET REPORT

During the past week Eastern markets have again advanced an average of one-quarter of a cent. The Chicago market is now paying 9½ cents for the bulk of the steers being received. Information received from the seven largest corn feeding states in the Middle West indicates that comparatively few cattle are being fed this year. The estimate seems to be that about 10 per cent of the normal number of cattle are being fed. During the past three or four days, however, a very strong feeder market has developed at Kansas City, which is a very encouraging indication. Recent sales are reported as bringing 5½ cents for cows f. o. b. ranch and 6½ cents for steers f. o. b. ranch. San Francisco market remains steady. Quite a few contracts are being completed for the delivery of steers at 7½ cents and cows at 6½ cents. First shipments of cattle have begun from Modoc and Lassen Counties, and shipments are increasing from Shasta County. The demand continues strongest for lighter steers, although they must be in prime condition. The average carcass this year is 54 pounds lighter than it was last year. Do not sell half fat cattle, and do not ship on commission.—R. M. Hagen, Secretary.

CALIFORNIA CATTLEMEN'S ASSOCIATION REPORT

San Francisco, Aug. 15, 1921.

Sales of cattle reported during the past week in central California show cows bringing 5 to 5½ cents and steers 6 to 6½ cents f. o. b. ranch. Sales in the northern part of the state are for 4½ to 5 cents for cows and 5½ to 6 cents for steers f. o. b. ranch.

Most of the sales made thus far in the northern part of the state have been heavy cattle, lighter weights having not yet been very largely offered for sale.

Additional information received from southern Oregon confirms previous reports that approximately one-half the normal number of cattle will be marketed from there this fall, the bulk being ready for some time between September 15 and October 1. Reports from Nevada are to the effect that less cattle will be marketed this year than last, beginning about September 15.

In spite of existing shortages of cattle in other states, practically a normal number are being sent to market, which in a large number of cases is seriously depleting, if not completely exhausting, individual herds of cattle. This condition is a result of the banks forcing the liquidation of debts. The result of this, of course, will be an increased shortage of cattle and a considerably higher future market.

Eastern prices continue steady, and the feeder market at Mississippi River points continues to improve. — R. M. Hagen, Secretary.

POULTRY QUERIES

(Continued from Page 189.)

and the general outline of the bird becomes spherical. There is great weakness, the affected bird becomes drowsy and may sink into a deep sleep from which it is impossible to rouse it. The crop is nearly always distended with food and apparently paralyzed and there is in most cases intense thirst. The course of the disease may be rapid or slow in its progress through the flock. It may take all within a few days or the fowls may drop off by twos and threes through a period of several weeks." All authorities agree that the yellow or green diarrhea is a characteristic symptom of cholera, while in blackhead it is whitish. Another reason for believing this is cholera rather than blackhead is that adult turkeys seldom if ever die so quickly with blackhead. With them the progress of the disease is very slow, and they are likely to grow thinner and weaker for several weeks before the end.

The only treatment the poultry division recommends for cholera is a thorough cleaning of the premises and the use of 1/5000 bichloride tablet in the drinking water daily. If possible the birds should be removed to clean ground.

COMING EVENTS

Eden Township Farm Products Show, Hayward, August 11-14.
Petaluma Egg Day and Rodeo, Petaluma, August 20-21.
North of Bay Counties Fair, Santa Rosa, August 24-28.
Downey Community Fair, Downey, August 25-27.
Yuba County Agricultural Fair, Browns Valley, Aug. 29-31.
Vintage Festival, St. Helena, September 3-5.
California State Fair, Sacramento, Sept. 3-11.
Fall River Fair, McArthur, September 7-9.
San Joaquin County Fair, Stockton, September 12-17.
Tulare County Livestock and Agricultural Show, Tulare, Sept. 13-17.
Humboldt County Fair, Ferndale, Sept. 13-17.
San Fernando Valley Fair and Market, San Fernando, Sept. 19-24.
Glenn County Fair, Orland, Sept. 19-24.
Kings County Fair, Hanford, Sept. 19-24.
San Diego County Fair, San Diego, Sept. 21-24.
Fresno District Fair, Fresno, Sept. 26-Oct. 1.
Orange County Fair, Huntington Beach, Sept. 28-Oct. 1.
Arbuckle Almond Show, Arbuckle, Sept. 28-Oct. 2.
Inyo County Fair, Bishop, Oct. 4-5.
National Swine Show, Springfield, Illinois, Oct. 3-8.
Ventura County Fair, Ventura, Oct. 5-8.
Shasta County Farm Bureau Fair, Anderson, October 6-8.
Southern California Fair, Riverside, Oct. 11-16.
California Association of Nurserymen Annual Convention, Exposition Park, Los Angeles, Oct. 20-22.
California Flower and Horticultural Exhibition, Exposition Park, Los Angeles, October 20-26.
Date Festival, Coachella Valley, Oct. 21-23.
California National Livestock Show, San Francisco, Oct. 22-30.
Pacific International Livestock Exposition, Portland, Oregon, Nov. 5-12.
Stanislaus County Poultrymen's Association Show, Modesto, Dec. 4-7.

Aspergillosis?

Recently I have lost 36 turkeys ranging in age from three weeks to six months. They have free range on alfalfa and are fed a very little corn. At first they hold their heads back as far as they can, then just starve to death. Inside their crops I find many wart-like growths ranging in size from a pea to a small shot and white in color.—Subscriber, El Centro.

Those white wart like growths may come from mold spores in the corn. Have you examined it carefully to make sure that it is perfectly clean and sweet? Corn is not a good diet for turkeys until they are ready for fattening, and if it has been heated or has in any way become moldy it is certain to cause trouble. Better use rolled or whole barley and bran for the birds over two months old and keep the younger ones on hard boiled egg and rolled oats mixed with an equal amount of cut green alfalfa.

Pendulous Crop

The crops of my young turkeys hang down till they almost touch the ground. The birds are confined in a large lot with growing alfalfa for greens, have whole barley and gyp corn at night, soaked barley in the morning and sour milk at noon, also oyster shells. Could this condition be caused by lack of grit, and is there any cure?—Subscriber, Strathmore.

As you say your soil contains almost no sand or gravel, it may be lack of grit has something to do with the condition of the crops. On a granite soil shell alone is sufficient, because the birds pick up gravel, but where they have no gravel they need grit, and on all soils should have it the first two months. It is safest to mix chick grit with the feed from the first day till the poults are old enough to pick up gravel. Another cause of pendulous crop is occasional overfeeding. If the crop of the little turkey is stuffed as full as it can be just once it is stretched a little. If this happens again, the stretching is increased and before you know it a pendulous crop has resulted. The birds should not be allowed to fill their crops once the first two months. After this age, if they have had grit with every meal, the crop has acquired sufficient strength and elasticity to be filled without stretching. Now all you can do is to bandage it quite firmly, leaving room, of course, for a meal, but not permitting the crop to be filled. I have heard of cases where this treatment worked a cure. It is possible, also if you have the skill, to cut a piece out of the crop and sew up the opening, but not everyone can perform this operation successfully.

Pendulous Crop Again

I have a young turkey whose crop is much enlarged and very soft. This is one of a brood that have made their own way without a mother since they were three weeks old, and I do not think they can have been overfed. This bird seems perfectly healthy otherwise.—Subscriber, San Jose.

You are right in thinking pendulous crop is not a disease. As I explained above, stuffing the crop to the limit even once when the bird is small may stretch it so much that it never quite recovers its normal size. Please note suggestions above as to treatment.

More Turkey Queries

A Whittier subscriber sends the following questions, which I will answer by number:

1. Would a turkey that had been cured of blackhead be suitable for a breeder? 2. My little turkeys take great mouthfuls of clean dust or small clods. What food element are they lacking that makes them do this? 3. My baby turkeys are kept on cement floor with the mother hen in a small coop placed on heavy tar paper which is frequently washed and dried. Clean straw is scattered on floor and in coop at night. Are these conditions favorable? The poults are out on the ground in all pleasant weather. 4. Do turkeys ever contract tuberculosis? 5. Is bone meal in small quantities a suitable ingredient in baby turkeys mash?—Subscriber, Whittier.

1. As the blackhead germ is believed to be always present in the intestines of all turkeys, I do not see why a turkey that has been cured of blackhead would not be as fit a breeder as one that had never been sick, provided, of course, that the cure is complete and the bird shows all signs of vigor. 2. I do not know. Are they supplied with grit in every meal? As baby turkeys do not know how to forage it is best to sprinkle a little chick grit over their food until they are six weeks old, and to keep grit before them in a box or pan as well. If you are satisfied that they do not lack grit, how about greens, which contain sulphur and other mineral elements which are found in the soil. Half of every meal given a baby turkey should be cut greens, preferably alfalfa or onions or onion tops. I should not think of trying to raise turkeys without onions, and they ought to have alfalfa as well. 3. I see no objection to tar paper if it is clean, but should prefer a coop with a wood bottom which can be washed with the hose every day. Cover the bottom with clean dirt or straw after it is dry. Some breeders believe poults should be on the ground in a coop which is moved every day, but in damp weather it is not possible always to have it dry under foot if they are on the ground. A board floor covered with clean dirt or sand or straw would seem to meet all requirements. 4. I never heard of a turkey having tuberculosis, but do not see why they should not contract it if they were with tubercular chickens. As a rule they are less susceptible to most diseases than chickens. 5. Bone meal is excellent in a mash for little turkeys after they are six weeks old, but my experience is that they do just as well on plain bran and rolled barley.

Vent Gleet

What is the cause of vent gleet, and how can it be cured?—Subscriber, Watsonville.

The cause of vent gleet is not fully understood. Undoubtedly it is a real venereal disease of poultry, and it seems to originate with a hen and to be passed on by her to the male and from him to the rest of the flock. This is the treatment suggested: Give 30 grains Epsom salts, and twice a day inject first a 4 per cent solution of cocaine and immediately afterward a solution of nitrate of silver, 4 grains to the ounce. The fifth day commence a small copaiba capsule daily, and inject acetate of lead, 1 drachm to the pint. Feed low and dust any sore places outside with iodoform. Personally, I would rather kill the bird than undertake such a troublesome treatment, for no bird that has ever had this disease is fit for a breeder afterward, and the disease is quite contagious.

Sunflower Seed

Are sunflower seeds beneficial during the molt?—Subscriber, Watsonville.

Sunflower seeds are excellent for molting hens, since they contain a good deal of protein, and may be fed as freely as as is consistent with their cost.

Lice on Turkeys

Will you kindly tell me how to rid young turkeys of lice?—Subscriber, Madera.

Dust over heads, under wings and around vent every week with Buhach insect powder, and you will never have a louse.

Line Breeding

Will you tell me how long chickens can be line bred successfully? I have a heavy laying strain of White Wyandottes, and fertility is very low this year. Is this due to line breeding or to conditions this season?—Subscriber, Santa Paula.

All breeders except perhaps the most expert find it necessary to introduce new blood from time to time, but this must be done very carefully in order not to spoil the qualities for which the stock has been bred. Your best plan would be to go to an experienced breeder of White Wyandottes and ask him to sell you either a male or a couple of hens in which type and color "nick" with the bird or birds you wish to mate. Some prefer to introduce new blood through a male and some through the female line. If line breeding is continued too long, or the birds are too closely inbred, infertility does result, and this is no doubt the reason why eggs from show stock are so often disappointing.

WEATHER REPORT

San Francisco, Cal., August 13, 1921.

Stations	Wk.	Season	Norm.	Max	Min.
	Rainfall			Temp.	
Eureka	.00	.00	.13	60	50
Red Bluff	.00	.00	.00	94	58
Sacramento	.00	.00	.00	88	52
San Francisco	.00	.00	.01	65	52
San Jose	.00	.00	.01	78	48
Fresno	.00	.00	.00	102	58
San Luis Obispo	.00	T	.03	82	50
Los Angeles	T	T	.00	82	57
San Diego	T	T	.00	74	70

Tire Economy

Horse Shoe Cords Outwear Two Ordinary Tires

DEALERS OF SOUTHERN CALIFORNIA

Placentia—Schumacher's Garage.
Atwood—E. P. Francis.
Ontario—American Vulc. Works, 3rd and Thomas St.
Pomona—American Vulc. Works.
Uplands—J. Lynward Grahame.
Redlands—Home Oil Co.
San Bernardino—San Bernardino Rubber Works, 595 3rd St.
Riverside—Riverside Vulc. Works, 303 W. 8th St.
Indio—Indio Garage.
San Diego—Miller Motor Supply, 648 Market St.
Fullerton—Pitts & Wilkinson.
Torrance—Palmer & Stapelfeld.
Anaheim—F. W. James, 223 No. Los Angeles St.
Orange—E. G. Stinson.
Santa Ana—Santa Ana H. S. Tire Co., 417 No. Broadway.
Long Beach—Coombs & Tressler, 31 American Ave.; Jones Hardware Co., 1260 American Ave.
Gardena—E. A. Tepper
Pasadena—Pasadena H. S. Tire Co., 34 No. Union St.; H. W. Shafer, 30 W. Colorado St.
La Habra—Missouri Garage.
Brawley—Quick Service Vulc. Shop.
El Centro—Swinson Service Station.
Calexico—T. J. Northington, 228 Imperial Ave.
Westmoreland—L. W. Norman.
Imperial—H. V. Emblem.
Brea—Brea Garage.

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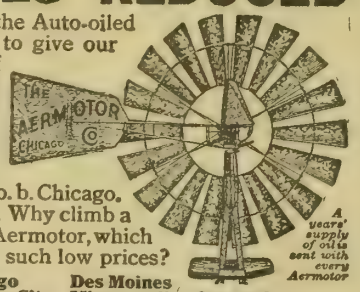

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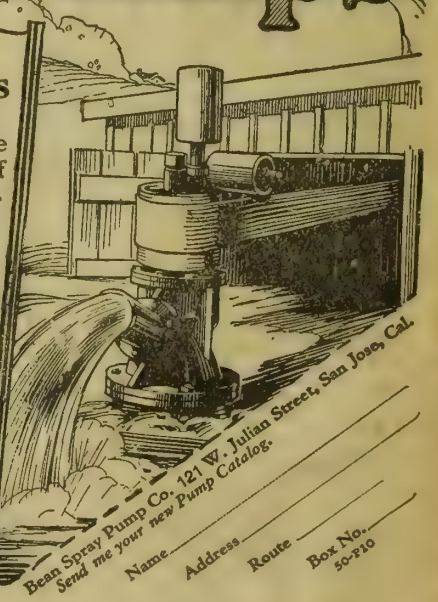

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

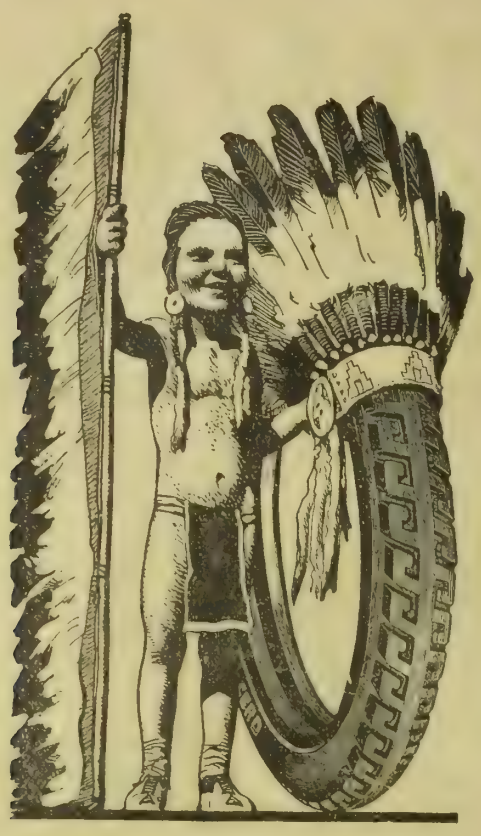
Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LVII — August 27, 1921 — No. 9

CALIFORNIA STATE FAIR, SACRAMENTO, SEPT. 3-11

Scenes at former state fairs. The larger center picture shows a small section of Thursday morning livestock parade. The Shorthorns and Herefords are in view as the photo is taken. Small upper left photo is of the fireproof Women's Building. The upper center is one of the drafters in full dress. Upper right, entrance to the tractor, machinery and farm implement section. The lower left shows a general view of Horticultural Building from balcony. Lower center, inside of tractor and implement tent. Lower right, amongst the porkers. The state fair begins Saturday, September 3 and continues until September 11.

THE NEW SAVAGE CORD



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2025 Bay St., Los Angeles, Cal.

California Cultivator

Vol. LVII, No. 9 | Los Angeles, August 27, 1921 | One Dollar Yearly

Come to California's Best State Fair

By Chas. W. Paine, Secretary State Agricultural Society

NEARLY every state in the Union boasts a state fair, and while some of the older Eastern state fairs surpass California in point of attendance, number of entries, investment in plant and premium money offered, it can be truthfully said that none are more representative of their state or serve their public more efficiently than does the California state fair.

The directors of the state agricultural society have long proceeded on the assumption that until the California state fair is participated in by every county it will be falling short of the 100 per cent state fair. Accordingly every effort has been made to have each county in the state represented, and it is with the greatest pleasure that we announce that more counties will take an active part this year than in the past. Thirty counties will be represented this year, more than 50 per cent of the 58, so the board feels that this year's show will mark progress toward the aim for a 100 per cent fair.

Chas. W. Paine

The board of directors likewise appreciates the fact that a properly organized and conducted fair presents a splendid opportunity to become an institution of educational value. Consequently advantage is taken of this responsibility and each year has seen a conscientious effort made to attract and effectively stage only such exhibits as are felt will prove of worth to the public of California.

The various county exhibits, reflecting as they do the agricultural and industrial resources of the county exhibiting, afford a striking opportunity to become familiar with the demonstrated and potential wealth of this state. Eastern visitors are unanimous in declaring that these county displays surpass anything seen at the great shows of the country.

The University of California, especially the college of agriculture, the state department of agriculture and the other state departments have, through their splendid exhibits, become distinguished and permanent factors in the success of the fair, and this year the United States department of agriculture has arranged for an extensive exhibit.

Within the past few years the participation of the agricultural implement firms, including the great tractor, truck and automobile concerns, has developed to such notable proportions that the California show is ranked among the best in the United States. The demand for space in that department has touched the highwater mark this year.

Perhaps the department that has shown the most marked growth and has caused the board as high satisfaction as any is the livestock department. The development of the livestock industry in California has been far in advance of our expectations a few years back and nowhere is the growth reflected more accurately than at the state fair. Indeed one of the most pressing problems of the fair management has been to provide room for the expanding entry lists in all divisions. Not only has this growth been confined solely to numbers, the most marked progress being in the quality of the livestock shown.

I do not hesitate to assure the public of a most unusual showing of livestock this year. The showing of the dairy breeds will be up to the usual standard, and that means the best dairy cattle show of the West and, for the first time in the history of the fair, distinguished Oregon herds of Guernseys and Ayrshires will compete with the best of this state.

The division registering the greatest development is the division of beef cattle. Indeed, it is common knowledge that this year's showing will be the strongest yet made in California and will include a number of herds not yet seen in this state.

The swine show will be entirely creditable despite the fact that earlier in the season it was feared this division would be light. More than 50 exhiibtors have applied for space.

The sheep show will be equal in every way to last year's showing, and I am told that the exhibit of milk goats will easily outdistance any yet made in central or northern California.

The draft horse department is expected to reflect the increasing interest now being given this tried and proven source of farm power. Among this year's entries appear several new exhibitors.

One of the popular features of the entire fair has always been the night horse shows, and so enthusiastic has been the support given this feature that the board of directors has left nothing undone to make this year's event even better than former years.

The amusement features of the fair have not been overlooked or overdone; just enough of high class entertainment has been provided to maintain interest without detracting from the dignity and educational value a state fair should have.

The entire board of directors and the management staff have labored since the close of last year's show in an effort to make the 1921 event hold a bigger and more vital part in the agricultural industry of California. How well we have succeeded will be judged by the thousands who will attend, and on behalf of the state agricultural society I extend a hearty and sincere invitation to all readers of the California Cultivator to be our guests.

DAILY EVENTS AT STATE FAIR

SEPTEMBER 3, SATURDAY.—9 a. m.; Gates open; all buildings and stock barns open. Student judging all day. Concert; Stanislaus County Cadet Band, Preston School of Industry Band, Sherman Institute Band.
1 p. m.: Races; Occidental Stake, 2:09 pace, three running races. 3: Free attractions in front of grand stand. Acrobatic acts, trick riding and Bucking Ford "Air Devil" Panghorn in upside-down flying stunts. Concerts.
8 p. m.: Free attractions in front of grand stand. 8:30: Dancing—Noack's Orchestra on lawn pavilion. 9: Fireworks.

SUNDAY.—9 a. m.: All buildings and stock barns open. 10: Band concerts.
1 to 5 p. m.: Band Concerts; Grass Valley Cornish Miners Glee Club. Free attractions in front of grand stand. Airplane stunts.
7:30 p. m.: Free attractions in front of grand stand. 9: Fireworks.

SACRAMENTO DAY—BUSINESS WOMEN'S CLUB DAY.—9 a. m.—Stock Judging; Shorthorn Cattle, Holstein Cattle, Jersey Cattle. Poland China Swine, Berkshire Swine. Band Concerts. 12: Business Women's Club luncheon.
1 p. m.: Races: 2:09 Trot, State Fair Futurity Pace, three running races. Free attractions in front of grand stand (same as Saturday p. m.). Band Concerts.
8: p. m.: California Jersey Breeders Association meeting—Assembly Room. Horse Show. 8:30: Dancing. Boxing contest (free attraction).

TUESDAY.—9 a. m.: Stock Judging; Hereford Cattle, Ayrshire Cattle, Dairy Shorthorn Cattle. Duroc-Jersey Swine, Hampshire Swine. Sheep. Band Concerts.
1 p. m.: Races. Free attractions in front of grand stand (same as on Saturday afternoon). Band Concerts.
8 p. m.: Pacific Coast Hereford Cattle Breeders' Association meeting in Assembly Room. Horse Show. 8:30: Dancing. 9: Fireworks.

WEDNESDAY, BUSINESS MEN'S CLUB DAY.—9 a. m.: Judging of Stock; Draft Horses. Guernsey Cattle, Aberdeen-Angus Cattle. Hampshire Swine. Band Concert. 11: Pure Bred Cattle Breeders' Association under direction of G. H. Hecke, State Director of Agriculture, Assembly Room.
1 p. m.: Races. Free attractions in front of grand stand. Band Concerts. 1:30: Central California Milk Goat Breeders' Association, Assembly Room. 3: California Guernsey Breeders' Association, Assembly Room.
7: California Guernsey Breeders' Association dinner, Assembly Room. 8: Horse Show. Dancing. Band Concerts. 9: Fireworks.

THURSDAY.—GOVERNOR'S DAY.—ROTARY DAY.—10:30 a. m.: Stock Parade. 12: Governor's Reception. Concerts by bands.
1 p. m.: Races. Free attractions in front of grand stand (same as on Saturday afternoon). Band Concerts. 5:30: Rotary Club dinner in Assembly Room.
8: Horse Show. Dancing. Boxing Contests (free attractions).

FRIDAY.—ADMISSION DAY.—FARM BUREAU DAY. — 10 a. m.: Band Concerts. Drill by Boy Scouts. Kennel Club Dog Show. Fruit Growers' Association meeting in Assembly Room, G. H. Hecke, presiding.
1: Races. 3: Athletic Contest—Pacific Coast Invitational Track and Field meet). Band Concerts.
8: Horse Show. Dancing. Fireworks.

SATURDAY. — 10:30 a. m.: Stock Parade. 10: Meeting of California Cattlemen's Association, Assembly Room. Meeting of California Sheriffs' Association. Band Concerts. Dog Show.
1 p. m.: Races. Dog Show. Free attractions in front of grand stand. Band Cencerts.
8: Horse Show. Dancing. Boxing (free atraction).

SUNDAY.—Morning: Band Concerts. Afternoon: Band Concerts. Free attractions in front of grand stand. Evening: Fireworks.

The State Fair

By M. C. Holman

THE big California state fair will soon be in full swing. For weeks chambers of commerce have been packing their choicest fruit; livestock has been fattened and curried; manufacturers whose products are of interest to agriculturists have been preparing suitable exhibits. Every floor has been scrubbed and every corner dusted; the livestock pens have been cleaned and whitewashed; the race track has been scraped and rolled; the big tractor tents have been put up and everything is on the qui vive for the opening.

As an institution of educational value the California state fair ranks high. It brings into one immense area the best of the state's products and is of tremedous inspirational value. Covering an area of 108 acres, it divides itself into a number of special departments each of which would make an exposition in itself.

There are great buildings to house the works of science and of industry, great tents to shelter the implements, vast stretches of pens holding the best animals the state produces and, finally, there is the great race track where thousands gather to watch the ponies scamper over the smooth course or to shudder at the daring feats performed on the turf and in the air.

Those who have found it impossible to visit the state fair in the past should serve themselves to this year's splendid show.

Let us walk within the grounds and get a mental picture of what this exposition will have for those who pass through the gates. Upon entering the fair grounds the flutter of banners, the

(Continued on Page 227.)

Established 1877 Forty-fourth Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

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Saturday, August 27, 1921

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

If among the more than 40,000 Cultivator's weekly circulation any fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

EDITORIALETTES

The cover page and other pages of this issue have reminders of the state fair at Sacramento and of sectional fairs from Shasta to San Diego. The cover page may be considered exclusively a state fair reminder for it shows scenes taken at Sacramento in other years. Along about the middle of September we hope to have some more scenes of this year's fair, "the best ever." We are saying that in advance as we have said after many of the former fairs, for it is perfectly true that each fair affords foundation for the building of a greater and better the next year. Fortunately our fair management is of the type that makes it possible for "the best ever" to continue to enter into the initial sentence of each year's fair account.

* * *

One of the best features of this issue is on the page, or rather pages, devoted to telling why "our county or district fair will be bigger and better than ever." That article is made up of a series of paragraphs written by secretaries or managers of the various fairs, and we trust there is a showing which will attract everybody within reasonable auto distance.

* * *

We think probably every community which will feature a fair this year has already made provision for auto camping parties. Why not load up Lizzie with a lot of tin things, a camp kettle or two, and take the whole family? The trip may be made the occasion of a lot of fun and material addition to the fund of agricultural knowledge, and prove profitable generally.

* * *

The War Finance Corporation announces it has approved an application from an important Southern banking institution for an advance of $5,000,000—to finance cotton, cotton seed cake, peanut cake, and naval stores, for export sale.

* * *

Agricultural Statistician E. E. Kaufman is now serving two masters, and most efficiently. This is made possible through the cooperative agreement between the bureau of crop estimates of the United States department of agriculture and the California department of agriculture, and to the end that this cooperation may be more complete, the office of the agricultural statistician has been transferred from the Custom House, San Francisco, to 1030 K Street, Sacramento. This is headquarters of the state department of agriculture.

* * *

The packer control bill is getting along amazingly by being reported in and reported out and reported sideways. Meantime packer control remains in the hands of the packers.

* * *

Of the nine companies on this continent which sell more than a billion kilowatt hours of electrical energy California has two. Neither of these two is the city of Los Angeles which has been charged with being a great monopoly, and this charge seems to have "stuck" with some farm bureau organizations until they have united in an effort which we believe will discourage cooperative handling of this great and everlasting power. California farmers should rub their eyes open to perceive the fact that their children's heritage is being bartered away while they are being used as a club to discourage the people's ownership of their own. The growth of the great concerns now largely controlling our "white coal" has been almost meteoric, and they must be encouraged, for the people are all too slow to take advantage of their opportunities. But let us not surrender all. We must act and act quickly.

* * *

Since the death of A. T. Currier, charter member, organizer and president from the beginning of the Los Angeles County Mutual Fire Insurance Company, former Senator Prescott F. Cogswell has been elected president of the board of directors.

* * *

These are days of "budgets." Why should not the housewife have her "canning budget"? Many a time has the housewife stood with arms akimbo in front of the canned fruit shelves and said: "Well, I wonder if there is enough jelly, enough preserves, enough jam and canned things?" Now is a good time to start the outline of the budget for next year's canning campaign. Observe month by month the sufficiency of the canned fruit and vegetable closet.

* * *

The Ohio experiment station has discovered that "It took the Roman farmer four and a half days of hard labor to raise a bushel of wheat; the American farmer does it in nine minutes." We would like to remind the experiment station folks that the farmer was not compelled to turn in and spend the rest of his time building battleships. However, we must admit that he had some few scraps of his own to settle in those good old days, so perhaps we must admit that we do things better than did the Romans of Caesar's time. But we do wish our peace makers would acquire some of the efficiency of the American farmer and get more peace at less cost.

AN AGRICULTURAL FAIR IS A GREAT EDUCATIONAL INSTITUTION

A county fair is a show window where the products of a certain section are shown to the public. A fair is as necessary to a county as a show window is to a merchant. In a spirit of friendly rivalry, the progressive ranchers, stockmen, merchants and manufacturers show their best in livestock, horticultural, agricultural and manufactured products. Such an exposition educates the public to the most advanced types, shows the progress that is being made and instills into the mind of the onlooker the desire to go back home and improve on past methods. As an educational institution—along broad lines—the county fair is without a rival.—J. Francis O'Connor.

COMING EVENTS

North of Bay Counties Fair, Santa Rosa, August 24-28.
Downey Community Fair, Downey, August 25-27.
Yuba County Agricultural Fair, Browns Valley, Aug. 29-31.
Vintage Festival, St. Helena, September 3-5.
California State Fair, Sacramento, Sept. 3-11.
Fall River Fair, McArthur, September 7-9.
Escondido Grape Day, Escondido, Sept. 9.
San Joaquin County Fair, Stockton, September 12-17.
Tulare County Livestock and Agricultural Show, Tulare, Sept. 13-17.
Humboldt County Fair, Ferndale, Sept. 13-17.
San Fernando Valley Fair and Market, San Fernando, Sept. 19-24.
Glenn County Fair, Orland, Sept. 19-24.
Kings County Fair, Hanford, Sept. 19-24.
Trinity County Fair, Weaverville, September 20-22.
San Diego County Fair, San Diego, Sept. 21-24.
Fresno District Fair, Fresno, Sept. 26-Oct. 1.
Orange County Fair, Huntington Beach, Sept. 28-Oct. 1.
Arbuckle Almond Show, Arbuckle, Sept. 28-Oct. 2.
Inyo County Fair, Bishop, Oct. 4-5.
National Swine Show, Springfield, Illinois, Oct. 3-8.
Ventura County Fair, Ventura, Oct. 5-9.
Shasta County Farm Bureau Fair, Anderson, October 6-8.
Southern California Fair, Riverside, Oct. 11-16.
California Association of Nurserymen Annual Convention, Exposition Park, Los Angeles, Oct. 20-22.
California Flower and Horticultural Exhibition, Exposition Park, Los Angeles, October 20-26.
Date Festival, Coachella Valley, Oct. 21-23.
California National Livestock Show, San Francisco, Oct. 22-30.
Pacific International Livestock Exposition, Portland, Oregon, Nov. 5-12.
Orange and Olive Exposition, Oroville, middle of November.
Stanislaus County Poultrymen's Association Show, Modesto, Dec. 4-7.

SOME RAISINS

Raisins sure are moving. Here is an Associated Press dispatch from Fresno under date of August 22: "After being photographed from engine to caboose, in which pretty Sun Maids in their famous costumes and Mayor Hart took part, the first shipment of five solid trainloads of raisins which are being rushed east, left over the Santa Fe railroad promptly at 9:30 this morning with a mighty cheer from California Associated Raisin Company officials and hundreds of employes and interested persons who were present to witness the ceremonies attending the first shipment of 15,000 tons of Fresno raisins to Eastern markets."

COOPERATIVE INSURANCE

Cooperative insurance is extending in California. At the recent annual of Farmers Mutuals held in San Jose greater attendance was given and there was more enthusiastic discussion of methods and policies of work than in any preceding year. This is partly due to an act of the last legislature giving greater power to these mutual companies. Heretofore $4,500 has been the extreme limit which one of these companies could take in one risk. The recent enactment, or rather amendment to the former enactment, permits almost unlimited extent in insurance carried by one company, provided it re-insures in other similar institutions all in excess of $6,000. This feature of the new law called for a conference of Southern California Mutuals which was held in Los Angeles last week, and committees were appointed to formulate plans of work, and, so far as possible by the delegates in attendance, the various companies decided to unite and take advantage of this law.

Cooperative insurance is making a great saving to the farmers of California, for the rates usually prevailing are about one-half those of the old line companies. In addition, all cooperation is being strengthened by these companies. There are now about a score of them in the state, the largest being those in Fresno and Los Angeles Counties, each of these carrying around $15,000 of insurance. Practically all of them now have a reserve fund sufficient to meet ordinary losses, and while an assessment is possible on all who become members of the organizations, this is so light when it does come and so seldom comes that it is hardly considered by the members.

For Agricultural Uplift

THIS is the season of agricultural fairs. We have sent request to various fair associations for information as to their exhibits at the state fair and some have replied that all their energies will this year be centered on their own local fairs. We have asked these associations to tell of the special effort to be made this year and give an outline of the real agricultural events and features which are to be particularly noted.

Glenn County Fair, Orland, September 19-24

Glenn County during recent years has been passing through a period of transition. Large areas, previously devoted to grain farming, have given way to the magic touch of irrigation and are bearing crops of all kinds of deciduous and citrus fruits and berries and intensive agricultural crops. The development of pure bred hogs, sheep and cattle has kept pace with the agricultural progress, and the county is now the home of some of the best livestock in the West.

In all this transition the Glenn County fair has played an important part. Conceived in the interest of the community life of the county, presented by men whose unselfish ambition is to promote better agricultural practice, and through it all a higher plain of living, the fair has been one of the most potent factors in the community development, a great public institution dedicated to the service of the citizens.

While providing recreation and pleasure, the basic endeavor is educational; the outstanding mission of the institution has always been for a more intelligent application of the principles of agricultural practice, demonstrated by comparison and promoted by healthy, friendly rivalry.

By sheer force of the results attained the fair has received recognition to an ever widening extent. The ever increasing patronage and the consequent growth of the fair indicate the confidence of the people in the belief that its scope and character makes it a vital help in the development of the agriculture of the country.

State Capitol at Sacramento

Southern California Fair, Riverside, October 11-16

The object and aim of the Southern California Fair is in keeping with traditions and the experiences from which the modern fair has evolved, but while we preserve the traditions of the county fair we attempt to keep abreast of the times in taking advantage of the opportunity which the fair offers for educational work. We believe that the perpetuity and growth of the modern fair lies in the development of its educational possibilities, and to that end we offer the United States department of agriculture, the state department of agriculture, the farm bureau, and every other agency for rural, home or economic education, every advantage within our reach to spread their theories and methods.

We believe that the person who exhibits his productions, placing them side by side with those of his neighbors, benefits by the comparison. The farmer who looks at blooded stock year after year gets something in his blood which will sooner or later result in his discarding the scrub and introducing the pure bred animal into

(Continued on Page 200.)

County Exhibits at the State Fair

AT the state fair the main entrance admits one on the broad passageway leading directly to the main Agricultural and Horticultural Building. On either side are the exhibits of trucks and tractors, education, arts and crafts, then immediately in front of the Agricultural Building is the broad lawn on one side of which are the exhibits of the University of California and dairy appliances; on the other side, the Woman's Building (one of the handsomest structures on the grounds), Poultry Building, and still farther to the left beef cattle, hogs, sheep and goats.

The Agricultural and Horticultural Building is the center of interest for fruit growers of California. Fruits there exhibited have as a rule been in charge of the chambers of commerce of the various counties, and there has been intense rivalry in the making of these exhibits, this in part because each advertises the resources of its county and in part because of the long prizes. These exhibits are more or less spectacular and fine art is often called upon to aid in producing a striking and attractive effect. This has tended in the eyes of some, at least, to make more of the feature and its artistic arrangement than of the real commercial quality of the fruit. However, there are many quality exhibits of commercial packs of various fruits. Those ripening early in the season have been kept under cold storage, and it is not uncommon to see May and June fruits at the state fair.

We have asked, as far as we could learn, the counties which are to exhibit at the coming fair for a statement of the principal feature of their exhibit and the outstanding product of the county which will be given the place of honor. From letters in reply to these requests we have:

Kings County

Kings County is preparing one of the largest exhibits it has ever shown at the state fair, and the principal feature of the exhibit will be the center display stand, which will represent a dining table showing the various agricultural products of the county. On this stand will be exhibited some 30 varieties of peaches, which will be one of the largest peach exhibits shown at the fair, as well as a large variety of grapes, plums, nectarines and apricots.

We are also arranging a large and comprehensive grain exhibit which will occupy one entire side of the exhibit space. Kings County will have approximately some 400 entries of horticultural and agricultural products.

B. B. Price, secretary of the Kings County chamber of commerce, will be in charge.

Sacramento County

The principal feature this year will be a large reproduction of "Sacramento, the Heart of California," worked out in various deciduous fruits surrounded with a pergola containing clusters of grapes.

We also expect to have a very large exhibit of field crops, melons, etc.

San Joaquin County

San Joaquin County will exhibit at the state fair this year and hopes to have a creditable exhibit.

It is intended to feature those products which have helped to put San Joaquin County in fourth place in the list of agricultural counties in the United States, namely, barley, potatoes, beans and grapes.

It is also the intention of the manager to show approximately 100 varieties of fruits and nuts which can be commercially grown in San Joaquin County, as the county offers untold opportunities as a fruit growing district with an abundance of water and ideal transportation facilities.

The Stockton chamber of commerce has arranged with Charles C. Jensen to collect and arrange the exhibit.

Northern California Counties Association

The five northern counties, Shasta, Trinity, Lassen, Modoc and Siskiyou, under the name of the Northern California Counties Association, will exhibit as a unit at the state fair.

The principal feature will be a six window display done in black and white with electric light effects featuring in advertising the wonderful displays to be seen within the exhibit room. The leading features will be a canning display, including an Indian canned dinner by the girls canning clubs of the farm bureau; an individual ranch display depicting the advantages of ranch life in the north; a strawberry plant showing the strawberry plant industry; a special grain and grass display of the Fall River farm center; the mineral wealth of the north.

The outstanding products of special interest to visitors will be the grains and grasses of the five counties, the dairy products, honey. These three are what we are centering on. Approximately 200 varieties of agricultural and horticultural products will be exhibited.

Managers in charge will be Lewis Carrigan, secretary-manager Northern California Counties Association, and R. C. Evans, secretary of the Redding chamber of commerce.

Colusa County

Colusa County will exhibit at the state fair grains and fruit, the former predominating. About 50 varieties of agricultural products will be shown. Our county exhibit this year will be as diversified as it is possible to make it. Barley, rice, wheat and alfalfa will be the main products, although there will be a good showing of fruit and vegetables. W. O. Hyrup in charge.

Tulare County

The Tulare County board of trade will place a county exhibit at the state fair. The county has a space with a frontage of 32 feet and a depth of 19 feet in which will be installed a general collection of fruits, vegetables and agricultural products. Tulare County has such a great diversity of products and they balance so evenly that no one feature will be given prominence above others. We will endeavor, however, to make special features of the deciduous fruits and grapes, citrus fruits and dairy products.

We are unable to give any idea as to the number of products we will have on display for the reason that we are not through collecting and will not know just how many varieties we have until the exhibit is installed.

A. E. Miot, secretary of Tulare County Board of Trade, will have charge of the exhibit.

Fresno County

We have just started the remodeling of our booth and propose to make this one of the most attractive of the county exhibits.

We are not featuring any particular product, but, of course, are specializing on raisins, figs and peaches owing to the large acreage in this territory. We hope to make our exhibit one representative of this section, containing more than 100 distinct varieties of agricultural and farm products.

P. M. Rasmussen, director of exhibits of the Fresno County chamber of commerce, will have entire charge of our exhibit.

Stanislaus County

Stanislaus County will exhibit at the state fair. The features will be livestock, dairy products, agriculture, horticulture, manual training and music (Stanislaus boys band). There will be over 100 agricultural products shown.

The county horticultural commission is in charge.

Alameda County

Alameda County will feature variety of agricultural products, not specializing on any particular one. At least 50 varieties of fruits and vegetables will be shown. Edwin Stearns, secretary of the Alameda County Development Commission, will be in charge.

Mendocino County

Mendocino County will exhibit at the state fair in Sacramento, the principal features of the exhibit being redwood in its natural state, Bartlett pears and apples. Approximately 100 different varieties of agricultural products will be shown. The manager in charge will be Robert Austin.

Agricultural News Notes of the Pacific Coast

Northern California

University of California opened its regular session August 16.

Sutter County cling peaches are now bringing $40 to $45 per ton.

The university farm at Davis reports 500 students in attendance.

Hop picking started in Butte County August 20 with big crop in prospect.

Pork Day will be celebrated October 8 at Redding during the Shasta County fair.

El Dorado County pears and peaches are showing scars from the spring hail storm.

Report comes from Diamond Springs, El Dorado County, that deer are doing considerable damage to trees.

Supervisors of Butte County have adopted by unanimous vote a dry enforcement ordinance for Butte County.

Sebastopol Apple Growers Union is sending out 1,200 boxes of Gravensteins daily from its Santa Rosa packing house.

Growers of cling peaches in Sutter County who have pooled their fruit will pack 7,000 tons of peaches at the Emeryville cannery.

Directors of the National Livestock Show to be held at San Francisco October 22-30 report great interest shown by breeders.

Owners of 1,400 acres of land meeting August 4 at Williams, Colusa County, signed up as a preliminary move toward affiliation with the Glenn-Colusa irrigation district.

The Pacific Portland Cement Company has complained to the railroad commission that railroad freight rates discriminate against its plant at Cement, Contra Costa County.

The California Farm Bureau Elevator Corporation has been receiving since early June an average of ten carloads of grain a day. One day's receipts totaled 31 cars.

Horticultural Commissioner Flournoy of Tehama County reports cleaning up puncture vine throughout his territory and that the railroads have agreed to eradicate the pests on their rights of way.

The California Prune and Apricot Growers Association is operating in Shasta, Tehama, Butte, Yuba, Sutter, Sacramento, Amador, Yolo, Solano, Alameda and Contra Costa Counties of Northern California.

A petition has been presented by Solano County farmers' wives asking for the appointment of a home demonstration agent. The women of Tehama County are also asking for the appointment of an agent.

Hop growers have begun picking. The yards about Sacramento show fine quality of the hops as well as big yields. Twelve to 15 cents is reported contract price for good quality hops. Sacramento growers are paying pickers 90 cents to $1 per hundred pounds.

The Redwood Manufacturers Company of Pittsburg, Contra Costa County, has brought complaint before the railroad commission against the Southern Pacific and Santa Fe railroads, charging excessive rate to Los Angeles and refusal to establish joint rates with the Remco Company, while it is claimed they do joint rates with other water carriers for greater distances.

Central California

Patterson peach growers report cling peach trees overloaded with fruit.

Miller and Lux holdings in the San Joaquin Valley have been placed on the market.

Sweet potatoes are going forward in carload lots from Stanislaus County.

Tulare County has been making arrests for overloading trucks on highways.

A good outlet has been found for Turlock cantaloupes in the San Francisco free market.

The Boys' Corn Club, organized at Bishop, Inyo County, will exhibit at the county fair in October.

The Tulare County Alfalfa Growers Association has been formed as a unit of the Alfalfa Growers of California.

The farmers market is San Francisco is proving a success. It was established one month ago by Santa Clara fruit growers.

One hundred fire fighters have been contending with flames in the Sequoia national forest. 1,800 acres have already been burned over.

Receiving stations of the California Prune and Apricot Growers at Sunnyvale and Los Gatos will soon be equipped with grading facilities.

The recent alien poll tax registration shows that there are more Portuguese in Tulare County than foreigners of any other nationality.

Chester H. Rowell, former editor of the Fresno Republican, will be the speaker of the day at Tulare's celebration of Armistice Day, November 11.

An entire pavilion opening on the lobby of the Tulare County livestock show has been devoted to community exhibits. The show opens September 13.

The California Prune and Apricot Growers is receiving deliveries from Santa Clara County growers at Campbell, Morganhill, Gilroy, San Jose, Mt. View, Los Gatos and Sunnyvale.

San Benito prune and apricot growers are delivering fruit to association houses at Hollister. Tulare, Kings, Fresno, Kern and Madera County deliveries at Hanford, Visalia and Reedley.

Highway Commissioner Whitmore says "California has $1,000,000 ready to spend on approach roads to national parks within the state as soon as the U. S. government does its part on the roads within the parks."

Fresno County has been denied permission to construct a highway grade crossing over the Southern Pacific tracks at Jameson Avenue to connect with White's Bridge road on the grounds that the hazard was too great.

H. B. Keller and F. T. Murphy of the farm adviser's staff of Fresno County have been inspecting grain elevators at Mt. Pellier and Patterson, Stanislaus County. Fresno farmers are looking up the subject to prepare for elevator building themselves another season.

As a part of the campaign of the California Peach and Fig Growers to bring the standard of figs grown in the state to the highest possible plane, the association announced that a dried fig contest would be held in connection with the annual Fig Institute, which will take place early in January at Fresno.

Southern California

Many portable beet dumps are being used in Ventura County.

The Orange County farm bureau is to have a secretary-manager.

The first carload of Bartlett pears left the Yucaipa Valley August 5.

Ventura County's first 1921 beans were red kidneys, threshed August 2.

Rhodes grass has reclaimed many acres once the floor of the Salton Sea.

Ojai, Ventura County, became a city last week by an almost unanimous vote.

Santa Susana, Ventura Conuty, expects to have the best walnut crop in years.

The first cotton of the Palo Verde, Imperial County, crop was ginned August 15.

The last of Imperial Valley's 1921 grape crop of 160 cars was shipped on August 7.

The La Habra chamber of commerce recently held meeting to discuss control of storm waters.

The Yucaipa Valley apple crop will run over a half million boxes and all will be shipped out of the state.

Owing to reduction in freight rates the Imperial Valley lettuce acreage will be fully as great as that of 1920.

Imperial Valley and Palo Verde cotton growers expect to get their cotton picked this year for one cent a pound or less.

Escondido, San Diego County, is buying a ten acre vineyard to raise fruit to distribute free on the annual grape day.

Contract fumigators and sprayers in Los Angeles County operating outside of incorporated cities must secure county licenses.

Banning, Riverside County, reports light olive crop. While the bloom was exceptionally heavy, rain and fog at blossoming time prevented pollenization.

Chris Westgard of Brawley, Imperial County, will soon begin shipping a large crop of pomegranates. This year he planted 1,800 more pomegranate trees.

San Bernardino County has about 50,000 colonies of bees, according to County Inspector Stanley, but this year's honey crop will be the smallest since 1914.

September meetings of Los Angeles County farm bureau centers are announced for Lankershim, September 1; Whittier and San Fernando, 2; Downey and Glendora, 5; Alhambra, 6; Zelzah, 7.

The Imperial Valley's Mariout barley record for 1921 goes to Ralph Butters, whose field yielded 37 sacks to the acre. The next field, in common barley, used as a check, yielded 27 sacks to the acre.

Agents of one of the large steamship companies have been making inspection of the precooling plant at San Dimas with a view to installing in Isthmian steamers the best possible equipment for carrying fruit in perfect condition to Atlantic ports.

San Bernardino County has a new truck ordinance providing "No vehicle of four wheels can operate on county roads which, with its load, weighs more than 22,000 pounds." It is expected that both Riverside and Orange Counties will pass the same ordinance.

The Coast and General

Early sweet potatoes have begun moving from Texas.

Klamath County, Oregon, will hold its fair October 5 to 7.

Sixty per cent of Cuba's 1920-21 sugar crop has been disposed of.

Sugar beet factories of Colorado will begin operations about the middle of September.

The Yuma section of the Arizona state highway will soon be thrown open to traffic.

The state of Washington last year shipped out 21,076 carloads of apples; Oregon, 3,091; Idaho, 2,768.

Salem, Oregon, shipped its first carload of fresh cherries this year. It went to the Atlantic Coast.

Exports of farm products during June were 51 per cent of all commodities exported from the U. S.

A cooperative organization of Western New York apple growers will this year control 5,000 carloads of fruit.

French and Japanese buyers are active in the Australian wool market centers and are reported to have taken all the wool available.

A premium of $57.50 was raised by subscription among Yuma merchants for the first bale of cotton brought to the Yuma gin July 29.

Texas cotton growers get a reduction of 15 cents per hundred on freight rate on compressed cotton to Pacific Coast for export trade.

Georgia watermelon growers have met serious competition from the early Missouri crop and too much rain has also brought them serious losses.

A special mission from the Cuban government has been in Washington appealing for admission of Cuban products to the U. S. on a reciprocal basis.

The Philippine Islands exported during the first five months of 1921 102,270 tons of sugar as compared with 78,168 tons during the corresponding period of 1920.

The Great Northern announces freight reductions of approximately 10 per cent on fresh fruit from Spokane, Walla Walla and Yakima, Washington, to Eastern points.

The Michigan state farm bureau wool pool expects to control 4,000,000 pounds of this year's clip. The Michigan farmers are manufacturing blankets and overcoat fabric from virgin wool.

Japan is encouraging the building up of an iron industry. A law was recently passed providing that any person engaged in the iron industry producing at one place 5,250 metric tons yearly of pigiron or steel is exempt from all taxes for 11 years.

Reports from Georgia show that peach and melon growers are experiencing immediate prosperity from the sale of melon and peach crops. These are moving in fine condition at unusually good prices. Merchantable cantaloupes of choice varieties have taken the place of the indifferent kind.

California shipped out 484 boxes of apples to date of August 6 compared with a total of 365 carloads last year at the same date. It is interesting to note that the early apple box shipments during this same period from all other sections of the U. S. totaled 570 carloads. Barreled apple shipments from eastern states, same period, 1,021 carloads.

Getting Ahead by Going Back---to Livestock

By R. P. Royce

DURING the past year, and continuing to the present time, most lines of industry have been forced to undergo drastic readjustments, and no single industry has been hit harder or at more points than agriculture .

Generally speaking, these readjustments have all tended in the same direction, and in nearly every instance it has been made plain that only those who organize their operations on a sound basis wherein efficiency of production governs can hope to meet the new conditions.

Only the misinformed and shallow optimists expect to see a speedy recovery to the hectic boom days of the war. Only the confirmed and cowardly pessimist believes, for a moment, that the country has gone to the demnition bow-wows. Only the cheerful idiot expects to see all the things he has to sell fetch the high dollar and the commodities he buys purchasable at extreme bottom prices.

The men who are coming through these distressful times are the men who keep their feet on the ground, their courage up and fall in step with the main crowd made up of men who are willing to put greater effort into their work and who are alert to every opportunity.

The situation as regards California agriculture is not different from that found in other states save the fact that on the average we are better off —and don't know it. But the time is close at hand when California ranchers must give serious thought to the type of farming they propose to follow in the future. To imagine that we can continue to conduct our farming operations without regard to a wider use of livestock—efficient livestock—will lead to disaster as surely as daylight follows dark.

The foremost need of California agriculture is the development of a livestock consciousness in the mind of our farming public.

There may be those who will take issue with the above statement, but they have failed to present any argument in refutation.

California has not yet developed an appreciation of livestock in keeping with the progress made in other lines —and until we do, the things we have accomplished, groves and vineyards of which we are justly proud, are as houses built on sand and their periods of productivity are limited to whatever extent a kindly Providence has endowed the soil with native fertility—and be sure of this: No soil is permanently fertile.

For too long have we been inclined to put all our eggs in one basket. Such practice may be profitable for awhile—indeed, it has been profitable in years gone by, but such practice is for the speculator. Speculation has small place in safe farming and from now forward California needs to develop a practice of safe farming, if we don't want to see the entire structure go to pot.

No more convincing demonstration of the weakness of our system need be called to mind than the predicament a host of barley and alfalfa growers are experiencing just now.

Up through our big and little valleys there are thousands of tons of barley and hay for which there is slight demand and when any changes hands the growers declare they sell at a loss. At the same time fat hogs are selling around $10.50 to above $12 per hundred which will net feeders around two cents per pound for barley, and there are so few hogs in California that killers have been shipping in hogs from the Middle West since the first of the year. Is such a situation sound?

In most sections alfalfa is moving slowly and at prices that represent slight if any profit to the grower, while butterfat has stiffened to a point that makes dairying mighty attractive with cheap feeds.

There are, in fact, thousands of ranches in California without a hoof of livestock save the work stock and family cow. Such ranches offer splendid opportunuities for their owners to install a small herd of beef cattle. For the most part the cattle could be carried through on feed that now goes to waste.

But far more important than the actual profits from livestock operations is the maintenance of the soil fertility. The fertility of our soil is California's greatest asset. Indeed, the whole future development of the state is limited to the degree of conservation practiced in soil management and as yet no state or nation has successfully solved the problem of soil fertility without the extensive use of livestock.

Livestock production is not a precarious business. Study the agricultural development of the older states and it will be found that in every case the most prosperous states are states wherein livestock occupies a commanding position. Visit such states and it will be found in turn that the most prosperous communities are livestock centers. Livestock is the great balance wheel of agriculture—the one sure steadying influence alike in time of bumper crops and crop failures. The sane raising and feeding of cattle, sheep and hogs has paid off 90 per cent of the farm mortgages of America and no man ever "went broke" raising and feeding his own crops to good livestock of his own raising. True, men have made failures speculating in livestock—buying to resell at a profit—but the writer has searched his memory and is unable to recall a single case of failure on the part of any man who was content to feed his own crops to cattle or hogs of his own raising. And today—all through the Middle West, and in California, too, men who thought livestock too slow and who took their flyers along other lines are installing a few cows and a few brood sows with the firm conviction that in time they can recoup their losses, and their livestock will not fail them.

In this appeal for a wider use of livestock the writer does not want it understood that he has in mind that every California rancher should estab-

(Continued on Page 214.)

Economic Importance of Dairying in California

By R. A. Condee

IN the past the agricultural importance of the southern counties of California has been measured more by the number of cars of fruit shipped and acreage planted to fruit trees than by the quality or quantity of products from our diversified farms when as a matter of fact the economic importance of the irrigated area of the counties south of the Tehachapi adapted to the production of livestock and general farm crops is very considerable and has been making rapid strides during the past decade.

Southern California is proud of its great citrus and deciduous fruit industry, and the question of maintaining the soil fertility in these groves and orchards will in the next few years be one of the big problems confronting the orchardist. Chemical fertilizers have their place, but every experienced horticulturist knows that humus must be supplied and that nothing has yet been found that will replace barnyard manure in placing the soil in the proper physical condition.

Owners of orchards realize that the supply of this very necessary fertilizer must be in some way increased and that the raising of more livestock in Southern California means more and cheaper fertilizer.

A good many orchardists are casting about for some method by which they can produce their own "barnyard" and at the same time cut down their fertilizer costs by adding to the gross income of their farms. Undoubtedly the dairy cow will eventually supply this want. A well known citrus grower made the statement that "within a few years 20 per cent of the citrus growers of Southern California will be carrying a small herd of from six to 12 dairy cows."

Small herds as a rule produce more per cow than larger ones, therefore the grower will not only supply valuable fertilizer to his grove but will realize an added profit from the cows and add to the supply of a very necessary food.

The dairy herd will help solve the yearly labor problem for the owners of orchards by supplying work for helpers hired on a yearly basis and retaining efficient labor in and out of the fruit season.

The matter of finance is also to be considered as money needed during the fruit harvesting period will not be required, at the time, for the dairy industry. Then again, during the lean years in the orchard the milk checks and sales from the dairy breeding stock will be very acceptable.

The diversification of products is a big item, as specialized farming is proving somewhat unsafe. We have a good example of this in the Imperial Valley sections where cotton replaced alfalfa and the dairy cow a few years ago and as a result brought failure to the farmers.

The man with the enterprise and ability to finance an orchard project on thousand dollar land will not be expected to breed inferior cattle, and more high producing pure breds is sure to result from the addition of dairy cattle to the orchards. Dairy cattle offer possibilities in the citrus and deciduous fruit growing centers.

It would seem superfluous to recommend dairy cows to the farmers in the alfalfa districts of the southern part of this state, but the facts bear out the statement that, outside of the Imperial Valley, 80 per cent of the alfalfa growers sell their hay, and the milk supply for the city of Los Angeles and other centers in the south is produced to a large extent by dry lot dairymen on restricted areas. Many people contend that this is as it should be, that in this age of specialization it is better that one group of men confine their energies to producing dairy feeds while others produce the finished products. The dairyman argues that it is impossible to raise his own feed on the "high priced" alfalfa land and show a profit on his dairy cows at the same time. These men overlook the fact that they are paying a profit on these lands, only they are paying it to the other fellow.

The alfalfa rancher will tell you that "dairy cows don't pay" and that his money is in selling his hay to the dairyman at the best price he can get. Those who are combining the raising of alfalfa with the production of good dairy cattle and good dairy products advance two outstanding reasons in support of their system.

First: Records show that for the past ten years alfalfa hay fed through cows producing more than 10,000 pounds of milk and 300 pounds of butterfat in one year has returned a greater profit per ton than when sold in the open market.

Second: When a farmer sells his alfalfa hay or other farm crop he is parting with not only the crop sold but with the fertilizer value of that crop and is constantly reducing the productive value of his land. Every ton of alfalfa hay a farmer sells takes from his farm approximately 15 pounds of nitrogen, 5 pounds of phosphoric acid and 10 pounds of potash, with a total value of from $5 to $15.

The farmer who feeds his crops to dairy cows is a manufacturer as well as a producer, with two chances for profits instead of one.

We hear the cry of overproduction of milk these days, but those who have given this matter close study know that the trouble lies in the poor methods of distribution, lack of cooperation among the producers and lack of education of the consumer to use more dairy products.

We of Southern California believe that the future is very bright for the production of pure bred dairy cattle in this section of the state. With the great advantages of a long growing season, excellent feed, combined with wonderful seed stock already on our ranches we believe that before many years Southern California will attract buyers from not only all parts of the United States but from all over the world.

FOR AGRICULTURAL UPLIFT

(Continued from Page 197.)

his own herd. For this purpose we strive to bring together in a general exhibit the best productions obtainable and let them tell their story.

Shasta County Farm Bureau Fair, Anderson, October 6-8

This is the third annual Shasta County Farm Bureau Fair. It is under the management and supervision of and is maintained by the farmers themselves. Our fair started through the club work of the boys and girls of the county, and we hope to keep the idea of friendly competition and not allow it to become commercialized.

The object of the fair is to encourage greater perfection and higher development of agricultural and horticultural products; to raise the standard of livestock breeding, to encourage and educate the people of our county in everything that will raise the standards of their products and increase the comforts and add to the beauties of the home.

The 15 farm centers exhibits will be the outstanding feature of the fair. Each center builds its own booth and exhibits collectively all the farm products of the center. The competition is very great with the other centers. The prizes are given on "most attractive," "most variety," and "quality."

The boys and girls calf and pig clubs will have special exhibits, and the girls canning club will put on an exhibit where 58 girls will take part. There will be demonstrations held on all three days by girls from nine to sixteen years of age.

The last day of the fair, October 8, will be "Pork Day," when each farm center will have ready for auction a carload of hogs. By the cooperation of the farmers Shasta County will offer to the buyers in quantity and quality a fine grade of hogs.

The most remarkable sight is to see the farmers all over the county donating their labor, lending their cooperation to build up a fair that has its educational advantages not available in any other way.

California National Livestock Show, San Francisco, October 22-30.

It is axiomatic that a great agriculture cannot exist without equally great livestock. Livestock cannot attain its maximum growth in agriculture without fitting mediums of expression. The livestock show is the greatest medium of expression for the breeder for at the livestock show the best product of his skill is shown to a discriminating public in its most attractive form.

The California National Livestock Show to be held on Market Street, San Francisco, October 22 to 30, is destined ultimately to be the great breeder show of the Pacific Coast. No other location offers the same advantages that San Francisco does. This show is not intended to be a local circumscribed affair for the greater glorification of a particular locality. Those fostering this enterprise have the broadest possible vision for the future. This show is being built upon constructive lines to ultimately be truly international in scope and character.

The mind does not have to wander far for reasons for holding a great livestock show in San Francisco. It is the logical center for coast livestock, as it is for coast finance. It is the logical center for those that come to our shores from overseas to buy livestock for export. It is also the logical center for domestic buyers.

The directors of the California National Livestock Show are themselves livestock men. They propose having permanent buildings that will eventually house a great show sponsored by breeders for breeders. They propose having an ultimate plant and scope equaled only by the Chicago International.

The mission of this San Francisco show may be epitomized in the single word "service." A great show in the logical center of the coast livestock field, a permanent plant and organization at the command of livestock men.

California Flower and Horticultural Exhibition, Los Angeles, October 20-26

Los Angeles will be the California state nursery and horticultural capital October 20 to 26, this period being set aside for the California Flower and Horticultural Exhibition, which will be held in conjunction with a number of conventions in which nurserymen and horticulturists from all over the state will take part.

The business of these conventions will be naturally of keen interest to those persons engaged in the industry. The exposition itself will be a public display of their work. The scope of the show is so extensive that the visitor to Exposition Park will be amazed at the offering.

For many weeks nurserymen of the state, under the direction of the California Association of Nurserymen, have been engaged in constructing what is to be known as the Sunken Gardens, a seven acre tract that will bloom in profusion during October. It is claimed that it will be the peer of any sunken garden effect in America. Bulbs costing as much as $50 each have been planted, in fact, a fortune lies in the soil of the garden in the shape of bulbs. After the show the sunken gardens will be presented to the city and county of Los Angeles as a gift from the Nurserymen's Association.

Two other departments will go to make up the show, one a cut flower exhibit in the Armory building, the other a big exhibit of plants, nurserymen's supplies, fruits and exhibits of a commercial character. Fred M. Renfro, identified with the National Orange Show at San Bernardino as its general manager for the past seven years, has been selected to design the forthcoming exhibition.

Ventura County Fair, Ventura, October 5-9

Every county fair has a distinct purpose—the exploitation of its resources, an exemplification of its energies to the end that its development may be noted not only by the county itself but by the outside world.

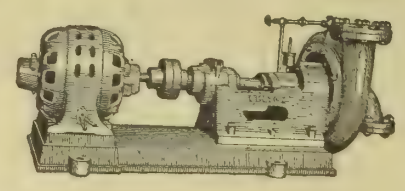
The Ventura County Fair to be held October 5-9, inclusive, has for its distinct purpose the education of its growers, its stock raisers, its producers in every line, the acquainting of the various sections of the county with what each is doing. It may be stated that the Ventura County Fair Association will not hide its light under a bushel, but this year, more than ever, will seek to acquaint the outside world with the advantages that Ventura County has to offer.

The amusement features are not lost sight of, for no fair, it is agreed, can be a financial success unless opportunity is given for recreation and amusement. To this end the best race card in the history of the Ventura fair is to be presented. Chariot races and other spectacular features will be shown each day.

A greater variety of exhibits has

(Continued on Page 208.)

PELTON



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Model M Tractor

With special new refinements Platform, Fenders, Power Take Off, Pulley, Magneto, Governor, Roller Bearing, Dust Proof Front Wheels. The Tractor complete.

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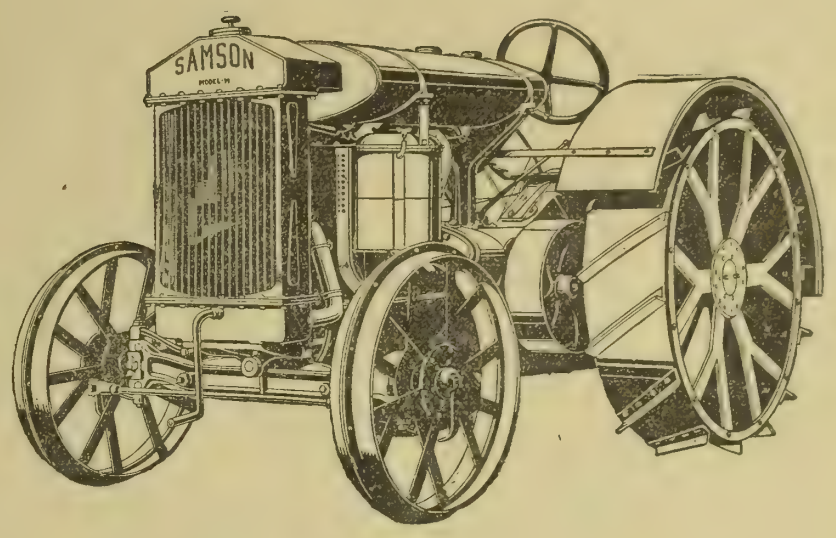
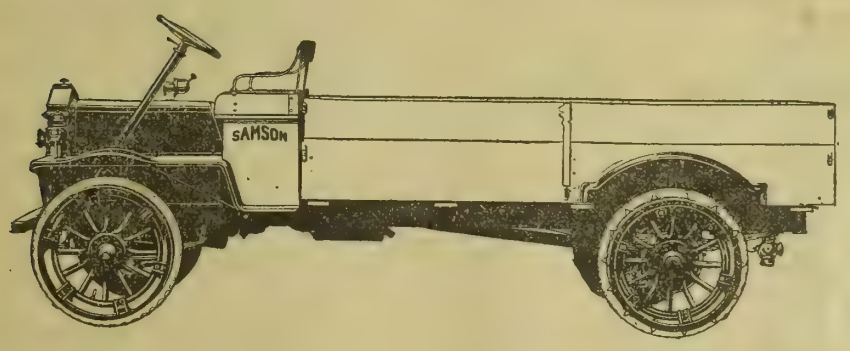


Right now you are confronted with the same kind of problem that your father decided when he discarded the scythe for the mower and reaper. It is the problem of more and better work in less time and at a lower cost—it is the problem of making and saving the crop irrespective of seasonal variations—the problem of realizing a profit even under the most adverse market conditions.

The profits of the future must come through greater efficiency. Lower costs mean greater profits.

Thousands of far-sighted farmers have successfully solved their problems by installing SAMSON equipment.

At the new price, thousands of others will reduce their costs and increase their profits through the use of the efficient SAMSON.



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STOCKTON, CALIFORNIA

Avocado Propagation

By Ernest Braunton

THE following notes on propagation and transplanting of avocado trees are condensations of full directions for the work found in the 1921 annual report of the California Avocado Association. Several articles therein on these subjects are written by those generally acknowledged to be the most expert and most experienced in avocado culture, and all who undertake such work would do well to first secure and study a copy of this report.

While any seed may do, the Mexican stock stands both heat and cold best and has the strongest wood of any types grown in California. As the fruits ripen in the fall, from September to December, and should be planted at once, it is necessary to provide winter shelter for seed beds, preferably covers of burlap or other cloth. For soil use half sand and half leaf mold or rich free loam. Plant seeds two inches apart, small end up, and cover a half inch. Scatter pure sand on top to prevent soil baking. Keep constantly moist but not wet.

If well grown, plants will be ready for nursery row, four to eight inches high, in March, April or May. Take up a few plants at a time. Do not let roots get dry, and irrigate as soon as planted. Plant 18 inches apart in row and rows 36 inches apart. Irrigate at least once each week until young trees are well established. Shade each plant from sun by a wide shingle stuck in soil.

In August or September plants should be large enough to bud, or three-eighths to three-fourths inch in diameter. Cut a shield bud about an inch long, with bud in middle of shield. Leave wood in bud. Use T or inverted T cut as preferred. Wrap with waxed tape and unwrap in a month's time. Do not cut entire top off seedling. Leave a few leaves to take up surplus sap and cut entire top when bud is more than six inches long. After bud starts well, tie to seedling, and when latter is cut away, stake and tie at once. Keep off all branches below 24 to 30 inches and allow to form head above this point.

Transplant in early spring, moving as large a ball of soil as can be safely and conveniently handled. Dig holes three feet in all dimensions and put best or top soil in bottom of hole—you can easily improve that left near the surface at any time. Keep a stout stake for the first two years and securely tie tree to same. The third year in the average location the tree will be able to support itself and resist windstorms or it is a poor tree. Young trees should have the trunk shaded until their own foliage qualifies for the same office. Burlap is the material most generally used.

AVOCADO ASSOCIATION REPORT

The 1920-21 annual report of the California Avocado Association is before us, a hundred pages, and several illustrations, of valuable matter so vital to successful growing of avocados that none should plant or grow without a well thumbed copy of it. It contains a full account of the meeting of October, 1920, and May, 1921, also some of the papers and letters not read at these meetings, lists of officers and members, exhibits and exhibitors, etc. It is supplied free to members and to others at one dollar a copy, by G. Agnes McNally, Secretary, Altadena, California.

SMOKE NOT ESSENTIAL IN FROST PROTECTION

It is a curious misconception that many growers have that smoke or smudging is essential in the protection of crops from frosts. Heating for the protection of crops from frosts has been practiced from the earliest days, the famous philosopher, Pliny the Elder, in his book published A. D. 77, Natural History, tells the farmers of his day to "make bonfires in the fields and vineyards of cuttings or heaps of straw, or the weeds that have been rooted up, the smoke will act as a good preservative." Near the end of the seventeenth century in certain sections of Germany it was compulsory that farmers build fires and smudges on frosty nights.

With all previous experience pointing to the use of smoke as a frost preventive, it is not to be wondered at that the first attempts in recent years along this line should consider the smoke essential. Yet elaborate experiments conducted by the weather bureau of the United States government, as well as private individuals and growers in various sections of the country, clearly demonstrate that smoke is not essential, but that heat is the thing to be desired. Smoke is recognized as waste, carbon that has not been consumed in burning, and just as the furnaces of a big factory are adjusted to burn practically without smoke, because engineers have found that that is the economical way to operate them.

CITRUS CANKER QUARANTINE

Additional information as to the citrus canker infestation in the Northern Territory of Australia is being sought by the federal horticultural board, United States department of agriculture, before taking action on the proposal to place a ban on the importation of citrus fruits from Australia, Tasmania and New Zealand to prevent the introduction of the disease into this country. At a recent hearing by the board, D. B. Edwards of New York, official secretary of the Commonwealth of Australia, assured the board that the disease was now under control in the northern territory and that his government was prepared to certify shipments of citrus fruits. He promised to supply further information showing that there was no necessity for the quarantine. With the addition of Australia, Tasmania and New Zealand the quarantine would be complete against India, Siam, Indo-China, China, the Malayan Archipelago, the Philippines, Oceania, Japan, Formosa and the other islands adjacent to Japan, and the Union of South Africa. All citrus fruit from these places are excluded except oranges of the Mandarin class, which are entered under permit.

A widening of the quarantine was proposed as a safeguard for the citrus groves in this country. Although practically no citrus fruit from the northern territory comes to this country, it was thought that the disease might be brought here indirectly in other shipments.

PRICES ON 1921 PRUNES

The first formal prices quoted to the trade by the California Prune and Apricot Growers, Inc., for 1921 crop prunes have just been sent East to the association's brokers by H. G. Coykendall, general manager of the association. Though the prices which have been sent out to the trade are not considered as opening prices by the association the prices just released correspond to the opening quotations which have been named in former years.

The prices quoted to the trade for 1921 crop prunes are Sunsweet Quality 30-40's, 9c bulk basis; 40-50's, 8c bulk basis; 50-60's, 6½c bulk basis; 60-70's, 6c bulk basis; 70-80's, 80-90's and 90-100's, 5½c bulk basis. Prices for Growers Brand prunes are one-quarter cent less per pound on all sizes than Sunsweet quotations. In naming its prices on 1921 crop prunes the association announced that it would not guarantee its quotations against decline and that all prices were subject to change at any time.

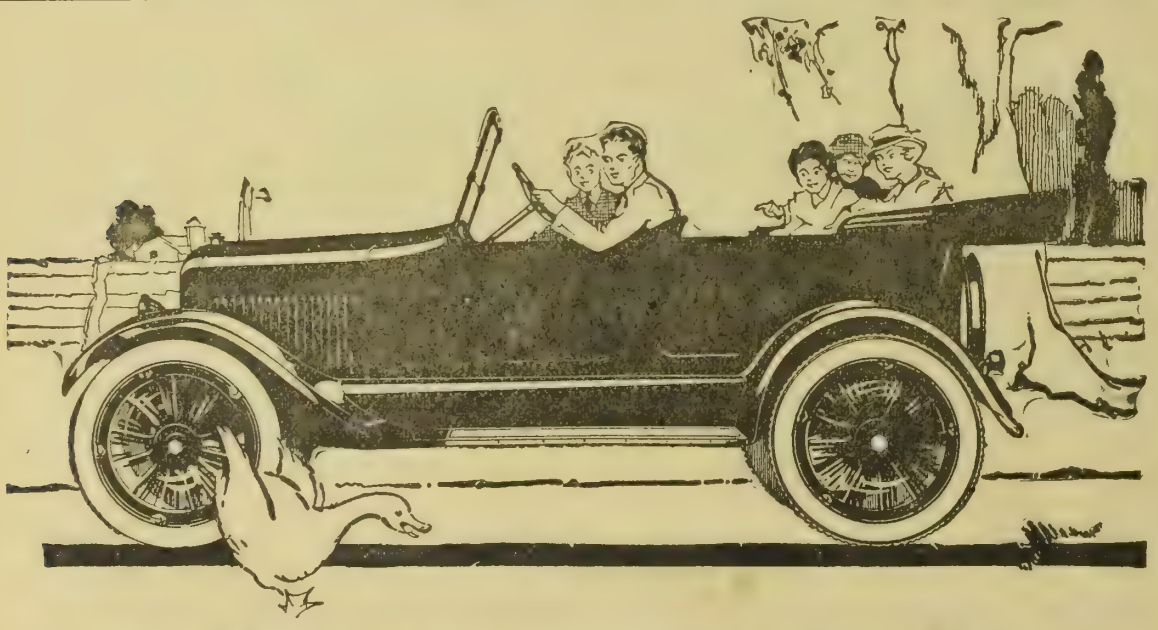
Commenting on existing market conditions, H. G. Coykendall said that there was an excellent demand both for domestic and export shipments which gave promise of an early clean-up of holdover stocks of last fall's crop.

Citing as an example the large buying of 1921 crop dried apricots which took place as soon as the pack was available last month, Coykendall said that a similar demand might be expected for new crop prunes as soon as the pack became available for shipment.

In view of the present strong market the general opinion seems to be that any change from the prices named for 1921 crop prunes will be upward instead of downward.

GUMMING BY ARSENIC

A peculiar and apparently serious case of gumming of several young citrus trees in a Glendale, Los Angeles County, city lot caused considerable concern to the owner who scraped and Bordeauxed the gum pockets without results. It was learned that the trees had been painted in spots, by the owner, with ant poison in the effort to control a severe infestation of Argentine ants. This was undoubtedly the cause of the injury which developed shortly after the poison was applied. Other cases have been noted of similar injury to large citrus trees and to avocado trees where ant poison containing arsenic had been allowed to drip from defective cans or paraffined sacks onto the bark of the tree.



A Good Investment for You

The Overland car is built to save the waste of slower transportation.

The price is low; but the price of its service is lower still.

The body is *all-steel;* the finish *baked enamel;* electric starter and lights designed with the car; the curtains open with the doors. The car lasts.

Its fuel saving is astonishing, its cost for tires and upkeep *—negligible.*

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WILLYS-OVERLAND Inc.
TOLEDO, OHIO

Deglet Noor Date Offshoots From Algeria

TWO large shipments of offshoots of the famous Deglet Noor variety of the date palm have just reached New York, 103 cases on the steamship Silene and 77 cases on the Urbino, all consigned to the United States department of agriculture. These offshoots are being shipped to Los Angeles and should reach the government date garden at Indio by the end of August.

In order to safeguard the future of the date growing industry in the United States and in particular to make Deglet Noor offshoots available to small growers or to farmers who may in the future desire to grow dates, the department of agriculture secured permission from the Algerian government in the spring of 1921 to import 1,400 offshoots of the Deglet Noor variety this year.

The department has entered into a contract with a local firm of date growers of Indio by which they undertake to root these offshoots, plant them out in permanent orchard form and return to the department one-fifth of the offshoots produced on the imported trees, and sell three-fifths of the offshoots to bona fide date growers living in regions suitable for the culture of the Deglet Noor variety and who do not already have 100 trees of this variety, at a price not to exceed $7.50 each for the unrooted offshoots. One-fifth of the offshoots are to go to this firm as their share, in view of their having borne all the expenses of this introduction. Further details as to the disposition of the offshoots produced by this new importation can be secured by addressing the Office of Crop Physiology and Breeding Investigations, Bureau of Plant Industry, U. S. Department of Agriculture, Washington, D. C.

Date palms, unlike other fruit trees, cannot be propagated by budding or grafting, but can be reproduced only from offshoots produced at the base of the stem in limited numbers during the first few years of the life of the mother tree. After the mother tree reaches the age of 12 to 15 years, no more offshoots are produced.

In 1900 the department made the first large importation of offshoots of the finest date that reaches the European market, the famous Deglet Noor variety which grows in the oases of the Sahara in southern Algeria and southern Tunisia. For some years this variety did not ripen well in the southwestern United States, but finally in 1910 methods of curing were perfected by the experts of the University of Arizona and the department of agriculture. Large importations of Deglet Noor offshoots were made by the Coachella Valley Date Growers Association from 1912 to 1914, with the cooperation and help of the department. After the war broke out the Algerian government placed an embargo upon the export of date offshoots from Algeria and no further importations of this variety could be made.

This importation of offshoots of the Deglet Noor variety, together with the importation made last year of the Saidy variety from Egypt will place at the disposal of date growers of this country for the next 15 to 20 years a large supply of offshoots of these two standard varieties at very low prices. For the present no more importations are contemplated.

Pasteurization Preserves Sweet Cider and Grape Juice

SWEET cider or grape juice can be preserved in a sweet condition indefinitely if the directions furnished by specialists in the bureau of plant industry, United States department of agriculture, are carefully followed.

As rapidly as the juices are pressed from the fruit place them in clean vessels. Wooden barrels or tubs which have previously been thoroughly scalded will serve the purpose very well, although earthenware jars, if available, should be used. These are allowed to stand over night, or for not more than 12 to 14 hours, in the coolest location possible so that much of the solid matter suspended in the juice will settle to the bottom. Glass jars or bottles must be thoroughly sterilized to receive the juices, which are drained off without disturbing the sediment.

If fruit jars are used they should be fitted with sterilized caps and rubbers and the cap tightened down as far as it can be turned. If bottles using crown caps are used, the bottles are capped as they are filled, using caps which have been sterilized. In case bottles closed with corks are used, set the previously sterilized corks in place in the bottles and tie them down loosely with strong cord so that steam may escape. To relieve the pressure during sterilization the bottles should be filled only to the neck.

A wash boiler or other convenient vessel can be prepared for a "water bath" by fitting it with a wooden rack on which the containers filled as above indicated with juice are placed. The bath is filled with cold water and the bottles or jars, if closed, are inverted or laid on one side so as to wet the inside of the caps thoroughly with juice. If bottles closed with corks are used, the bottles must stand upright in the water, which should come up to the necks of the bottles.

The heating is then started. A thermometer is hung so that it will dip for half its length into the water, which is heated gradually until its temperature reaches 175 degrees Fahrenheit. Allow the bottles or jars to remain in the water for 30 minutes if quart or half gallon jars are used, and from 40 to 45 minutes if gallon bottles are used. Then remove from the stove and immediately tighten down the caps of the jars, if jars are used. If corked bottles are used, drive the corks firmly into the necks; invert each bottle so as to wet the cork thoroughly with the hot juice; then complete the sealing by cutting the cork off smoothly and pouring hot paraffin over it.

Place the product in a dark, cool storage room. Watch it for a period of a week or more for the beginning of fermentation, which will be indicated by frothing at the surface of the liquid. If any bottles show signs of fermenting, return them to the wash boiler and repeat the process exactly as before, loosening the top, of course, before heating begins, and closing down firmly again before the liquid is allowed to cool.

When the juice is placed in storage the suspended solid matter will gradually settle out and sediment will accumulate in the botom and on the sides of the jars. In the course of two or three months at ordinary temperatures this settling will be completed and the liquid will be fairly clear. It may be used directly from the bottles or drawn off into clean bottles which should be sterilized before they are filled and which should then be corked and pasteurized by heating to 170 degrees Fahrenheit for the same length of time as in the first pasteurization. If rebottling is necessary or desirable the second heating should never reach the temperature to which the juice was first heated; otherwise, the clarification which is secured by settling and decanting into new containers will be defeated, as a second process of sedimentation will occur. If the temperature be kept five degrees below that reached at the first heating, this result will be avoided.

A reliable thermometer is a necessity for this work as it is important that the juice be heated to 175 degrees Fahrenheit in the first heating in order to destroy the organisms which would otherwise cause fermentation. It is equally important that the juice should not be overheated, as this will give it a cooked taste which is decidedly unpleasant to many people.

Owners Who Spray Have Orchards That Pay

There's no doubt about it—now. Citricola and black scale in Southern California can be overcome—and red spiders routed—with Balfour, Guthrie & Company's patented formulas for spraying. Your trees—like those our experts sprayed on 20,000 acres in Tulare County—can produce fancy packs and bigger profits.

It is not too late to succeed with this year's crop. But you must start spraying **now.** You don't have to experiment. You can take advantage of the field tests that already have proved the superior merits of

B. T. S. TRIUMPH GLUE (for citricola and black scale)	15 lbs. 1½ to 2½ gals. 1 lb.	Per 200 gal. Tank	B. T. S. TRIUMPH GLUE (for red spiders)	10 to 12 lbs. 1 gal. 1 lb.

(patented formulas)

Scale infested trees, as you know, set much less fruit. By spraying NOW with our tested materials, you save your foliage and fruit from the honeydew and that black, sooty fungus later.

Write or call at our headquarters in the H. W. Hellman Building, Los Angeles. Frank B. Herbert, assistant entomologist and his aides will examine your grove free of charge. They will tell you the right spray to use and how to use it. To get best results, spray today.

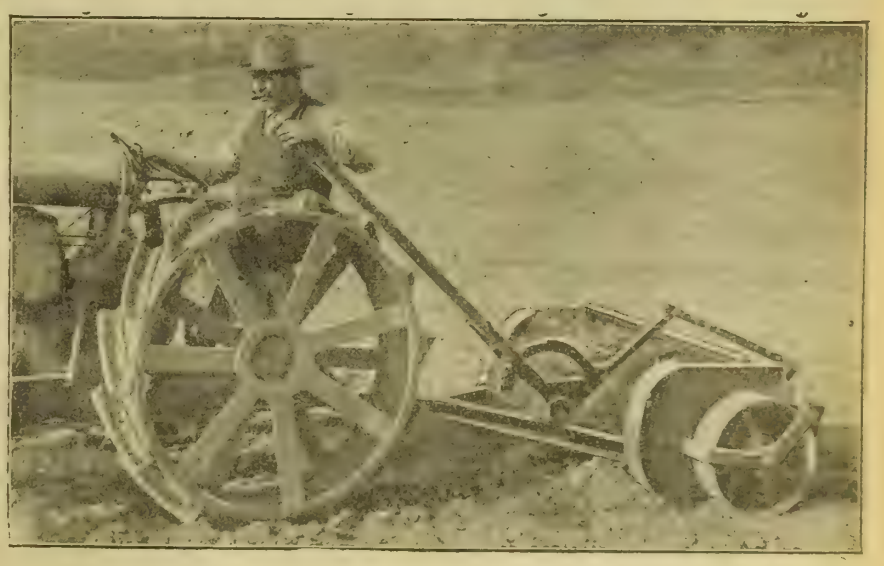
A new bulletin on citrus spraying by our expert entomologist, Paul R. Jones, is yours for the asking.

Insecticide Department

BALFOUR, GUTHRIE & COMPANY

LOS ANGELES H. W. Hellman Bldg. SAN FRANCISCO Balfour Building

UNIVERSAL BRAND ORCHARD SPRAY



THE GUNN SCRAPER

has twice the capacity of a Fresno. Carries the load on wheels instead of dragging on ground. Requires only half the power. Built also for horses. It has no strings or ropes to pull nor any backing up. One lever controls both loading and dumping from tractor seat. Send for descriptive circular and prices. Manufactured and sold by

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Manufacturer of the well known Sandstrom Leveler.

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A treatise on "Irrigation by Flooding" and one on "Irrigation by Furrows," both written by eminent authorities. These Free books are both interesting and instructive.

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2014 Santa Fe Avenue Los Angeles, Cal.

When Writing Advertisers Mention California Cultivator.

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Dog Has Worms

My dog about one year old has been bothered with worms. What is good to rid him of them?—Subscriber, Madera.

Have your druggist prepare ten powders, each containing ten grains of areca nut, and ten powders each containing five grains of santonin. Give one powder of the areca nut every norning in half a cup of sweet milk and one powder of the santonin every night by putting it well back on the tongue, There is very little taste to either of the medicines and you will probably have very little trouble in giving them.

Cory's Thornless

I am thinking of planting two acres of Cory's Thornless berries. I would like to hear from those who have tried them. I can irrigate them whenever necessary—Subscriber, Tulare.

Will be glad indeed to hear from any of our readers who have had experience, especially those who have failed in producing profitable crops, as we have had several commendatory articles. Articles will be much more valuable to our Tulare subscriber if writers will give conditions under which success or failure resulted from the planting of this berry.

Scorpions

Do we have the real scorpion here in the foothills? In the mining claims and sometimes around the house we have seen a bug that looks just like the scorpion you see pictured in the dictionary. If they are scorpions, are they poisonous? They are not longer than an inch and have pointed tail turned up over the back. We found two in the house and I feel worried for fear they might do us harm.—Subscriber, Oroville.

Presumably our inquirer is referring to the scorpion which is common in California. Its sting results in considerable pain and the pests are not pleasant neighbors. However, there is no occasion for fear of serious results.

Dogs Eat Chickens and Eggs

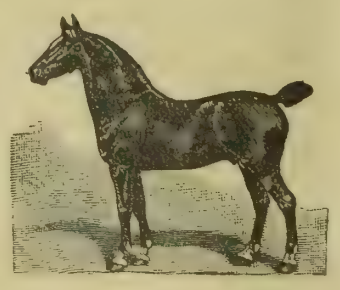
I have broken two dogs, an Irish terrier and a Boston bull, who is still with us, of the habit of killing chickens, and it is as simple as effective. When you catch your dog having killed a chicken, show it to him. Then tie the dead chicken to its neck and keep the dog tied in a place where everybody can see him. If the dog is a real dog he will not touch a chicken, live or dead, again. My dogs live with the chickens, babies and big ones. They eat from their plate and go in their kennel.

As to eating eggs, Yankee Girl is fond of them only when she is going to have babies. I suppose her system needs eggs, so we keep her tied from the time the chickens start laying till the last egg is gathered. I drop an egg well beaten in her milk every other day and a good dish of meat in the evening. After her litter is down she does not show any desire for eggs.

Hope this will prove as satisfactory to our fellow subscribers as it has been to us. I like the Cultivator very much and find it a very useful and pleasant magazine.—Mrs. W. F. Wheeler, Colton.

A flat duty of not less than 30 cents a pound on wool, clean content basis, is asked by the American Farm Bureau Federation wool marketing committee in resolution adopted August 2 at Chicago to be presented to the senate finance committee.

Keeping Your Horse IN Perfect Condition



NO horse with a Spavin, Splint, Ringbone, Curb, Bony Growth, Capped Hock, Wind Puff, Strained Tendon or Sweeny can compete with his physically perfect mates, either in achievements or endurance. Splendid looking horses—otherwise sound—often fail because of some blemish that could be quickly removed with

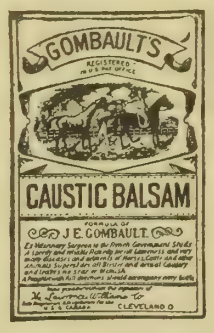
Gombault's Caustic Balsam

Whether you are the owner of race-horses or work-horses, you can prolong their usefulness by the use of this time-tested remedy.

Every stable should have GOMBAULT'S CAUSTIC BALSAM always on hand.

Supersedes all Cautery or Firing. Never leaves a scar or discoloration of hair.

A Reliable Liniment for External Human Use



Has no equal as a liniment and counter-irritant for HUMAN USE. For treatment of Inflamatory and Muscular Rheumatism, Sore Throat and Chest Colds, Growths and Stiff Joints.

GOMBAULT'S CAUSTIC BALSAM if applied immediately to Burns, Bruises or Cuts, is a perfect antiseptic—soothing and healing. An absolutely safe external remedy for human and veterinary uses. It's fame is Nation-Wide.

Every bottle of Caustic Balsam will give satisfaction.

Sold by druggists, or sent by parcel post on receipt of price, $1.50 per bottle. Send for descriptive circulars.

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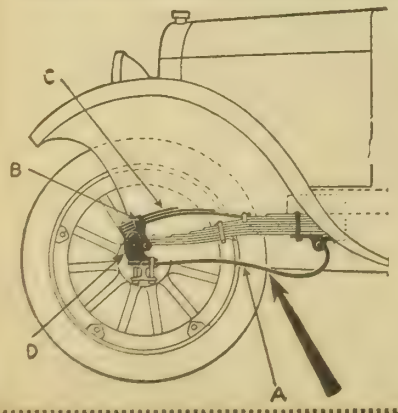
WE ALL BUY AND USE ROCKING CHAIRS, WE ALL BUY SOFT PILLOWS AND MATTRESSES. YOU SEE SHOCK ABSORBERS ON EVERY KNOWN MAKE OF CAR—THE FORD TO THE PIERCE ARROW—



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THEY ABSORB 75 PER CENT OF ALL ROUGHNESS

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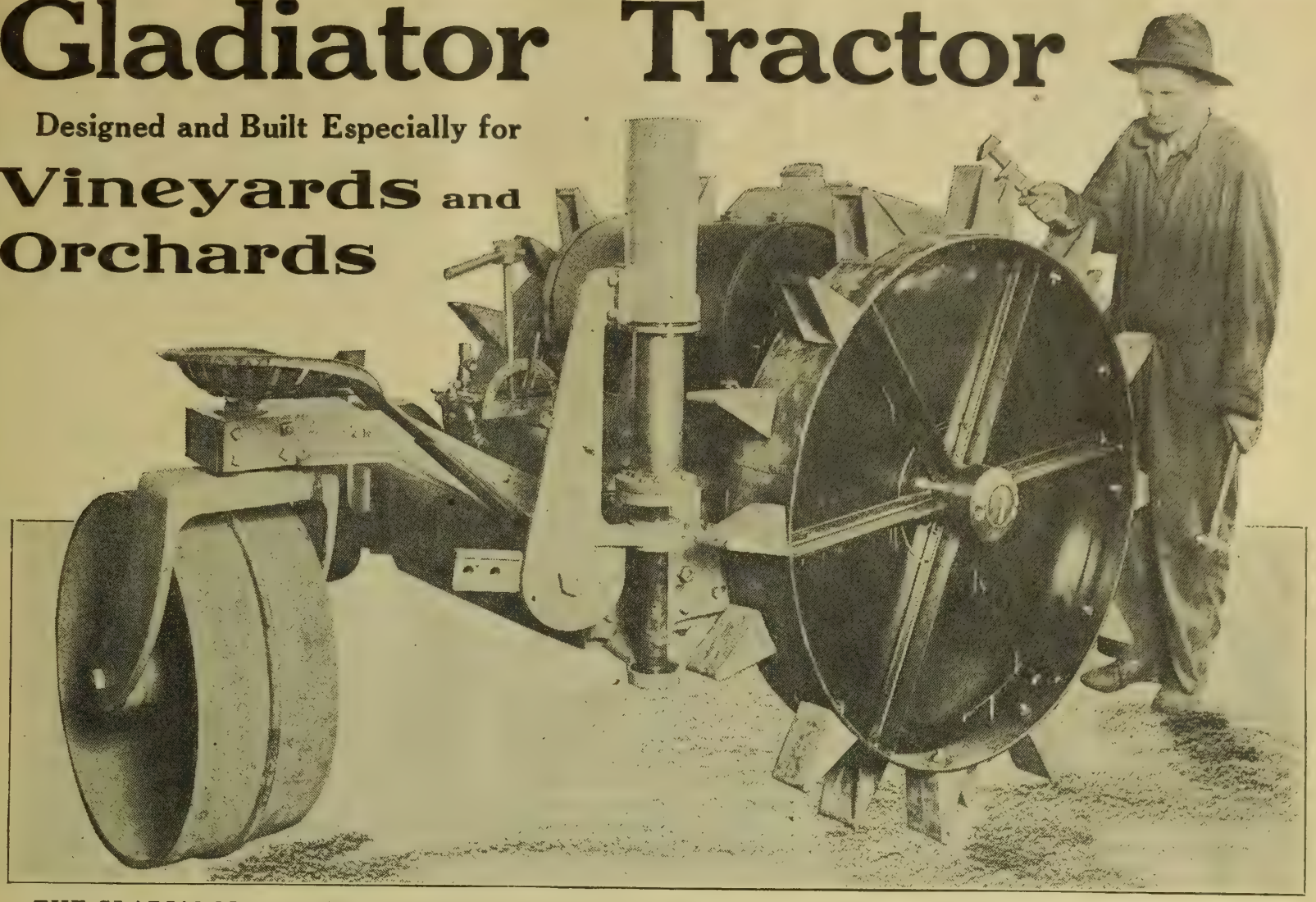
Gladiator Tractor

Designed and Built Especially for

Vineyards and Orchards



THE GLADIATOR TRACTOR with hydraulic lift. It tu rns inside a five-foot radius plow and tractor, making it especially desirable for vineyard and orchard work.

Are you interested in a DEPENDABLE ECONOMICAL TRACTOR that will turn squarely around *inside* a five-foot radius, Plow and Tractor—a tractor that with implement, can be operated in every inch of a vineyard by one man, without waste space at ends and equipped with right and left changeable hydraulic plow lift?

THE GLADIATOR TRACTOR is built to meet the demands of the vineyardists and orchardists of California. Its assembly is an advanced step in tractor design, especially overcoming objectionable long hitches and wide turning radius of four wheel types.

THE HITCH is close up either right or left hand—plows are connected to the *Gladiator hydraulic plow lift*. By turning a cock with tractor stopped or in motion, the pressure from an oil tank lifts or lowers the implement to position desired.

For years Californians have been looking for a tractor like the GLADIATOR. It is built for California conditions, with high clearance—especially constructed drive wheels attached in the center of the frame thereby eliminating danger of rearing up.

There is no other tractor in which the transmission, engine and other essentials are so easily accessible.

The hydraulic power lift feature of THE GLADIATOR TRACTOR alone is the most advanced step in tractor design this year. ONE MAN HANDLES THE TRACTOR and ANY IMPLEMENT from the seat of the tractor and he does it without having to swing wide at the ends of rows. The entire job is built with compactness, for short turns and adjustable for different width rows.

THE GLADIATOR TRACTOR IS EQUIPPED WITH
Hydraulic lift adjustable left or right side
4 x 5½-inch engine
Governor built in
Power Pulley if desired
S. R. B. Roller Bearings throughout

Exhaust from engine is discharged on inside of steel guards over the bull gears thereby making it impossible for dust or grit to get into gears. This also eliminates noise from exhaust.

Dealers will find THE GLADIATOR an easy tractor to sell because it meets conditions not satisfactorily met by any other power farming equipment.

THE GLADIATOR TRACTOR HAS A 60 INCH WHEEL BASE AND THE DISTANCE FROM CENTER OF WHEEL TO CENTER OF PLOW BOTTOMS IS 60 INCHES.

THE GLADIATOR is extremely easy to handle because the turning is a FORCE DRIVEN OPERATION and there is no chance for the tractor to slide around the corners. Wheel runs 18 inches from the furrow at all times.

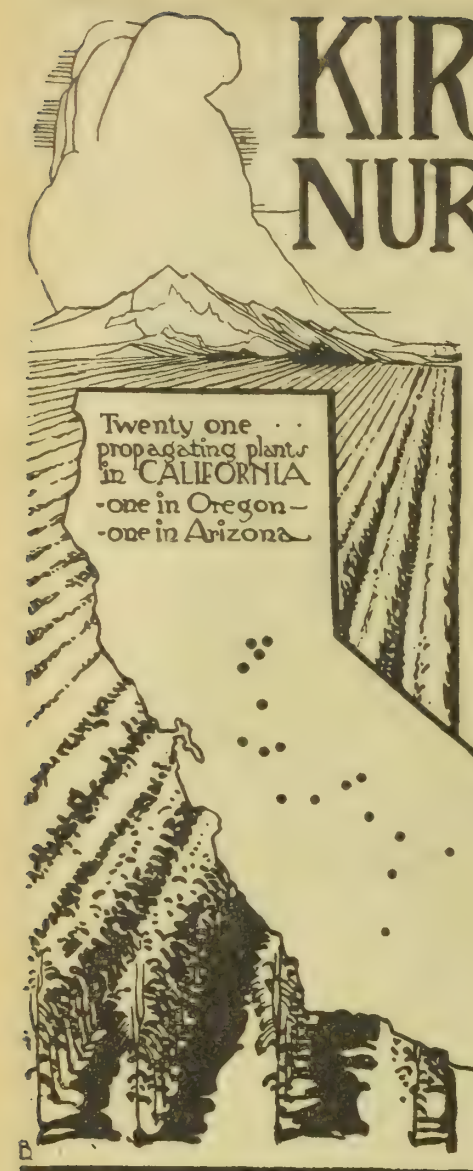
Side draft has been eliminated through patented mechanical perfection.

Vineyardists and orchardists interested in a one man tractor are also i n v i t e d to call and see THE GLADIATOR in the Power Farming exhibit at the State Fair, Sacramento, September 3rd to 11th and at the San Fernando Fair, September 19th to 24th.

Write Us Today For More Information, Address;

GLADIATOR PRODUCTS M'F'G. CO.,

Los Angeles, California



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Established in California in 1888

Reliable Trees and Vines

are essential to the great fruit industries of the Pacific Coast.

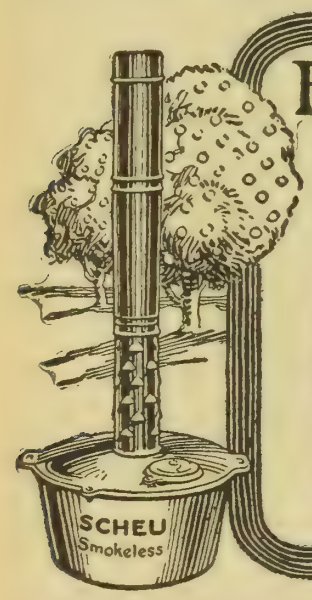
Our experience has been gained by 32 years of progression in the nursery and orchard business in California.

Reservations are now being made for future deliveries.

We offer our services in undertaking the planting and care of commercial orchards on large scale.

Kirkman Nurseries, Inc.
Main Office, Fresno, Cal.

Member Bud Selection Association of California



Frost Insurance

$1.15 per hour per acre

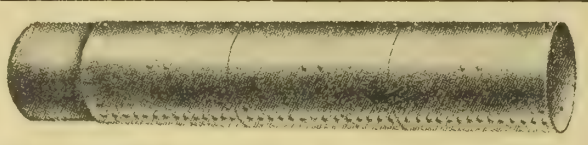
"Used 27 Scheu Heaters to acre on the night of April 25, 1921—temperature outside of orchard 23° raised to 30° and 31° inside. I have a full crop in area covered by the heaters," writes W. C. Stone, Prop. Squaw Butte Orchards, Emmett, Idaho.

Scheu Smokeless and Canco Heaters

Give positive protection. Operating cost $1.15 per acre per hour. Temperature as low as 16° successfully raised above danger point. Used by growers the country over. More than a million Scheu and Canco heaters now in use. Heaters cost 36c up. Order early to get frost protection next spring.

Write for free 48 page book—"Frost Insurance." Resident agents wanted.

Orchard Heater Dept. H
WHITING-MEAD COM'L. CO., LOS ANGELES



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IS THE MOST DURABLE PIPE MADE

Write for Price Lists of
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The Tractor

By J. Murray Hunt

THE world needs food, and it is fortunate that we have learned how few people may provide food for many. The supplying of food is facilitated by the more efficient farming made possible by the use of the tractor—better and deeper plowing, better soil preparation, better planting—larger crops result. The farmer has a greater buying power and more time for leisure. Many a farmer's wife, too, has blessed the tractor. It has considerably lightened her burden, because motorized farms can be operated by fewer men.

The tractor knows no season. The farmer who reaps the greatest profits from its use is the one who finds something for it to do most of the year round. The more a tractor is used, the greater is the profit on the investment. Also, the more operations which are performed in going over the field once, the greater is the saving to the tractor owner. Here is where it pays most to own a tractor with big power.

Besides performing the usual plowing, breaking and pulverizing of the ground in one operation, and harrowing and seeding, the tractor may be used as a veritable power plant for all farm work.

The use of a tractor results in a deeper and richer seed bed; this in turn yields bigger crops, per acre. Tractors with subsoilers are able to break up the toughest kind of hardpan. Through the use of the heavier and more powerful tractors it is possible to break the earth to a depth of 24 inches and more. Subsoiling is practiced to a large extent in California, and is growing in favor, because of its profitable advantages. The moisture that can be conserved by subsoiling is a tremendous asset. When the ground is broken up to a good depth, the rainfall penetrates instead of running off as waste. Greater crops are sure to result. Subsoiling in orchards is now being recognized as a money making operation. Almost every farm, in fact, can benefit through subsoiling because there is no doubt that the deeper the ground is prepared for plant life the bigger will be the returns.

Tractors in combination with land levelers are making thousands of acres of waste land profitable. The expense of putting these rough acres into profitable shape for crops is low with tractor equipment, because big quantities of dirt can be handled in such a short time. There are numerous cases in California where tractors and land levelers have prepared land for crop production on an extremely large scale. For instance, 4,000 acres near Merced belonging to one producer are being leveled for orchard. The work is being done by tractors and levelers of big capacity. The low costs per acre make this leveling a paying operation.

Still another factor that increases the popularity of the tractor and that helps to make it a paying investment to its owner is its ability to go out and bring in good profits in contract work. Many tractor farmers do this. One told me, just a few days ago, that his tractor had cleared over $5,000 for him last year in contract work, besides doing all the work on his own 600 acres.

The Tractor's Development

Some things that seem quite visionary on first appearance finally turn out eminently practical. Thousands of people said the tractor would never get anywhere, but it has. Others condemned the automobile and the motor truck, but look at the thousands of them in service now.

Early tractors were of crude construction. However, the mixture of steel and inventive brains has finally prevailed in its competition with mere animal flesh. The tractor designers are throwing away freak models and getting right down to tested mechanical details, and as a consequence the tractor is relentlessly forcing its way into general use on most farms of any size.

The tractor saves time and economizes on man power. It also has the ability to do thorough work in hot weather. It can work right along, 24 hours a day, too.

Tractors would not be continually increasing in number on our farms if they were not profitable to their owners. When a farmer buys a tractor or any other farm equipment he puts it to work to increase his profits. This comes not only through a greater crop yield but reduced costs as well. The manufacturer does the same thing when he buys a new machine for his factory. He installs it to enlarge production or to bring down costs, or both.

Some Tractor Figures

The fact that tractors are being manufactured and sold in increasing numbers from year to year is evidence of the farmer's acceptance of the advantages that the tractor gives him. In 1909 there were only 2,300 tractors built in the United States. By 1915 the number had grown to nearly 22,000, about as many as are used in California alone today. Now the yearly production runs well over 200,000.

The story of the development of the tractor's use in recent years reads like a romance. The following figures give an idea how the industry has grown. In 1909 the estimated production was 2,300; 1910, 4,500; 1911, 7,400; 1912, 11,400; 1913, 7,400; 1914, 10,400; 1915, 21,900; 1916, 28,000; 1917 (U. S. figures), 62,742; 1918, 135,000; 1919, 175,000; 1920, 203,000.

Just look back on the automobile industry. In the ten years period from 1908 to 1917, inclusive, the automobile industry increased its annual production from 85,000 to 1,600,000. In the same period, motor truck production increased over 4,000 per cent. It looks like the tractor industry, and the farmer too, are due for greater prosperity in the years ahead.

Tractor Research Work

Research work, in recent years, carried on by the commercial department of the Curtis Publishing Company, shows the unusual development of power on the farm. Their findings are of interest, not only in that they show the farmer's foremost place in the world's industry, but also how rapid has been his adoption of the most improved methods of producing crops. More than any other one factor in the advance of agricultural methods has been the constantly increasing importance of the tractor. On this point the report says in part:

"The tractor is of fundamental importance in the motorizing of the farm. Plowing requires more power than any other one job on the average farm. On a farm for which the tractor is adapted the plowing can be done better with a tractor and in much shorter time. The man who plows with horses starts out doing a good piece of work in the morning. As the day wears on he gradually lifts the plow to save the horses, and by afternoon is doing less efficient work. But he who plows with a tractor can plow at exactly the depth suited to the soil throughout the entire day, and all night too, without getting tired. Further, with the tractor he can plow in a single day as much as he could in a week with horses. He can therefore plow his ground quickly, and when it is in the best condition for plowing.

Mr. Howard Looks Ahead

James R. Howard, president of the American Farm Bureau Federation, has been a farmer all his life. He has seen the introduction of the tractor and other power farming machinery, and has formed his mature judgment of its economy through personal use and observation. He says "The demand for more food will continue more insistent with the growing population of this country, and this means an increasing use of the tractor and other power machinery, in more intensive farming methods."

The Tractor at the State Fair

At the coming state fair the farm power exhibit will be a big one. The present plans provide for a very extensive show of implements and accessories as well as tractors. Pacific Coast manufacturers and distributors

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STEEL FENCE POSTS

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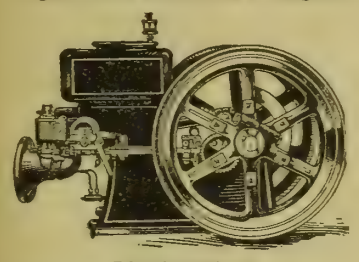

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Read this: "My Log Saw is a marvel. All the neighbors hardly realize it can do the work of 10 men with cross cut saws." —D. Kissey, Farmersville, O.

LOG SAW

Tree Saw falls trees; Limb Saw cuts branches. Other Saw Rigs and farm and shop engines from 1½ to 22 - H. P. Log Saws shipped promptly from 1 of 9 warehouses nearest you. 30-Day Trial. Cash or Easy payments. WRITE FOR FREE BOOK TODAY.

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Pat. App. for.

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OTTAWA MFG. CO., Ottawa, Kansas.

of Eastern machines have taken liberal space, so the California farmer has a genuine treat coming at the state fair this year. Several new designs and makes of tractors will be shown for the first time. This will be a magnificent opportunity for studying the latest developments in farm machinery, and the farmers who avail themselves of this opportunity are going to be amply repaid for their time.

In conjunction with the exhibits of tractors and implements Professor Fletcher of the agricultural department of the University of California is going to conduct his popular "Cafeteria Style Tractor School," where a present or future tractor owner may learn what he wants to know about tractor operation. Daily instructive lectures will be given at the various "Cafeteria Counters," on lubrication, materials, carburetors, magnetos and other subjects directly connected with successful tractor operation. These lectures are free and also informal. A farmer may ask any questions that arise in his mind.

The right sort of a fair is virtually an inventory of the year's progress. Its real purpose is to provide ideas by giving people a chance to see what others are accomplishing. The state fair at Sacramento this year is going to be an important event, as far as tractors and implements are concerned.

A NEW WEED

Guara sinuata is the name of a new weed appearing in many places in the south end of the state, from stations quite removed from each other. It has been sent to the Cultivator from San Fernando Valley and Ventura County and reported from Los Angeles and Pasadena. A study of it, the range and seriousness of infestation, soils and locations preferred is being made and, together with a detailed description of the plant, will be published at an early date. From dried specimens received it is a vigorous annual inhabiting dry hot soils, grows three or more feet high, branches freely, has small notched undulating leaves, magenta flowers of four finely cut petals and a four-sided angular seed pod a half inch long and less than half as thick. It flowers and seeds profusely and should be destroyed as soon as found. At this season of the year, when seeding, plants should be burned.

WINTER COVER CROPS

Orchardists are now ordering seeds for cover crops, for the time is approaching when they should be sown. A recent visit to the San Dimas district of Los Angeles County disclosed the fact that about 60 per cent of the orchards will be so planted. Years ago common vetch was bought by the local citrus association by the carload, for its members. Since the almost universal use of this crop the orchardists have experimented with everything that has been offered so that now they are much divided in opinion and crops used.

Some melilotus still is sown, but J. B. Vaile and some others will use nothing but purple vetch, of which the supply is good and the price much less than in 1920, or about 18 cents a pound. Old orchards will receive 20 to 25 pounds per acre, but where trees are smaller 30 pounds will be used. A few will mix rye or Canadian field peas with the vetch. Too many of the older orchard trees were planted 20 feet apart and little space now remains for the planting of cover crops.

The method of preparation and sowing has not changed from that used in the past. After a thorough irrigation, and as soon as the soil can be worked without danger of caking it, it is cultivated. The seed is then sown broadcast and the permanent irrigation furrows made which are to remain until the cover crop is plowed under, generally in late February or March. A few still sow first, furrow out and then irrigate, but this is not considered good practice, for if a hot spell comes the soil will bake before the cover crop has developed enough to shade the soil, perhaps before it is up. So far as the limited supply of seed will allow a few orchardists will sow an experimental plat of Hubam, the new annual white sweet clover.

Pacific Irrigation Valves

THE method of construction used in Pacific Irrigation Valves effects a saving of at least 50 per cent of the cost of the all-brass valves commonly used for irrigation purposes, without in any way reducing efficiency of operation.

The body of the valve is of cast iron, and a rolled brass stem is used to give strength and protection for this vital part of the valve and insure against easy breakage. Renewable leather seats assure a tight fitting valve at all times and adjustment for the slight wear that may result from continued use is a very simple matter. These valves are arranged so that a canvas hose can be easily connected thereto.

All valves are threaded for O. D. Casing and Standard Pipe as per sizes listed.

Size, inches	1½	2	2¼	2½	3	3¼	3½	4
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in Your Orchard

and when planted are difficult and expensive to eradicate, often contaminating the soil for years.

BEWARE OF INFERIOR AND FOUL SEED.

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The Economical Cover Crop

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Your copy of our 1921 Catalogue Free on request.

MILLER BOX MFG. CO.

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FOR AGRICULTURAL UPLIFT
(Continued from Page 200.)

been assured in every department of this fair, greater premiums have been provided; in fact, this will be the most expensive fair ever presented by the Ventura association. The livestock, agricultural and horticultural, poultry and pet stock, oils and minerals, commercial and women's departments will be more complete than ever before. Ventura Fair officials may be said to be optimistic to the greatest degree.

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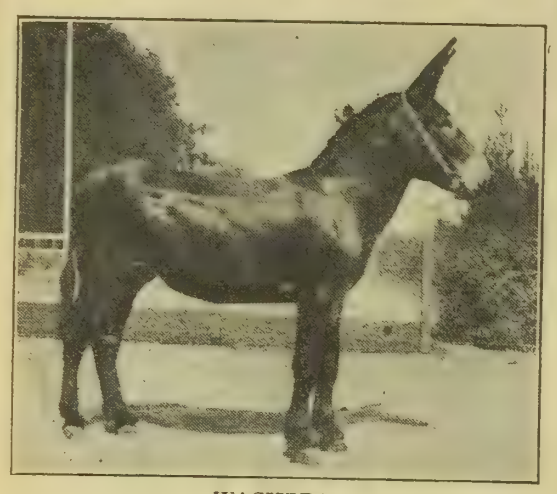
Pure Bred Registered Percheron, Arabian, Thoroughbred Horses
Holstein-Friesian Cattle Southdown Sheep Big Type Poland China Swine

Mammoth Jacks and Jennets



WASHEBA

Washeba, a four year old prize winning son of the great prize winner King Beersheba. Color: Black with white points, 60½ inches high, girth 69 inches, bone 9 inches. Weight 1,115 pohnds. Of a splendid disposition, broke to service, and a sure foal-getter, as there are a number of very excellent mule colts sired by Washeba. The Rancho offers for sale at this time six excellent typey Mammoth Jacks including Washeba, and several Jennets bred to King Beersheba, and some due to foal in September. Prices are reasonable, and in keeping with the quality of the animals offered.

ARSAR

Head of the Santa Anita Rancho Percheron stud. Grand champion Los Angeles and Riverside 1920. Sired by the great prize winning horse, Imp. Jusque, and out of the greatest of all American bred Percheron mares, Oaklawn Queen, he comes honestly by his great qualities. The Rancho has for sale three four-year-old, two two-year-old and three yearling stallions. All are of exceptional size and quality, and were bred and developed on the Rancho. All stock guaranteed.

All well mannered and broken to service in the breeding yard
Correspondence Solicited Visitors Welcome

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- Baby Show
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- Cat Show
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A Style Show of 116 Famous Horses of the Pacific Coast. They will be seen in action, running, jumping, dancing, fancy stepping, side-splitting antics and in amusing games. Every rider, ring master, attendant and groom will be garbed in the most superb attire. It will be a Courteous and Genteel Performance that will stand out in your memory.

TRACTOR WORKING DEMONSTRATION

See in operation the different kinds of Tractors, from the largest to the smallest, combined harvesters, grain and bean threshers; power cultivators, sub-soil and deep cultivators, automatic hay loaders, plows, harrows. The tractor demonstration will be larger than anything of its kind ever held in the Southland and will include a complete POWER FARMING EXHIBIT.

American Poultry Association Show

The Poultry Show will be the only official American Poultry Association Show to be held in Southern California this year.

A RIOT OF FUN ON THE MIDWAY

Merry-Go-Round, Ferris Wheel, Side Shows, Chance Games, a Wonderful Band and American Legion Dance.

6 Wonderful Days I'ts Your Fair — 6 Wonderful Nights Make It a Fair Week

San Fernando Valley Fair
Chamber of Commerce Bldg.
SAN FERNANDO, CAL.
E. R. ELKINS, Director of Fair

St. Helena Vintage Festival, St. Helena, September 3-5

The idea of the St. Helena Vintage Festival is to show and display the resources of this community to the outside public. Our resources consist mostly of vineyard, orchard and farm products, and these products are elaborately displayed in exhibits.

In conjunction with the displaying of our products, we have a carnival, in which there is dancing, concerts, a vintage show, continuous street attractions and a big floral and industrial parade.

The original intent of the festival was to foster the grape and wine industry, but since prohibition has come upon us, we are endeavoring to show our other products, among which is still the grape.

We hope by these annual festivals to be able to induce homeseekers and prospective farm owners to settle in our midst.

Tulare County Livestock and Agricultural Show, Tulare, September 13-17

The Tulare County Livestock and Agricultural Show, which opens this year at Tulare on September 13, is in its third year, having been originally started principally to give the pure bred livestock men of the county an opportunity to further the industry in this district. The notable showing they made, which attracted the attention of the state, and the undoubted pleasure with which the public attended the fair as a whole led to the repetition of the fair in 1920 on double the scale, with a success proportionately greater.

The event of 1921, which has the official recognition of the Western Fair Association, will exceed anything previously attempted in this line in the county. Exhibit space in all departments has been greatly increased, and this capacity will be taxed, it now appears. The automobile section will be made an unusual feature, and the implement and commercial displays are being booked on a scale which indicates that industry is expecting a big business revival. The community exhibits will exceed last year's unusual and elaborate section.

The five days of free entertainment will include a rodeo for the San Joaquin Valley championship to last two days, two nights of fireworks, military maneuvers and sham battle, boxing, vaudeville, moving pictures and other attractions in addition to the customary band concerts, dancing, "free acts," and so on.

The people have demonstrated that nothing suits their community instincts better than such annual events which go back in our racial history for thousands of years. The fair stands for greater community cooperation and good will and has become absolutely indispensable and invaluable in the county life.

Downey Community Fair, Downey, August 25-27

The Downey Community Fair was organized for the purpose of getting acquainted with each other; also to show the population living around and near by Downey that trading at home is a good thing both for the seller and the buyer. We have succeeded well in both instances. Of course, we never lose sight of the main object of all fairs to produce better fruit and better agricultural products by showing neighbors and the world what each farmer can do if he tries hard enough.

San Diego County Fair, San Diego, September 21-24

First of all let it be understood that the San Diego County fair is a farm bureau fair. Generally speaking we believe that what is best and most progressive in this county, so far as farming interests are concerned, is typified in our farm bureau movement. The very fact that we have a strong farm bureau organization points not only to progress but back of all that to a realization of individual and community needs that in itself is the most hopeful indication of better days ahead for this great industry. So then we strive, for one thing, to prove our progress by the increased excellence of our exhibits.

Our farm centers do not put on exhibits primarily for the sake of the prizes offered or because of a feeling.

(Continued on Page 212.)

Household Department

THE DREAM-TOWN SHOW

There is an island in Slumber Sea
Where the drollest things are done,
And we will sail there if the winds are fair
Just after the set of the sun.
'Tis the loveliest place in the whole wide world,
Or anyway, so it seems,
And the folks there play at the end of each day
In a curious show called Dreams.

We sail right into the evening skies,
And the very first thing we know,
We are there at the port and ready for sport
Where the dream folks give their show.
And what do you think they did last night
When I crossed their harbor bars?
They hoisted a plank on a great cloud bank
And teetered among the stars.

And they sat on the moon and swung their feet
Like pendulums to and fro.
Down Slumber Sea is the sail for me,
And I wish you were ready to go.
For the dream folks there on this curious isle
Begin their performance at eight.
There are no encores, and they close their doors,
On every one who is late.

The sun is sinking behind the hills,
The seven o'clock bells chime.
I know by the chart that we ought to start
If we would be there in time.
O fair is the trip down Slumber Sea,
Set sail and away we go;
The anchor is drawn, we are off and gone
To the wonderful Dream-town show.
—Ella Wheeler Wilcox.

SNAILS OR CINNAMON ROLLS

Here are some of the many recipes contributed in answer to request of Gilroy subscriber. We wish we might give them all, but lack of space forbids:

Mix 1 pound flour, 2 beaten eggs, 1 cake compressed yeast (dissolved in a little warm water), 1 teaspoon salt with enough scalded and cooled milk for medium firm dough. Let rise. Work in 4 ounces sugar and 4 ounces shortening. Let rise again and roll out ¼ inch thick. Brush with melted butter, sprinkle with sugar, cinnamon and currants. Roll up and cut in slices ¼ inch thick. Lay in greased pan and bake when doubled in size.

Mrs. J. Rembert, Lindsay

Scald 1 cup sweet milk, let cool, add 1 cup mashed potatoes run through a ricer or sieve, 1 tablespoon butter, 2 eggs, ½ cake compressed yeast dissolved in a little lukewarm water, 2 tablespoons sugar. Stir all together with 1 cup flour. Let rise, mix with enough flour to make a stiff dough, roll out and sprinkle with brown sugar, cinnamon and currants or seedless raisins. Roll and slice as you would jelly roll and place in greased pan to rise. When light brush with a little milk and bake. The foundation of this is also fine for buns or Parker House rolls.

Mrs. A. Semmler, Sebastopol

1 cup scalded milk, 1 compressed yeast cake dissolved in ¼ cup lukewarm water, 1½ cups flour, ¼ cup melted butter, ¼ cup sugar, 1 egg well beaten, 1 teaspoon almond flavoring, ½ teaspoon salt, 3 (about) cups flour. Cool milk to lukewarm, then add dissolved yeast and 1½ cups flour. Beat until smooth and put in warm place until light; will take about 1 hour. Then add other ingredients, turn on board and knead until smooth and elastic and does not stick to hands or board. Place in well greased bowl, brushing top over with melted shortening. Allow to rise to 2½ times original size; will take 2 hours more. When light roll into sheet ½ inch thick, brush over with melted butter, sprinkle with sugar and cinnamon, and, if desired, seedless raisins. Roll as for jelly roll and with sharp knife cut slices about 1½ inches thick. Place slices upright in well greased pan and stand in warm place to rise till very light. Can be varied by sprinkling brown sugar in pan after greasing and placing slices on sugar. When baked turn upside down, the brown sugar forming a candied top. Care should be taken not to use too hot an oven for these rolls.

"Aida"

2 cups flour, 1 teaspoon sugar, ½ teaspoon salt, 2 tablespoons lard, 2 teaspoons baking powder, milk enough to make a soft dough. Roll out ½ inch thick and spread with brown sugar, nuts, cinnamon. Roll up again and cut. Put a thick coating of butter, brown sugar, cinnamon over it, and bake.

To make with yeast, use any sweet rusk recipe, only rolling out, covering with the sugar and paste, before setting to rise the last time.

COOKIES FOR EVERYBODY

(Concluded.)

Mrs. G. C., Bishop

Plain Cookies.—One cup sugar, 1 cup sweet cream, butter size of an egg, 2 eggs, 1 teaspoon soda, 1 teaspoon cream of tartar, flour to roll. Flavor with 1 tablespoon lemon juice and grated rind of 1 lemon, or nutmeg and vanilla.

Sour Cream Cookies.—One cup butter, 2 cups sugar, 1 cup sour cream, 2 or 3 eggs, ½ teaspoon soda, flavor, flour to handle easily.

(Will "Mrs. G. C., Bishop" send address for subscription credit?—Edit.)

Mrs. Oliver Arbogast, Los Angeles

One and one-half cups brown, light (Extra C) sugar, ½ cup shortening (use ham and bacon fryings), 1 egg, 5 tablespoons sweet milk, 2 heaping teaspoons baking powder, 2 rounding teaspoons ginger (ground). Enough flour to roll stiff, and they will be nice and crisp.

Mrs. Harold C. Rudolph, Esparto

I am sending recipe for plain rich cookies, one we have used for years. One cup butter (scant), 1 cup sugar, 2 eggs, 1 tablespoon water, 1 teaspoon vanilla, 1 teaspoon baking powder. Flour to make a dough and roll out thin. Cream butter and sugar, add well beaten eggs, water and extract. Beat thoroughly. Sift baking powder with one cup flour into other ingredients, beat until light. Add flour to make soft dough, about 1½ cups. Turn onto floured board, knead lightly, roll thin, cut out with cutter and bake in a quick oven.

Mrs. R. P. Dickson, Porterville

Rich Sugar Cookies.—One cup sugar ¾ cup butter, 3 eggs, small teaspoon soda, sprinkling of nutmeg. Flour to roll thin, this having no wetting except eggs and no baking powder can be given invalids when other cake stuff cannot be given.

Cultivator Subscriber

One cup sugar, 1 cup shortening, 1 cup molasses, 2 eggs, 1 teaspoon ginger, 1 tablespoon soda, 1 tablespoon vinegar, ¼ teaspoon salt, flour enough for stiff dough. Mix in order given. Dissolve tablespoon soda in warm water, add vinegar, let foam then add to dough, roll and bake. These are just as good after a month as when freshly baked.

Kay Esspe, Bonsall

Take about a pint of any good bread dough when it is ready to work into loaves. Add 1 egg, 1 tablespoon sugar and 2 tablespoons butter substitute. Work in thoroughly. Roll to ¼ inch or less. Spread with softened butter, sprinkle with sugar and cinnamon, roll up and cut ½ inch slices. Put in buttered pan and let get light and bake as any bread.

Mary L. Hootman, Puente

Three eggs, 1 cup sugar; a little over a half cup butter, 2 tablespoons water, 2 teaspoons baking powder, flour sufficient to roll. This makes a large crock full. The best I ever ate. Sift baking powder with flour, make a hollow place in the flour in which to hold the other ingredients. Work them into the flour with the hand. Do not beat the eggs before putting them in. Bake in hot oven.

Mrs. Lilly M. Robertson, Kerman

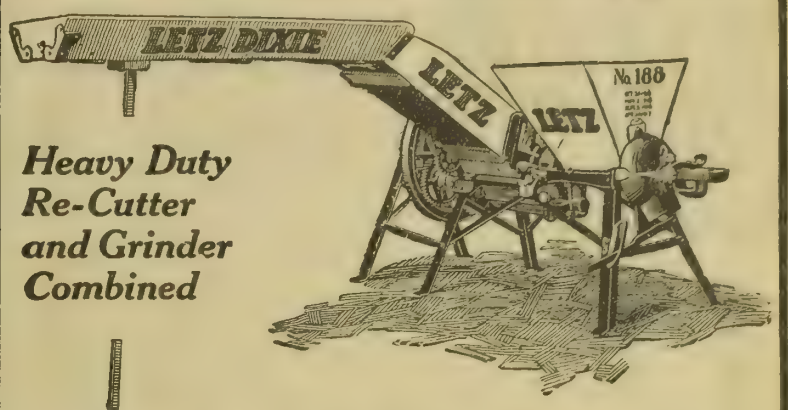
Soft Cookies. — One cup butter or shortening, 1½ cups sugar, 3 tablespoons milk, 1 teaspoon baking powder, just enough flour to roll out to a soft dough. Sprinkle with sugar before rolling, cut in rounds, bake in quick oven.

Mrs. N. R. Johnson, Redlands

Sugar Cookies. — One and one-half sups sugar, ½ cup shortening, 4 rounding cups flour, 1 cup sour cream, 3 eggs beaten separately, 1 teaspoon soda in 2 tablespoons hot water, 1 teaspoon nutmeg, ½ teaspoon salt. Sprinkle sugar on top. If sour milk is used, use more shortening.

Mrs. Chas. E. Dack, Fresno

Plain Sugar Cookies.—One-half cup butter, 1½ cups sugar, 1 egg, 4 tablespoons milk, ½ teaspoon soda, ½ teaspoon cream of tartar, 4 cups flour. Cream butter with 1 cup sugar, add well beaten egg, heat milk, dissolve



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Grinds peanut hay, velvet beans, snapped corn, cow pea hay, alfalfa, kaffir corn, corn fodder, etc. to any fineness. Handles everything wet, dry or oily without clogging.

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The Sievert Oil Burner burns either distillate or kerosene oil in cook stoves, heaters, furnaces, pasteurizers, boilers, prune dippers, dairy sterilizers, etc. Absolutely safe, odorless, very convenient and low priced. MAKES HEAT AT HALF WHAT WOOD AND COAL COSTS. Install it yourself. Write for circular and prices on different sizes. Address Sievert Oil Burner Co., 710 North Main St., Los Angeles.

Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

soda in it, and add slowly, sift cream of tartar with three cups flour and add one cup at a time, sprinkle the board with the remaining cup of flour. Roll out dough ¼ inch thick, cut with round cutter, sprinkle with ½ cup sugar and bake in moderate oven 10 to 12 minutes or until done.

Molly Mertz, Fresno

Easily Made Cookies.—One and one-half cups sugar, 1½ cups butter milk, 2½ level teaspoons soda, 2 pinches salt (if lard is used), ¾ cup lard or butter, 4 cups flour, 2 level teaspoons baking powder. Sift flour, baking powder three times. Work in lard as for biscuit, add sugar then the butter milk. A little more flour may be required to make dough that will roll. These cookies may be flavored with spices or extracts. Five dozen cookies may be made from this recipe. Bake in oven 5 to 10 minutes.

One cup butter, 3 cups sugar, 3 eggs 1 cup milk, 1 small teaspoon soda, 1 teaspoon baking powder. Flour enough to roll. Cream butter and sugar together, add the well beaten eggs, then stir in the milk with the soda dissolved in it. Use any flavoring desired. Ground nuts or caraway seeds will make a variety and are good. This will make about 120 medium sized cookies.

Mrs. H. Warren Shepard, National City

Orange Jumbles.—One pound granulated sugar, 1 pound butter (not a buter substitute), 6 eggs, juice of 3 large oranges. A little grated rind may be added. Flour sufficient to make as soft a dough as can be thinly rolled. Cut in any desired shape and bake in quick oven. We think these excellent.

HINTS FROM HOUSEKEEPERS

Salads and Sandwiches

In response to request of Lola McKenzie, Douglas City, in your paper of August 6, I submit a few of my salads and sandwich fillings:

Salads:

With potato salad for foundation add: (a) finely shredded lettuce, (b) finely cut boiled, fried or roasted meat of any kind, (c) any leftover cold fish, (d) chopped or sliced boiled eggs, (e) combination of any of these additions.

Macaroni in very short lengths, cooked in well salted water used in place of potato for foundation of any as above.

Tomato, young onion, cucumber, shredded lettuce with mayonnaise. Add any left over string beans, peas or beets.

Nests of finely shredded lettuce containing hard boiled eggs quartered lengthwise or little balls of cottage cheese, served with mayonnaise.

Olives, shredded canned or fresh pimiento or sliced sweet pickle added to any fish or meat salad.

Diced celery (or seeded muscat grapes, canned or fresh), diced apples and walnut meats with sweetened mayonnaise. (Add shredded cocoanut to any fruit salad.)

Seeded muscat grapes, sliced peaches, apricots, pears, candied cherries, bananas, oranges, grape fruit, with sweetened mayonnaise, Canned fruits with juice well drained off is satisfactory.

Note.—Pour a little vinegar over diced potato before adding dressing to potato salad. Mayonnaise for fruit salads should be sweetened with powdered sugar. Beat powdered sugar into thick sour cream and add vinegar to taste for a new salad dressing for fruits or fresh vegetable salad, especially cucumber.

Sandwich Fillings:

Equal parts peanut butter and chopped raisins. (Raisins steamed or dropped in boiling water are improved.)

Equal parts peanut butter and chopped dates.

Equal parts peanut butter and mayonnaise dressing.

Note.—Any of these additions remove that tendency of peanut butter to cleave to the tongue or roof of mouth.

To deviled ham, potted meat or any of the canned sandwich spreads add: (a) chopped olives, (b) chopped pimientos, canned or fresh, (c) chopped sweet pickles. Grate cheese and mix with chopped pimientos.

Spread lettuce leaves with mayonnaise or boiled dressing, fold over or lay another leaf on top so dressing does not come in contact with the bread and butter. To vary this sprinkle over the dressing: (a) chopped walnuts, (b) chopped olives, with or without chopped pimientos, (c) chopped sweet pickles, (d) grated cheese, (e) yolk of hard boiled egg. Any of these are especially good with graham bread.

Lettuce and salad dressing filling with thinly sliced day old peanut butter bread.—Subscriber, Santa Maria.

Pickles That Will Keep

One gallon vinegar, one cup salt, one cup ground mustard, four cups brown sugar. Wash cucumbers and put in this mixture as they are gathered. Put in earthenware jars or glass, keeping the pickles under solution with plate and weight. Must have pure apple vinegar or they will not keep. If in jars cover well with cloth or paper.—Mrs. Adaline Brubaker, Lindsay.

Salads and Sandwiches

Replying to the subscriber's request for salads and sandwiches, I am sending recipes which I use and find very practical.

Club Sandwich.—Butter both slices of bread thinly and spread each with Durkee's salad dressing which can be purchased at any grocery. If you have them, lay a crisp lettuce leaf on each slice, but it is good without. Cover one slice with slices or small pieces of boiled or baked chicken, then a layer of bacon cut thin and fried crisp. Place another slice of bread on this and cut in triangles.

Nut Sandwich.—Butter two slices of bread generously. Sprinkle thickly with nut kernels chopped not too fine. Boston brown bread makes delicious sandwiches with nut filling. Butter the two slices of bread and spread generously with the following: 1 egg well beaten, 1 tablespoon butter melted, ½ teaspoon salt, 2/3 cup weak vinegar, 1 teaspoon sugar. Boil till it thickens. Let cool and add two-thirds cup sliced or coarsely chopped cheese. This will keep indefinitely.

Ham ground and mixed with any salad dressing is also a good sandwich filling.

Try adding sliced cucumbers with potato salad. It is a pleasant change. —Mrs. Henry Dirvin, Mountain View.

Cheese Cakes

This is my most valued recipe, having been a dainty in my mother's family for years: ½ cup butter, 6 egg yolks, 6 tablespoons sugar, 1 teaspoon cinnamon, 1 nutmeg grated, pinch of salt, soda size of pea. Beat all together and put in baked crusts, baked in muffin pans. Bake and cover with meringue made from the beaten whites of the eggs and one-half cup sugar beaten stiff. They are delicious. Enough for about 12.—Subscriber, Ramona.

HOUSEHOLD QUERIES

Vinegar "Bees"

We get so many good things from this paper I am always interested. Now may I ask a question? Does anyone know anything about "a something" to start vinegar with? It is sometimes called vinegar "bees." And where can we get it? I am told it comes in a dry form and when put in sweetened water will soon begin to work and in a few days will be good vinegar.—Subscriber, Riverside.

Some time ago vinegar or wine "bees" were widely advertised and recently have been heard of again since the home brewers have been active. The United States department of agriculture reports that the preparation is of no value. Our inquirer will find complete article on vinegar making in the Cultivator of August 20, page 187, written by a specialist in food preservation, W. V. Cruess of the state university. In this article he states that the starter to use is vinegar, one pint to one gallon of fermented liquid. Yeast is also used in the process.

Preserving and Drying Figs

On page 77 of the issue of July 23 I read an article on "Home Canning of Fruits" and in it the statement,

The Cultivator Patterns

3687. Girl's Apron.—Cut in 4 sizes: 4, 6, 8 and 10 years. An 8 year size will require 1⅝ yards of 27 inch material. Price 10 cents.

3686. Ladies' Dress.—Cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. A 38 inch size will require 4⅞ yards of 42 inch material. For panel, collar and cuffs of contrasting material 1⅝ yards is required. Price 10 cents.

3702. Girl's Dress.—Cut in 4 sizes: 8, 10, 12 and 14 years. A 10 year size will require 3¼ yards of 40 inch material. Price 10 cents.

3691. Ladies' House Dress.—Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size will require 4⅞ yards of 36 inch material. The width at the foot is about 2 yards. If made of contrasting material, collar, belt, cuff and pocket facings require ⅝ yard. Price 10 cents.

3376. Girl's Dress.—Cut in 4 sizes: 2, 4, 6 and 8 years. A 4 year size will require 2⅝ yards of 36 inch material. Price 10 cents.

3685. Misses' Dress.—Cut in 3 sizes: 16, 18 and 20 years. An 18 year size requires 4⅞ yards of 38 inch material. The width of the skirt is 2¾ yards. Price 10 cents.

3434. Girl's Dress.—Cut in 4 sizes: 6, 8, 10 and 12 years. A 10 year size will require 3¼ yards of 36 inch material. Price 10 cents.

3692. Ladies' Apron.—Cut in 4 sizes: Small, Medium, Large and Extra Large. A Medium size requires 3¾ yards of 36 inch material. Price 10 cents.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH

HOW TO ORDER PATTERNS

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cents) stamps for each number. In order to furnish our readers with the very best **NEW YORK** styles, all patterns ordered are filled in **NEW YORK**. Therefore, we promise to deliver all patterns ordered within **TWO WEEKS**; we guarantee safe delivery of all patterns.

CATALOGUE NOTICE

Send 15c in silver or stamps for our Up To Date Fall and Winter 1921 Catalogue, containing over 500 designs of Ladies', Misses' and Children's Patterns, a concise and comprehensive article on dressmaking, also some points for the needle (illustrating 30 of the various simple stitches) all valuable to the home dressmaker.

PATTERN DEPARTMENT
California Cultivator
Los Angeles

"Figs are better preserved than canned." I would appreciate it very much if you could send me a recipe for preserving figs. Am very sorry a copy of your paper did not fall into my hands in time to have gotten this recipe. Am also very much interested in a good method of drying for home use.—Subscriber, Orange.

Methods of preserving figs are given by Mr. Cruess on page 830 of the Cultivator of June 25; directions for drying figs on page 780, issue of June 11; drying in syrup, page 189, issue of August 20. Copies are mailed to this inquirer. Just a hint to others interested—save your Cultivators!

Candying Figs—Other Fig Recipes

Would like very much to have recipe for candying figs, or any fig recipes.—Subscriber, Fairmead.

Directions for candying figs and other fruits were given on page 780 of the Cultivator of June 11, copy of which will be mailed inquirer. Other recipes for figs are:

Fig Marmalade.—Use only fully ripe figs. When they are considerably wilted they are cut. Cut in halves, remove pulp; mash and strain through coarse sieve. Put into a glazed dish and place the latter in boiling water. Boil constantly for one-half hour and then preserve in sealed glass jars, like canned fruit. This marmalade is very fine; can be eaten with meat or alone with cream. It is a fine relish if made from good, sweet figs.

Fig Jam.—Boil sweet dried figs with some syrup till all the juice is thick and syrupy, then run figs, syrup and all, through food chopper that will grind it into a paste. This paste is fine for use wherever a jam can be used, and can be made more easily than any jam or jelly.

Fig Paste.—Pick the figs fully ripe, split and remove pulp, mash and strain and let come to a boil, constantly stirring. To 10 pounds of fig pulp add 1 pound grated cocoanut and the juice of one lemon. After boiling a half hour spread on plates and dry in the sun. When fully dried keep in air tight place if possible. When ready to use soak in warm water overnight and boil in the same water.

Figs and Grapes.—White figs and Muscat grapes are sometimes preserved together, the second crop of figs coming in season to can with the grapes. Pick the figs when their skins begin to crack; peel, weigh and allow one-half pound of best granulated sugar to one pound of the fruit. Mix the fruit and sugar carefully (not breaking the figs), and let stand overnight. In the morning cook slowly on the back of stove, stirring carefully at intervals. In the morning also prepare your Muscat grapes by picking them from their stems, washing, weighing and allowing one-fourth pound of sugar to one pound of fruit (and as many grapes by weight as figs). Cook in another kettle, using only a very little water—just enough to keep them from burning. They will need cooking nearly an hour. When both fruits are done, mix carefully together, let come to a boil, and can.

TOILET NEEDS AND HELPS

To prevent wrinkles from coming long before they should, always use rainwater for washing the face, then be sure that you use a good and safe face powder and a good skin food. One of the safest skin foods is fresh goose grease, and next to it poultry fat of any sort as this is readily absorbed by the skin and it can be clarified and perfumed to suit one's taste. Hot milk is a safe and nourishing lotion for the skin to restore its plumpness. Lay linen wet in it on the cheeks after massage, not before. With care probably cheeks can be made firm and round by constant feeding of the pores and rubbing upward.

Cucumbers are a natural cosmetic. The juice of this vegetable freshens and clears the skin, but when desired for whitening, use the part lying near the skin. The juice of fresh cucumbers can be heated to the boiling point, then skimmed and bottled. A teaspoon of this juice should be applied to the face night and morning, letting it dry on.

When badly sunburned, do not wash the face soon after or in cold water. Wipe it gently with cold cream and dust lightly with corn starch. If you do wash it, use water as hot as can be borne, dip soft cloths in hot water and lay them over the face. This is an excellent way to treat pimples on the face, ivy poison or any skin eruption, only a little granulated boric acid should be dissolved in the water.

This saturated solution of boric acid is one of the best lotions for sore eyes. For boils and styes there is no safer and more effective remedy than this solution. It is much used to check perspiration by applying after the bath and allowing it to dry on, and for odorous feet wipe off with the solution and sprinkle powdered alum in the stocking. This solution is invaluable where there are infants and small children to prevent chafing, heat and hives. If you have a bunion that is very sore, apply iodine every night with a small brush or feather until all soreness is gone, then wash it every night in strong salt water and rub gently with the hands to increase circulation. For excessive perspiration of the feet, bathe them in very strong salt water every night. Equal parts of bay rum and glycerine will remove callous spots from the feet and will soften hard corns if used daily, but nothing will do much good unless all pressure is removed from the tender spots so far as it is possible.—A. M. H.

GIVE YOUR CHILDREN MILK

Many a farmer who understands the importance of bone building in the young farm animals forgets entirely that his children are subject to the same requirements. Every farmer knows that his calves are inferior if they do not receive sufficient milk. The same applies to children.

The extreme importance of milk in the diet of children lies in the fact that milk is one of our richest calcium giving foods, and calcium is an essential bone building mineral nutrient. The calcium requirement of the child exceeds that of the adult. Meat is very low in calcium, fruit and vegetables contain small amounts, a few of the green vegetables quite a large amount.

But the main source of calcium is milk. There is more calcium in a quart of milk than in a quart of lime water. A quart of milk a day for each growing child is a desirable allowance.—Colorado Agricultural College.

SPOON FLIVVER ANTHOLOGY

Here lie the remains
Of Chester Sapp;
He drove his car
With a girl on his lap.
—Washington (Pa.) Observer.

Poor Chester might still
Have been alive
Had he only taught
The girl to drive.
—LaMonte (Mo.) Record.

The moral learned
From this sad loss
Is—Drive a buggy
And a gentle hoss.

DISCOURAGING

Teacher (in cooking class)—"What are you crying about, Mary?"

Mary—"I've boiled (sniff) this can of tomatoes (sniff) for nearly two hours and the can (sniff) won't come off."

RICE A LA CLAUDE

Chop one onion very fine, put in saucepan with one teaspoon olive oil, one tablespoon melted butter; let onion boil until yellow and done, then add one cup washed California rice and four cups chicken broth, beef juice or any kind of stock; add salt and pepper to taste, bring to boil, cover the saucepan and put in oven for 25 minutes; before serving add one-half cup grated cheese.—Victor Hirtzlee, Maitre de Cuisine, Hotel St. Francis.

GENTLE REMINDER

"The storm burst upon us so suddenly we had no warning of its approach," related the tornado victim. "In an instant the house was demolished and scattered to the four winds. How I escaped being torn to pieces I do not know."

"Good Lord!" ejaculated little Mr. Meek. "That remnids me, I almost forgot to do an errand for my wife."

Matrimony sometimes means a month of honey and years of vinegar.

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BLACK and CITRICOLA Scale
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Better service is assured by the advertiser if when writing you mention the California Cultivator.

FOR AGRICULTURAL UPLIFT

(Continued from Page 208.)

of rivalry, but more than all because of this new spirit of progress each wishes to show what can be done with the materials at hand. We believe there is another development that makes these fairs worth while and that is the genuine friendliness and cooperation in each center that finds expression in community exhibits. Through the farm bureau the farmer is discovering how much better it is to pull with his neighbors than to pull alone, and how much more can be accomplished by team work for community and other betterments than by individual effort. There is also in our fair the element of honest pride in work well done and in its just reward, as well as pride in a county where such things can be accomplished. Local pride because of real achievement prompts each center to do its best.

These things, then, we want our visitors to see in our fair; not only fat stock, beautiful fruit, fine needlework and agricultural marvels, but real progress, friendly cooperation, mutual helpfulness and pride in our county and in our work.

Kings County Fair, Hanford, September 19-24

The closest and most helpful cooperation is being shown this year between the county farm bureau and the fair association in the development of plans for the 18th annual Kings County Fair, September 19-24. This, the oldest county fair in California, has always been essentially an educational exposition for the progressive farming and stock raising people of this district, and this year the showing of livestock, of agriculture and horticulture, of the interesting work in woman's realm, and in all other departments, promises to be bigger and better than for many years past.

Eight of the wideawake farm centers of the county farm bureau are entered in the competition for best community exhibits, and rivalry is the very keenest. A new class added this year offers prizes for stock and agricultural exhibits for the boys' and girls' clubs of the county, and the educational work on county fair exhibits will be started with the younger generation.

Through a cooperative effort by the three fairs of the central San Joaquin Valley district, Tulare, Fresno and Kings Counties, in sending out joint notices and premium books for the "Central California Fair Circuit" stockmen in all parts of the state are planning to show at all three fairs, which run for three consecutive weeks, and from entries already coming in for this fair the stock show this year is to crowd the housing facilities.

A complete revision of the premium list and the increase of premiums offered in every department has brought the total close up to $10,000.

San Joaquin County Fair, Stockton, September 12-17

To stimulate and encourage the production of greater variety, larger quantities, and a better quality of agricultural and horticultural products, and to promote the breeding of better poultry, hogs, horses, cattle, sheep and goats. Those are the aims, it can truthfully be said, that were uppermost in the minds of the few far-seeing men and women who got behind a project in 1919 to revive the San Joaquin County Fair Association. Probably the farm bureau of San Joaquin County should be given the credit for bringing to the attention of the people the importance of holding fairs of this kind. At least that organization took a very prominent part in creating an interest and in aiding the officials in carrying through the vast amount of work the first year. That organization still takes a leading part in the local fair.

The supervisors set aside $50,000 to build one of the series of buildings needed. This was agricultural hall, 90 by 300 feet. It is now nearing completion and will be thrown open before September 12, the opening date of the fair. The grandstand will also be remodeled and an additional 115 feet will be built on the east end. Underneath this new portion space is being arranged to house the exhibits of the women's home department of the farm bureau, Red Cross, childs' welfare and the educational department.

San Fernando Valley Fair, San Fernando, September 19-24

The San Fernando Valley Fair, which is the official Los Angeles County Fair, will open its gates, September 19-24, and promises the biggest event of its kind.

The ten ambitious valley towns, with M. H. Adamson of the Adohr Stock Farms acting as chairman of the livestock committee, have organized a livestock show that will be equal to the one held last year at Exposition Park, Los Angeles. Some 800 of the best cattle owned in Southern California will be exhibited. There will also be the official poultry show of the American Poultry Association for Southern California for 1921, under direction of E. J. Hammond.

Another leading feature will be a working tractor demonstration and a "still" exhibit of every variety of power farming machinery. This department, with Robt. M. O'Neil at its head, is awaking the old interest shown in the demonstrations at the La Brea fields.

Exhibits of agriculture, horticulture, industries, domestic science and art and a baby show will all have their places, and also, of course, there will be a Midway with its riot of fun.

A special attraction is the horse show staged by Hamilton Horse Bassett. As $1,000 will be awarded each night in prizes, this will be known as the $1,000 a Night Horse Show. There are already 220 applications for entry, many from Santa Barbara, San Francisco, and as far north as Oregon and Washington. The arena where this show will be held each evening will be 150 by 300 feet.

On Saturday afternoon in the arena there will be a special matinee for children, at which will be given away a $500 outfit of a pure bred Shetland pony, cart and harness. Every child entering the grounds during the week will be given a ticket on the pony outfit. Drawing will be held at 2 o'clock at the matinee.

Inyo County Fair, Bishop, October 4-5

We expect to exhibit at our fair the varied resources of our county and believe it will be instructive and educational, encouraging more and better production in all lines of agriculture, horticulture and stock raising, urging systematic sampling and grading with cooperative buying and selling by the producers. Further, we expect to show to the prospective buyer and homeseeker that it will be to his interest to consider Inyo County before investing. Inyo, the county that yet has land for sale with water sufficient to irrigate it and at a price that persons of limited means can reach, produces all kinds of grain, root crops of all characters, fruit of all varieties except citrus, livestock of all classes to perfection. Dairying perhaps is the leading line for persons with limited means.

And, too, we have mineral resources rare, abundant and valuable. The high Sierra, snow capped Mt. Whitney, the many beautiful mountain streams and lakes stocked with trout make a veritable tourist's resort. All these we expect to exhibit by specimens, photographs, demonstrations, illustrated lectures, and in various ways to advertise our county and benefit our people. In fact, we aim to have a real county fair, with variations.

Pacific International Exposition, Portland, Oregon, November 5-12

The Pacific International Livestock Exposition is scheduled to follow all other county, district and state fairs throughout the Pacific Coast and Intermountain country, and so that there will be ample time for its champions in the meat breeds to go on to Chicago to compete with champions from other sections at the International Livestock Show in December.

Of first importance is the educational value of the Pacific International. By bringing together the best pure bred livestock of a dozen Western states and from western Canada. this stimulates a healthy rivalry. Judging demonstrations and contests, lectures by experts, moving pictures covering all manner of agricultural and livestock topics in a constructive way, and many other features make stock show week at Portland an educational opportunity which attracts every year thousands of seasoned breeders, young men just beginning to build up pure bred herds, agricultural students and enthusiastic juvenile club workers from far and wide.

Two years ago, through the cooperation of public spirited business men and leading breeders of the Pacific Coast, an immense pavilion, costing $250,000 and erected on a $75,000 site 15 acres in area, was completed in

(Continued on Page 221.)

SIR AAGGIE MEAD

He may be justly rated as one of the best bred bulls of the breed today, and his pedigree contains the blood that through sheer merit in the production lists and in the show ring, has come to be the most highly regarded in California.

—Consider the following facts about this outstanding young sire:

HIS THREE NEAREST DAMS AVERAGE:

Butter	2 years	2,201.87 pounds
Milk	2 years	44,997.90 pounds
Butter	1 year	1,229.74 pounds
Milk	1 year	25,274.86 pounds

FIVE OF HIS SEVEN NEAREST DAMS AVERAGE:

Butter	2 years	2,112.30 pounds
Milk	2 years	44,278.90 pounds
Butter	1 year	1,177.11 pounds
Milk	1 year	24,854.10 pounds

—Six of his seven nearest dams have made world's records or have produced world's record daughters.

—He combines in close manner the blood of De Kol of Valley Mead, Aaggie Acme of Riverside, and Aralia De Kol, three great cows that rank among the breed's greatest foundation dams.

—He is a three-quarter brother to Sir Aaggie Mead De Kol that sold in the Philadelphia National Sale for $11,000.00.

—He himself sold at public auction for $9,250.00, the second highest price on record in California.

—He has already sired an outstanding lot of calves that have met with instant favor from all who have seen them.

—He is being mated with the select females in both our herds, including upwards of 30 daughters of King Korndyke Pontiac 20th, the $12,000.00 son of Miss Valley Mead De Kol Walker.

IF YOU ARE INTERESTED IN INTRODUCING THE HIGHEST DEGREE OF TYPE INTO YOUR HERD, BACKED BY SOME OF THE BREED'S GREATEST YEARLY RECORD PRODUCTION, KEEP IN TOUCH WITH US FOR A YOUNG SON OF THIS ROYAL YOUNG SIRE.

OWNED JOINTLY BY

F. S. BORROR & SON
TIPTON, CAL.

W. J. HIGDON
TULARE, CAL.

THINK!

We believe that nothing in California agriculture will pay bigger dividends than a little honest-to-goodness thinking on the subject of present conditions and future prospects in the business of breeding purebred cattle of all breeds.

California breeders are today conducting their business upon an unusually sound and excellent basis.

Some of the world's greatest foundation blood has been freely drawn upon for foundation material, and its development in the hands of California breeders has resulted in the highest awards in the world's greatest beef cattle show, and world's record production for both milk and butter in numerous dairy cattle classes.

There is well under way in California a demand for registered breeding cattle that will tax the capacity of our herds for many years to come, assuring a stable market at substantial prices, within the borders of this state alone.

We could write pages of sound, logical reasons why NOW is a time of real opportunity for the foundation of new breeding herds. You can buy real foundation cattle right here at home, cattle that are born to California conditions and do not need a year or two in which to become aclimated in order to go ahead.

You can't go back to a place you have never left, nor can you deflate anything that has never been inflated. Prices of registered cattle in California have never left normal, nor have they ever been inflated, so there is no opportunity to apply the neatly coined phrases "back to normalcy" or "deflated prices" to them.

We list briefly below a list of public sales of registered cattle for which we have already set dates for the fall season. We will gladly supply catalogs of any or all sales to interested parties who write for them.

Also please remember that we extend reasonable credit to responsible parties in most of the sales managed by us, and if interested in that respect you may make your application to us at any time.

California Breeders Sales and Pedigree Co., 211-212 Ochsner Bldg., Sacramento, Cal.

70 Registered Holsteins

Complete Dispersal of

S. O. Walker Herd

Visalia, Cal.

Tuesday, October 4

Including the famous bull KING OF THE BLACK AND WHITES and 35 of his daughters, mostly 2 year olds. A wonderfully well bred herd, in excellent condition.

Guaranteed breeders; no tuberculin test certificates.

45 Registered Holsteins

A choice draft from the herd owned by

Robt. T. Curtis & Son, Exeter, Cal.

The Sale Will Be Held at

Tulare Sale Pavilion, Tulare, Cal.

Wednesday, October 5

This sale includes the great 34 lb. 4 year old, Coloma Beauty Butter Maid, and her daughter and two other heifers sired by King Korndyke Pontiac 20th, the $12,000.00 son of Miss Valley Mead De Kol Walker. It is a splendidly bred offering throughout.

Guaranteed breeders; tuberculin tested and sold subject to retest.

55 Registered Holsteins

A complete dispersal of the choice herd owned by

Alex. Whaley, Tulare, Cal.

Tulare Sale Pavilion

Thursday, October 6

This sale includes the noted 30 lb. cow Melba Hengerveld, and 20 daughters of Sir Aaggie De Kol Acme 2nd, one of the most richly bred yearly record bulls of the breed. A herd of choice individuals and large producers.

Guaranteed breeders; tuberculin tested and sold subject to retest.

37 Registered Holsteins

A complete dispersal of the fine herd owned by

John Saxer

Modesto, Cal.

Wednesday, October 12

This is a herd of very high average type and substantial breeding, including three daughters of the great bull Sir Skylark Ormsby Hengerveld, a daughter of King Segis Pontiac, and a daughter and son of the sensational 3 year old Moorland Colantha Rose.

Guaranteed breeders; tuberculin tested and subject to retest.

35 Registered Herefords

The semi-annual sale of picked tops from leading western herds under auspices of

Pacific Coast Hereford Cattle Breeders Association

J. I. Cazier, Pres., Wells, Nev.

J. A. Bunting, Secretary
Mission San Jose, California

California National Livestock Show Grounds

San Francisco

Thursday, October 27

Guaranteed breeders; tuberculin tested.

CALIFORNIA BREEDERS' SALES AND PEDIGREE COMPANY — PUBLIC SALES OF HIGH CLASS LIVESTOCK

WE HAVE PAID
MORE THAN

$2,000,000.00

(TWO MILLION DOLLARS)
IN LESS THAN FIVE YEARS TO
BREEDERS
WHO HAVE SOLD

Purebred Registered Cattle

IN PUBLIC SALES MANAGED BY US

INCLUDING THE FOLLOWING BREEDS:

Holstein-Guernsey-Jersey
Hereford-Shorthorn-Ayrshire

AT THE LOWEST SELLING
EXPENSE IN EFFECT IN AMERICA

We Render *Complete Service* from the Smallest Detail of Sale Procedure to the Carrying of Notes Received in our Sales.

CONSULT US WHEN YOU NEED THE BEST IN SALE MANAGEMENT

CALIFORNIA BREEDERS' SALES AND PEDIGREE CO.
J. M. HENDERSON, President C. L. HUGHES, Sales Manager
211-212 OCHSNER BLDG. SACRAMENTO, CALIFORNIA

50 Registered Guernseys

A sensational offering from

Edgemoor Farm
Santee, Cal.

Owned by Walter H. Dupee, and selling at

Rhoades & Rhoades Sale Pavilion
Hynes, Cal.
Thursday, October 20

Including 40 choice young females, rich in May Rose breeding, selling in calf to the great MASTERPIECE OF EDGEMOOR, for which $40,000.00 was refused. Ten choice young bulls also selling. The Guernsey event of the season on the Pacific Coast.

Guaranteed breeders; tuberculin tested.

70 Registered Holsteins

One of the highest class offerings yet made in Southern California, from the high class herd at

Sycamore Acres, Nuevo, Cal.
Owned by Robt. N. Clapp
and Selling at
Rhoades & Rhoades Sale Pavilion
Hynes, Cal.
Friday, October 21

An offering of splendid type, rich in the blood of King Segis, including many high record females and several famous show ring winners.

Guaranteed breeders; tuberculin tested and subject to retest.

75 Registered Herefords

The second annual offering from

Nevada Hereford Ranch

Owned By

J. H. Cazier & Sons Co., Wells, Nev.

Will Sell at

State Fair Grounds, Sacramento, Cal.

Tuesday, November 1

A wonderful offering, consisting chiefly of daughters of Harris Standard 2nd bred to the $10,000.00 Beau Blanchard 76th, including also several top young bulls and practically the entire show herd of this year.

Guaranteed breeders; a Federal Accredited herd.

65 Registered Holsteins

One of the most richly bred offerings ever made from the famous herd owned by

A. W. Morris & Sons Corporation

Woodland, Cal.

Thursday, November 3

This is going to afford an extraordinary opportunity to buyers.

Guaranteed breeders; tuberculin tested and subject to retest.

75 Registered Holsteins

The first individual public sale from the big herd at

Palo Alto Stock Farm

Palo Alto, Cal.

Wednesday, November 9

Including many outstanding individuals, high record young females, and a wealth of rich breeding.

Guaranteed breeders; tuberculin tested and subject to retest.

MASTERPIECE
OF EDGEMOOR

The Greatest of All Guernsey Bulls

Sired by **Royal Rose King of Edgemoor** who was by **Imp. Itchen May King, grand** champion of the P. P. I. E. in 1915 and grand champion of the 1920 National Dairy show. **Imp. Itchen May King** also sired **Dauntless of Edgemoor,** grand champion of the 1919 National Dairy show and **Vedas May King** who won championship honors at Portland last year.

Royal Rose King of Edgemoor was out of **Belladia,** the highest record Guernsey in California, who made 934 lbs. of butter fat in 365 days in a certified milking barn.

Masterpiece of Edgemoor

is out of **Jesebel of Edgemoor** the highest record daughter of the great **Ne Plus Ultra.** She is the State Champion in her class and stands 4th in her class for the U. S. with 12,434.9 lbs. of milk and 748.3 lbs. of butter fat at 2½ years of age.

Edgemoor Farms

is offering for sale some young cows and heifers safe in calf to Masterpiece. The females are excellent individuals from A. R. dams and the offspring from this mating will be extremely valuable.

All Animals Guaranteed Free From Tuberculosis

Write for Information

EDGEMOOR FARMS

W. H. Dupee, Owner

Santee, San Diego Co., Cal.

Economy Stock Powder
and
Economy Germicide Dip

Prices Have Been Greatly REDUCED

These reduced prices will prevail only until such time as our present stock in the warehouse is sold.

Send your order to us direct.

Economy Hog and Cattle Powder Company

Hearst Building **San Francisco, Cal.**

$12.00 for 100 lbs. DELIVERED to your R.R. Station

POISONED BARLEY for Squirrels

GUARANTEED to be strictly GOVERNMENT FORMULA

ORTHO BRAND

CALIFORNIA SPRAY-CHEMICAL COMPANY
WATSONVILLE CALIFORNIA

Mission Herefords
Ultimately
Why Not Now?

We want everyone to see this wonderful herd

Mission Hereford Farm
J. A. Bunting
Phone 6 F 14
Mission San Jose **Cal.**

When Writing Advertisers Mention California Cultivator.

GETTING AHEAD BY GOING BACK —TO LIVESTOCK

(Continued from Page 199.)

lish pure bred breeding herds. The production of pure bred livestock for breeding purposes is a specialized business for which not every man is suited to make a success. Rather is he urging that more owners of California ranches break away from the old and discredited specialized crop system of farming and in its place make their plans to keep what dairy cattle, beef cattle, sheep or hogs their ranches can safely carry as adjuncts to their other farming operations.

In adopting any plan in which livestock is a part this fact should be kept in mind: The time has passed when any man can justify the handling of scrub livestock, and in this period of readjustment changing economic conditions make it imperative that only efficient livestock be used. Efficiency in livestock management comes through the use of well bred animals that are given proper care.

The term "well bred" may apply to grade animals or may be confined to simply include registered pure breds. Pure bred animals are almost invariably more efficient than grades and if possible an effort should be made to at least have part of the herd or flock made up of registered animals—but in any case no man should be content to own other than a pure bred sire.

If pure bred livestock is purchased for founding a herd or flock the purchase should be made because of the admitted greater efficiency—the real dollar and cents worth—over common stuff rather than with the idea of at once branching out as a "breeder."

There never was a more propitious time to make a start with livestock than will be presented this fall. Prices, on the average, for breeding material are near pre-war levels and feed prices are such that a satisfactory margin is assured. The above facts, taken together with a very real need in California for more and better livestock, combine to make the business very attractive. No fear need be held that the livestock business will be overdone.

Tht number of cattle for each 100 persons in the United States today is one-third less than in 1900, the sheep supply is reduced nearly two-thirds, while the number of hogs is fully 41 per cent smaller now than then, according to figures compiled from the federal census reports.

This "alarming shortage" in livestock is such as to furnish a meat supply only about half as great for each person in the country as formerly. It is said that "the decline during recent months in prices to producers is so utterly unjustified as to constitute the gravest economic crime ever perpetrated upon the farmers of America."

Other figures were given to show that 20 per cent fewer pounds of meat were exported during the present fiscal year than during the previous year, while imports totaled 175,000,000 pounds of fresh meats, or nearly four times as much as two or three years ago. More than half of these imports, it is said, were mutton and lamb from Australia, or imports 25 times greater than the exports of the United States.

Herbert Myrick, compiler of the reports, charged that the U. S. department of agriculture for years has overestimated the number of sheep and swine and that the department's estimate for January, 1920, was in error no less than 28 per cent, as he said that the census found only 34,900,000 sheep, compared to the govtrnment's estimate of 48,600,000.

"The census also reveals 14,000,000 fewer hogs than government estimates," he continued, "having found only 59,000,000 pigs on farms, or 19 per cent less than the department's estimate of 72,000,000. The steady decline in the number of cattle since the census was taken is emphasized by the decrease of nearly 18 per cent in the number slaughtered during the past 11½ months.

In California, according to the census report, less than ten per cent of the farms reported pure bred livestock. Only about four per cent reported owning pure bred swine totaling around five per cent of the total swine population. About one and one-quarter per cent of our farmers own pure bred beef cattle and that ownership represents but a trifle over one per cent of the total number of beef cattle. Fewer than three and one-half per cent of our farmers own pure bred dairy cattle and these pure breds represent about two and one-half per cent of our dairy cattle population.

From the above figures it would appear that so far as this state is concerned the "point of saturation" as regards our pure bred livestock population is rather far removed and need cause no great concern. In view of the acknowledged superiority of well bred livestock over the commoner sorts is not the above condition surprising in a state enjoying a reputation for progressiveness?

How about you, Mr. Cultivator Reader? Have you been following a safe farming practice so that at present you are meeting conditions successfully, or are you finding the going pretty hard? Why not take a little time off and check up your business and if it appears that you can fit livestock into your operations why not make a determined start this fall? Let your own experience and the experiences of the most successful farmers of the nation be your guides.

In this connection the state fair next week and the various district and county fairs will afford a splendid opportunity to study the different types of livestock and a few days spent at these shows may point the way for many California ranchers to get ahead by going back to livestock.

EDUCATIONAL EXHIBITS AT SOUTHERN CALIFORNIA FAIR

The United States department of agriculture will have some very interesting and informational exhibits of departmental work at the Southern California Fair at Riverside, October 11 to 16. The work of the forestry service, biological survey, animal industry, plant industry and public roads bureaus will be shown in demonstration exhibits which will in a large degree be a surprise and enlightenment to many of our people who have but a vague idea of how deeply and thoroughly the federal government is going into this work which so closely touches all the people.

The state agricultural department will also have a wonderful exhibit at Riverside of the work of the various branches of this very important department of state government. These displays will be attended by representatives of the various divisions of the department who will be at hand at all times to explain and instruct.

In placing these exhibits both the federal and state departments recognize the educational value of the agricultural fair. The exhibits are so completely demonstrational in their arrangement that they tell their own story. He who walks by and looks may read and remember. The farmer will meet face to face, as it were, the insect, the pestiferous rodent or the animal disease which has been giving him so much trouble, and this intimate acquaintance will help him in his battle.

STATE FAIR DAIRY PRODUCTS EXHIBIT

The attention of creameries, cheese factories and dairymen is called to the dairy products exhibits at the state fair which opens September 3, 1921. Last week's issue gave detailed information concerning the exhibit. Butter can be shipped in 20 pound cubes. A whole cheese should be sent, four pint bottles of milk and four half pint bottles of cream. Prizes are given on quality and appearance of package. Entry blanks and premium lists can be secured from State Agricultural Society, Sacramento.

This is an opportunity for the dairy interests of the state to show their products. Every prize winning exhibit will be labeled, giving the name and address of exhibitor.

The cow testing division of the Kern County farm bureau held election August 20.

Kern County hog auction sales will be held: Wasco, September 3; Bakersfield, 17; McFarland, 30.

A Toggenburg goat dairy has been located on Paoha in Mono Lake.

State Fair Livestock Entries

THE following list of entries in the livestock department of the forthcoming state fair is complete only to the time this issue went to press. Notwithstanding the splendid showing indicated it is known that the number of herds and flocks will be considerably increased before the show opens. We publish the list as a sort of curtain raiser for the main event that opens next Saturday at Sacramento.

BEEF CATTLE

Shorthorn

Caledonia Farms, West Sacramento, 17; Warm Creek Land and Livestock Co., Wells, Nevada, 16; T. S. Glide, Davis, 14; Pacheco Cattle Co., Hollister, 14; Estate of Thos. Dibblee, Lompoc, 11; T. T. Miller, Hollister, 10; H. M. Elberg, Woodland, 9; W. M. Carruthers, Live Oak, 8; Straloch Farm, Davis, 7; Edinger-Johnston Co., Hood, 7; B. F. Rush, Suisun, 1; Howard W. Vaughn, Dixon, 1.

Hereford

Nevada Hereford Ranch, Wells, Nevada, 16; E. A. Noyes & Son, Sutter City, 12; William Briggs & Son, Dixon, 10; Diablo Stock Farm, Diablo, 8; John A. Bunting, Mission San Jose, 8; H. H. Gable, Esparto, 4; H. A. Baldwin, Pleasanton, 4; C. S. Howard, San Francisco, 4; W. S. Duke, Gazelle, 1; H. M. Barngrover, Taylorville, 1.

Aberdeen Angus

F. B. McCay, Cathay, 1.

Steers

Single, W. M. Carruthers, 2; Carloads, Hammond Est., Corning; Kern County Land and Cattle Co., Bakersfield.

DAIRY CATTLE

Holstein

Frank Helm, Fresno; W. J. Higdon, Tulare, 8; George Junior Republic, Chino, 14; Sierra Vista Ranch, Perris, 7, M. Azevedo, Patterson, 10; J. M. Christen, Martinez, 5; H. N. Belgum, Richmond, 1; E. F. Gleason, San Jaun Bautista, 5; Six Brothers Dairy, Turlock, 7; Del Paso Heights Association, Del Paso, 1; A. Lauchert, Galt, 1; H. G. Ball, Tulare; Joquia Lucia, Tulare, 1; Dr. E. J. Weldon, Sacramento, 5; Palo Alto Stock Farm, Palo Alto; McCloud River Lumber Co., McCloud.

Jersey

Guy H. Miller, Modesto, 15; J. E. Thorp, Lockeford, 24; E. E. Greennough, Merced, 11; J. H. Sawyer, Galt, 8; H. G. Van Pelt, Waterloo, Iowa, 1; A. Cruickshank, Sacramento, 1; Seavy & Son, Galt, 2; Margaret Connant, Modesto, 1; John Bruce, Galt, 1; Austin Clark, Orland, 1; Mae O. Sawyer, Galt, 1.

Guernsey

Brant Ranch, Owensmouth, 20; A. B. Humphrey, Escalon, 18; Leonard Est Co., Grants Pass, Ore., 7; Calla Grove Farm, Manteca, 1; Loring Farnum, Ojai, 2.

Ayrshire

E. B. McFarland, San Mateo, 17; Elkhorn Farm, Watsonville, 13; Lathrop Bros., Grant Pass, Oregon, 12; E. Wyndham, Redding, 9.

Milking Shorthorn

Alexander & Kellogg, Davis, 18; Thos. Harrison, Santa Rosa, 14.

SWINE

Berkshire

H. S. Teasdale, Elko, Nevada, 15; Leonard Est., Grants Pass, Ore., 15; Italian Vineyard Co., Guasti, 30; D. J. Bastanchury, La Habra, 3; James Mills, Hamilton City, 5; A. B. Humphrey, Escalon, 27; H. W. Cannon, Suisun, 1.

Hampshires

J. M. Christen, Martinez, 5; Hayes & Harter, Grants Pass, Ore., 12; H. J. Knudsen, Perkins, 5.

Duroc-Jersey

J. C. Craig, Owensmouth, 16; Sierra Vista Ranch, Perris, 16; H. P. Slocum & Son, Willows, 31; Witherow & Stafford, Live Oak, 13; Western Laboratories, Stockton, 24; Wm. V. Mong, Whittier, 15; J. D. Rowe & Son, Davis, 7; J. E. Thorp, Lockeford, 12; Lowell J. Beaver, Fresno, 5; Cecil Slack, Napa, 1; L. W. Pray, Durham, 2; F. W. Buck, Woodland, 1; Harvey M. Berglund, Dixon; V. F. Dolcini, Davis; Ordway & Snider, Hughson, 8.

Poland China

Chas. Gatewood, Fresno, 2; Stephen & Gatewood, Fresno, 2; Straloch Farm, Davis, 14; C. E. Dack, Fresno, 7; Geo. V. Beckman & Sons, Lodi, 13; W. L. Choisser, Turlock, 6; H. A. Johansen, Fresno, 4; J. H. Cook, Chico, 2; A. Buckland & Son, Fresno, 16; Johnnie Glusing, Winton, 2; P. B. Long, Tulare, 5; California Swine Corp., Escalon, 8; Bassett Bros., Hanford, 32; A. J. Elliott, Tulare, 18.

Tamworth

Dr. J. Summerfield, Santa Rosa, 17.

Chester White

Howard W. Vaughn, Dixon, 3.
Fat classes: Napa State Hospital, Napa.

SHEEP

Shropshire

Butte City Ranch, Butte City; A. Barber Willis, Los Angeles; Estate of Thos. Bishop Co., San Ramon; G. K. Swingle, Davis; Corriedale Sheep Co., Hollister; Gordon H. True, Jr., Davis.

Hampshire

Straloch Farm Davis; Spencer Ranch Co., Cranmore; Calla Grove, Manteca; Henry Van Lear, Lodi.

Rambouillet

Wm. Briggs & Son, Dixon; G. N. Merritt, Woodland; The Corriedale Cheep Co. will have entries in the following
ritt, Woodland.
The Corriedale Sheep Co. will have entries in the following classes: Corriedale, Southdown, Liecester, Lincoln and in the grades and crosses.

GOATS

J. H. Wintz, Fair Oaks, 6; H. F. Shinker, Los Angeles, 2; Richards & Wagner, San Mateo, 10; Mrs. C. K. Harder, Sacramento, 8; Irvin H. Farr, Los Gatos, 8; Alice M. Brown, Sacramento, 5; Mrs. C. E. Ward, Sacramento, 4; Miss H. A. Wood, Pasadena, 3; M. D. Woodruff, Paradise, 20; Sacramento Goat Farm, 2; Oswald M. Toomey, Sacramento, 1; Margaret Dean, Walnut Creek, 6; Mrs. L. P. Lommel, Napa, 8; A. W. Archer, Stockton, 2.

DRAFT HORSES

Percheron

Palo Alto Percheron Farm, Palo Alto; Merrit-Bowens, Tulare; Don Pueblo Rancho, Naples; Danziger & Spaulding, Los Angeles.

Clydesdale

Estate of Thos. B. Dibblee, Lompoc; O. H. Brant, Shellville.

Shire

Merrit-Bowers, Tulare.

PREVENT SPREAD OF INFECTIOUS DISEASES

Many serious and infectious diseases, among which are anthrax, glanders, hog cholera, blackleg and rabies, together with many forms of internal parasitism, frequently attack new hosts, because of ease with which the disease is disseminated from carcasses left exposed on the surface, where they may contaminate streams as well as the soil, or be eaten by dogs or coyotes.

Too much emphasis cannot be laid on the importance of the proper disposal of carcasses of animals and fowls dead from other causes than slaughter, says Wm. H. Feldman of the Colorado agricultural college.

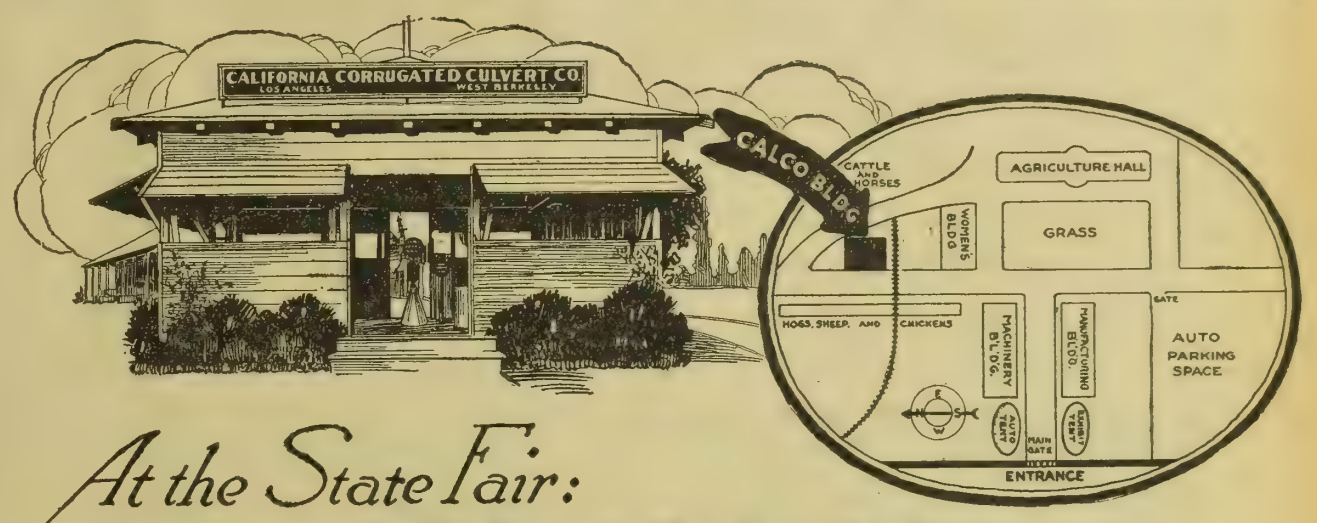
It has been shown that birds may also be responsible for the transmission of disease from infected carcasses to healthy individuals. The repulsive odor alone should be sufficient to insure a disposal which meets the requirements of modern sanitation.

Among the methods most preferred, burning, of course, comes first in efficiency. If it is not practical to burn a carcass, deep burying is a satisfactory method of disposal. Burying, however, should be deep enough to insure against attacks from dogs.

In case of a very contagious disease, such as anthrax, quicklime should be sprinkled rather liberally over the carcass before covering with dirt to insure rapid decomposition.

The Holstein Calf Club of Stanislaus County made exhibits of animals at the Patterson fair held this week.

The Glenn County farm bureau held its annual meeting at Ord last Wednesday.



At the State Fair:

Visit the CALCO Building

See Calco Products at Reduced Prices

The California Corrugated Culvert Company will exhibit its products again this year in its own building at the State Fair. You will find the exhibit interesting, and we will tell you where to find different Calco Products in use on the Fair Grounds.

Prices have been reduced on all products in proportion to the lower prices now paid for the materials of which these products are made.

Visit us at the Fair. Let us show these products to you and explain the details.

California Corrugated Culvert Company

Los Angeles
419 Leroy Street

Berkeley
408 Parker Street

Calco Sheep Trough
(Semi-circular type), Model No. 273.
Strong—Sanitary—Durable

Calco Self-Feeder for Hogs,
Model No. 258.
Time and Labor Saving—Prevents Waste

Testimonial—"SAVED AT LEAST 15%"

Lockwood, California,
July 4, 1921.

Gentlemen:
The large watering trough . . . . proved very satisfactory, both as to convenience and price—as I consider *I saved at least 15%*, comparing yours with local prices.

Respectfully,
(Signed) C. G. Heinsen, Sr.

Calco Products:

"Armco" Irrigation Specialties
Calco Hog Specialties
Calco Sheep Specialties
Calco Stock Specialties
Calco Poultry Specialties
Calco Grain Bins
"Armco" Culverts
Calco Grain Loaders

Ten Years in California Agriculture

By Frank C. Jordan, Secretary of State

I HAVE just completed an interesting study of the federal census statistics and find some startling comparative figures revealed. No one who reads them can fail to absorb a feeling of optimism. I feel it, and I say without hesitation that California and her citizens should be proud of the advance we have made and the position we hold today. We have no need to cry hard times. We have a right to be supremely happy for we are enjoying the greatest prosperity our state has ever known. We are well on our way to continue this prosperity, and I look to see the next ten years show even more remarkable progress than has ever gone before.

Tremendous Values of Farms

Turning to the figures we notice, for instance, that with an approximate land area in the state of over 100,000,000 acres we have at present 29,000,000 acres in farms which number more than 117,000 and show an increase of 29,473 in the last ten years. The value of this farm property is placed at $3,431,021,861, an increase of $1,600,000,000, or 112 per cent, in ten years. With this increase of more than a billion and a half dollars in value of farm property, the mortgaged debt on farm property has only increased $160,000,000. Another interesting fact is that the average acreage per farm today is 249, while in 1910 it was 316, and in this connection it is also interesting to note the development of intensive farming, for while in 1910 there were but 22,000 farms under 20 acres in size, today there are over 34,000. We also note that while in 1910 there were only 56,000 farms entirely owned and unmortgaged, now the census figures show in excess of 75,000 farms so owned.

Improvement of Farms

Development is further shown in the fact that the improvements of the farms, which can undoubtedly be taken as an example of prosperous condition, are placed at over $200,000,000, showing an increase of 117 per cent in ten years. The average value per acre of all farm property ten years ago was $57 as against $116 today. The yearly expenditure for labor now shows $126,000,000 as against $50,000,000 for the same period ten years ago.

Gain in Value of Fruits

Just what this farm development has meant in actual gain is best told by the following comparative figures showing the amount and value of various products, figures being based on the census reports for 1910 and 1920 respectively:

We note first the most startling increase in the value of fruits and nuts, $270,000,000 as against $50,000,000 ten years ago, or an increase of 434 per cent. In spite of prohibition the grape crop has brought approximately $65,000,000, while that of ten years ago brought about $11,000,000. Semi-tropical fruits show an increase from 16 to 90 million dollars. Walnuts brought $15,000,000 against $2,000,000 ten years ago.

Livestock Gains

In 1910 livestock on the farms was valued at $127,000,000; in 1920, at $221,000,000, showing an increase of 73 per cent. The latest figures credit the farms with 402,407 horses, 63,419 mules, 2,008,037 head of cattle, 2,400,151 sheep and 909,272 hogs. Poultry numbers 10,811,153 as against 6,087,267 in 1910, and is valued at $15,293,570. Receipts from the sale of dairy products show an increase of 175 per cent, being $52,509,964 as against $19,083,297 ten years ago. Wool was valued at $6,695,461 in 1920 as against $2,423,964 in 1909. Egg production amounted to over 57,000,000 dozen, valued at more than $28,000,000.

Over Half Billion for Crops

The value of all crops raised shows an increase of 301 per cent, $587,600,591, as against $146,526,151. Cereals are valued at $108,000,000 as against $27,000,000, and other grains at $31,500,000 as against $6,500,000 ten years ago. Value of seeds jumped from $800,000 to over $6,000,000; hay from $42,000,000 to $96,000,000; vegetables from $12,000,000 to $47,000,000; miscellaneous crops from $6,000,000 to $26,000,000; orchard fruits from $18,358,897 to $91,687,814; nut crop from 23,000,000 pounds, valued at $3,000,000, to about 67,000,000 pounds valued at $19,000,000.

We find 1,000,000 acres planted to wheat as against 487,000, and 116,000 acres in corn as against 51,000 acres at the former report.

There you have some of the more outstanding figures. Who can read them without being impressed? To me they point out a splendid progress in the agricultural development of California. They breathe optimism. They show a healthy condition that cannot be torn down by gloomy forebodings. They are the forerunner of still greater things to come. They give the lie to stagnation and depression. They stand as a beacon light and lead us to look confidently for a continuation of that spirit and pride which has made our state of California the greatest state of the Union in the past and which will continue to make it the greatest state of the Union in the future.

Diamond Bar Ranch, whose herd of Duroc-Jerseys has been an outstanding feature in red hog shows for the last two years, has advertised its show herd for sale and will not exhibit this fall. It reports a ready demand for these aristocrats of the breed and has already made sales of a boar and three sows by Mammoth Sensation Jr., eligible for the futurity and junior pig classes, to J. E. Thorp of Lockeford. Mr. Thorp also secured a senior sow pig that he will show. W. E. Bush of Covina also bought one of the junior boar pigs while the Sierra Vista Stock Farm took an exceptionally fine Ace of Pathfinders senior boar pig and two senior sow pigs by Mammoth Sensation Jr.; also a senior yearling sow by Great Orion Sensation and out of a Pathfinder dam.

MORE LIME

The Marl-Lime and Fertilizer Company has begun extensive operations on the lime deposit near San Dimas. Numerous chemical analyses of the material indicate it to be in fine condition for use as fertilizer. Situated as it is in the heart of the citrus belt transportation is a small item and the deposit will no doubt prove a boon to citrus growers whose chief trouble the past two years has been with regard to transportation.

Now is the Time to Apply

Victory Tree Spray

to your Citrus Trees, an ECONOMICAL and EFFICIENT METHOD for the control of SCALE PESTS, RED SPIDER and ALL FUNGUS TROUBLES.
We have an agent in every district.
Let him show you what it is doing; or write

Victory Tree Spray

631 Homer Laughlin Bldg. Phone 646-93 Los Angeles, Calif.

La Habra Heights

Higher and Adjoining East Whittier and La Habra Districts

3,600 acres pronounced by experts the ideal location for avocado and citrus planting. Protected from frost and wind in combination with good soil. Nearly $250,000 spent on irrigation plant, roads and other improvements. The Hacienda Country Club, with 151 acres of golf course and other recreations, is located in the center of this property.

Ideal conditions for avocado and citrus growing. Fine country club for recreation; beautiful homesites.

Any acreage desired. Low prices. Reasonable terms.

We also specialize in choice Southern California walnut, orange, and lemon groves.

Edwin G. Hart

Developer and Exclusive Agent for North Whittier Heights

727-731 Van Nuys Building Main 2606 Los Angeles

FIRST PRIZE CALF HERD AT LOS ANGELES LIVESTOCK SHOW, 1920
Reading left to right—Blanchard 1st, junior champion, out of a Harris Standard 2d dam; Nevada 5th and Carnation 4th, both by Harris Standard 2d, the last named being reserve junior champion. Each of these sell.

ANNOUNCING

Jno. H. Cazier & Sons' Second Public Sale

80 Registered Herefords

State Fair Grounds, Sacramento, Cal., Tuesday, November 1

For this offering we have selected what we believe to be the greatest lot of Herefords yet to sell in the West and an offering that in whole or in detail is of such a character as to be worthy of the attention and patronage of any man or firm seeking cattle of unquestioned worth.

In considering the above statement we direct your attention to several facts.

It is generally admitted, we believe, that our herd is the largest collection of high class cattle owned in the West; that the bloodlines back of our cattle are not alone popular but have been proven to result in the production of cattle that for ruggedness and feeding ability combined with size, bone and quality can challenge any herd.

The character of our herd bulls can be judged by the fact that the get of our senior sire, Harris Standard 2d, can be found in the leading Western herds, and that the get of our junior sire, Beau Blanchard 76th, himself grand champion at Sacramento and Los Angeles last year, have distinguished themselves wherever shown or sold.

Our herd is now on the accredited list having passed three government tests without a single reactor. Our cattle are never inside winter or summer and have always adapted themselves to California conditions.

The offering will consist of about 60 cows and bred heifers, many of the cows with calves at foot and rebred; 15 choice open heifers and 6 very select young bulls of herd heading caliber, including the 1920 junior champion at Los Angeles and grand champion at Ogden.

Practically our complete 1921 show herd sells. SEE OUR CATTLE AT THE CALIFORNIA STATE FAIR.

The Nevada Hereford Ranch, Wells, Nevada

John H. Cazier & Sons Co.

Sir Prince Aaggie Mead

CONSIDER THE TREMENDOUS PRODUCTION AND DEMONSTRATED ABILITY TO TRANSMIT PRODUCTION ON BOTH SIDES OF HIS PEDIGREE.

His sire, King Aaggie Mead, is a son of the 1,000 lb. foundation cow Aaggie Acme of Riverside, who produced the 1,331 lb. world's strictly official record cow, Aaggie Acme of Riverside, who in turn produced California's only 1,000 lb. junior 2 year old, Miss Aaggie Acme Burke.

His dam, Miss Valley Mead De Kol Walker, with two records above 1,000 lbs. butter in one year, and now making a yearly record that promises to exceed her previous best record of 1,113 lbs., is a daughter of the 1,011 lb. 4 year old De Kol of Valley Mead 2d, who in turn is out of the foundation cow, De Kol of Valley Mead.

HE IS BEING GIVEN HEAVY SERVICE IN BOTH OUR HERDS. KEEP ONE OF HIS SONS IN MIND FOR YOUR HERD SIRE.

OWNED JOINTLY BY

Fred Hartsook LANKERSHIM, CALIF. and A.W. Morris & Sons Corporation WOODLAND, CALIF.

GRAPEWILD FARMS

Guernseys and Berkshires

ESCALON, CALIF.

Our 12th year at the State Fair will not be behind previous years either in Quality or Quantity. Visit our Stalls and Pens and let us show you our Stock during the week commencing September 3rd and ending September 11th.

A. B. HUMPHREY, Proprietor.

See
Diamond G. Herefords
at the
California State Fair

This herd will be represented at Sacramento with a group of young things indicative of the general type and quality that is popularizing this herd.

Diamond G. Herefords
are Real Cattle
Raised on a Real Cattle Ranch
by a Real Cattleman
for Real Cattlemen

Scale, bone, thickness of flesh and 100 per cent health and vigor are insisted upon. I can please you as I have pleased many others.

H. H. GABLE **ESPARTO, CAL.**

(The Ranch is Located 7 Miles North of Esparto)

ORMSBY

The Holstein blood lines that insure conformation, individuality and high production focus at the

Maxwell Farms

Sir Pietertje Ormsby Mercedes | Sir Ormsby Hengerveld De Kol | Pietertje Maid Ormsby | Sir Ormsby Skylark

The high percentages of the blood of these great animals carried in our herd makes it

the Fountain Head of the Ormsby Family

Our show and production records prove we have animals that can fill every requirement.

Full calves by sons of Sir Pietertje Ormsby Mercedes out of high record daughters of Sir Ormsby Skylark ready for delivery.

Females bred to sons of Sir Pietertje Ormsby Mercedes for sale.

Every animal guaranteed a breeder and free from tuberculosis.

Visitors Welcome **Correspondence Solicited**

MAXWELL FARMS
HOLLYWOOD, CAL.

We will show at San Fernando, Ventura and Riverside. Call at our exhibit.

Bonnie Brae Guernseys

I am now able to offer at moderate prices

5 Young Bulls

2 of them are old enough for service. All are decidedly well bred and at the prices asked any dairyman can afford to own one. A Guernsey bull will increase the fat production of your herd and milk from grade Guernsey cows cannot be surpassed for richness in fat and natural color.

Hope Farm Holsteins

I have several young sons of the great sire

Sir Aaggie De Kol Acme

a son of Aaggie Acme of Riverside 2d, holder of the world's strictly official record for butter production. The dams of the young bulls were the top females in the famous Kiesel sale. They are priced to sell.

Hampshire Rams

I also offer a number of growthy, typey Hampshire rams.

All this stock may be seen and bargained for during the State Fair. My farms are just South of Sacramento and we will be glad to meet fair visitors.

EVERYTHING CARRIES A GAMMON GUARANTEE

E. A. GAMMON **Hood, Cal.**

GUASTI BERKSHIRES

The Big Modern Type

Weanling Trios a specialty: two gilts and unrelated boar. Specials for farmers and pig club boys. Herd tuberculin tested and cholera immune. Breeding stock of all ages.

ITALIAN VINEYARD CO.

Alex. M. Wilson, Supt. Guasti, Cal.

Elkhorn Farm Ayrshires

Demonstrate

their ability in production by holding all the state records except one as follows:

	Class	Milk Pounds	Fat Pounds
Polly Puss III, 21977	Mature	16,884	701.92
Willowmoor Miss Mac, 40726	Sr. 4 yr.	12,707	501.4
Willowmoor Jean 7th, 46094	Jr. 3 yr.	11,752	483.07
Burn Botany of Elkhorn 2d, 47072	Sr. 2 yr.	11,178	454.22
Robin's Lucy of Elkhorn, 53708	Jr. 2 yr.	12,025	544.48

The last 10 records made in the Elkhorn Herd average—13,225 lbs. milk, 546.17 lbs. butterfat.

See our herd at the shows demonstrating their ability in the ring.

We invite you to make our exhibit your headquarters.

Estate of J. Henry Meyer — L. W. Wing, Jr., Mgr.

Watsonville, Cal.

Baldwin Ranch Herefords

Herd bull "The Anxiety 3rd" by Mousel Bros. great bull "Young Anxiety 4th" and out of Capitola 45th by Domino.

Thirty breeding cows strong in the blood of Beau Mischief, Domino, Beau President, Bright Stanway, Mischief Domino and Dandy Rex.

Students of Hereford history will find pleasure in studying our pedigrees and will find individuality to match the breeding.

Pleasanton, Alameda Co., Calif.

HOLSTEIN Fred Hartsook RANCH CATTLE

We have assembled an excellent foundation herd of females and will be glad to have breeders call. Fred Hartsook, Lankershim, California.

Tosantos Walker Mead

Born December 9, 1919
Exceptional Yearly Record Backing

His five nearest dams average over 1,000 lbs. butter in a year. He is out of a wonderful daughter of Prince Gelsche Walker and Sir Aaggie Mead De Kol. He is a show bull and is priced for immediate sale.

E. D. BARRY, JR. — Workman and Azusa Ave., Covina, Cal.

King Segis Pontiac Jannek

A proven sire of show winners and high producers is available for service to high class Holstein cows.

SANTA MONICA DAIRY CO.

Farm is on Washington Blvd. 2 miles east of Venice. — Santa Monica

Farmers---Hog Men

When at the State Fair be sure to see

MY PARTNER

and his Duroc harem in the Duroc-Jersey barn. Arrange to meet your friends at my exhibit.

Your Duroc Farm

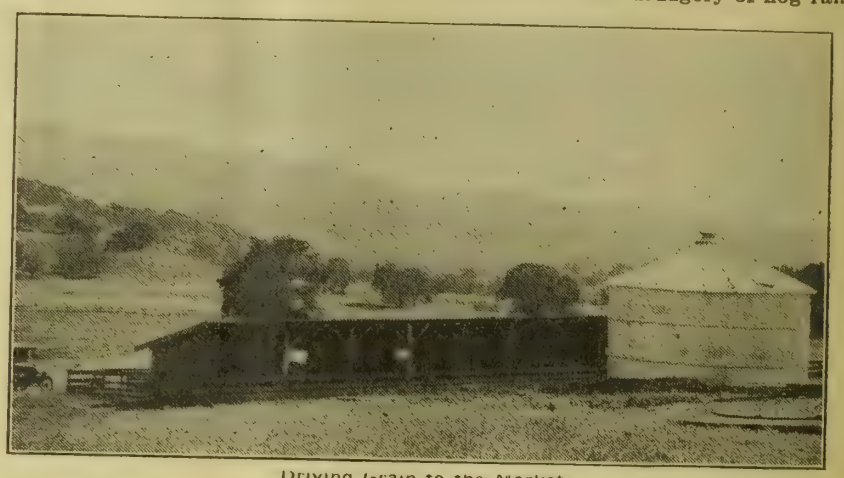
Whittier, Cal.

WM. V. MONG — Michael Rubin in Charge of the Herd

It Pays Better to Sell Grain "On the Hoof"

By R. G. Newman

THERE is food for thought for farmers and for other people in the derivation of our old fashioned word, shift. It has the same origin as thrift—in all probability the two are merely different forms of the same expression and not so many centuries ago could be used interchangeably. To this day we call the unthrifty man shiftless, and the expression to make shift, in the sense of practical and useful contrivance, is still good English. Shift and thrift are twin brothers.



Driving Grain to the Market

Small Calco grain bin installed on grain and hog ranch near Santa Ynez for storing grain for hog feed.

The fact is that both shift and thrift mean change or rearrangement and their significance in the frugal lives of our English, Scotch and Yankee ancestors was that of alterations in the methods and materials of industry and domestic economy to provide for changes in seasons, markets and other circumstances. The shiftless man was one who was too much bound by habit or mental indolence to make shifts to accord with changing conditions.

Thriftiness in this sense is just as necessary to the continued prosperity of the California farmer as to that of the Vermont dairyman or the Scotch wool raiser. Seasons change from year to year and make certain products scarce which have been abundant; new varieties of stock and new fruit or forage plants are imported or developed; and, above all, market conditions vary widely in the course of a few years or even a few months, making certain lines of farming profitable which have not been so for a time and reducing the net returns on other crops or stock almost or quite to the vanishing point. The modern business farmer keeps the closest watch on all these tendencies and shapes his plans accordingly.

A good instance is afforded by the market conditions surrounding grain and hogs during the past three or four years. The tremendous demand for grain resulting from war conditions rightly enough induced California farmers to sow as much as they could possibly care for, and had it not been for the repeated drouths, which no one could possibly have foreseen, the growers would have reaped abundant harvests of dollars for the prices of grain went to higher levels than ever before.

Soon after the armistice the price of live hogs began to fall. At once it seemed to thousands of hog raisers that there was no profit in feeding high priced grain to low priced hogs, and large numbers reduced their herds and many went out of the business altogether.

The summer of 1921 has brought another change. Grain prices have fallen lower than for several years, and hog prices show an upward tendency. Wide awake farmers are now telling themselves and their neighbors that there is more money in feeding the grain than in selling it, and hog yards are beginning to fill with active and ambitious young porkers, rooting and squealing at the troughs, each one bent on making a hog of himself.

The combination of grain, alfalfa and hogs has proven very practical on thousands of farms in the Middle West, and it is no less so on the Pacific Coast. Where an owner has satisfactory farm storage for his grain, like that afforded by metal bins, he can under present conditions make it yield far greater net returns than by selling it directly to the dealers. The hog manure is valuable also, and with this combination the ranch will improve in fertility from year to year.

As a general rule it is more profitable to sell grain and alfalfa on the hoof than in bales or sacks, and this policy maintains the farms in better condition and provides steadier employment for labor. With the perfecting of new types of automatic feeders and waterers the drudgery of hog raising has been greatly reduced and the business made more attractive to those who aim to accomplish results by other methods than those of main strength and awkwardness. The use of pure bred stock in place of scrubs has accomplished a vast improvement in the meat qualities of the animals produced. Altogether it seems certain that in the next few years the snouts of these rooters will lift many a mortgage.

VALUE OF PURE BRED OVER GRADE HOG

More and more from every section of the country is coming the testimony of the value of pure bred hogs and of the utter folly of the farmer who attempts to raise scrubs and grades. A Missouri breeder, writing in the Duroc Bulletin, hands out some sound advice in the following article:

"Much has been written and said regarding the pure bred sire, but we have overlooked another great fact that stares us in the face and one that goes hand in hand with the pure bred sire, that of the pure bred sow. Too much cannot be said and done in encouraging the farmer to have both. No better interest is realized on an investment than that on pure bred hogs. Why? No other farm animal reproduces itself so quickly and finds a market so readily. This is straying a little from our topic. In reality the value of a good pure bred sow cannot be overestimated. If she is the kind that produces a large, husky litter of long, tall, high backed pigs, her value can never be told. The offspring of a pure bred sow will make larger hogs than from a grade sow for the simple reason that she came from a strain that some master mind has spent years to develop into a large hog. This cannot be said of the grade, for no one is trying to improve them to that degree.

"For breeding purposes, the get of a pure bred sow mated to the pure bred sire will produce a hog of merit. A hog that is given a chance at a decent living will be the mainspring of independence for the future farmer and livestock man. Very often some farmer says that grades are good enough for him. Well, possibly so. But does he want to continue in the same rut that his forefathers have worn out? Does he want his children to do the same? Why not, in this age of advanced farming, practice what men who have given a lifetime of study and labor proved to be a conclusive fact? Why not give your children a chance at a better and more useful life than you have had? Don't you want them to take a better interest in the farm than you did? Don't you want them to have beter opportunities than

R Expert
H Livestock
O Auctioneers
A 1505 So. Main St.
D Los Angeles, Cal.
E Sales Pavilion
S Stock Yards at
Hynes, Cal.

¶ ¶ ¶

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R GRADE CATTLE
H GEN. FARM SALES
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Satisfaction
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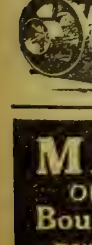
S and terms.



ABSORBINE
TRADE MARK REG. U.S. PAT. OFF.

Reduces Strained, Puffy Ankles, Lymphangitis, Poll Evil, Fistula, Boils, Swellings; Stops Lameness and allays pain. Heals Sores, Cuts, Bruises, Boot Chafes. It is a SAFE ANTISEPTIC AND GERMICIDE

Does not blister or remove the hair and horse can be worked. Pleasant to use. $2.50 a bottle, delivered. Describe your case for special instructions and Book 5 R free.
ABSORBINE, JR., antiseptic liniment for mankind, reduces Strains, Painful, Knotted, Swollen Veins. Concentrated—only a few drops required at an application. Price $1.25 per bottle at dealers or delivered.
W. F. YOUNG, Inc., 244 Temple St., Springfield, Mass.

Poland China Hogs
For Sale

Fall boars, sired by Yates Big Orphan and out of Glenn Chief and Long Jumbo sows. Guaranteed breeders.
25 spring gilts of March and April farrow, sired by Yates Big Jones and Young Bob. Tops from 100 head.
Tried sows, bred for August and September farrow, bred to Yates Big Jones and Young Bob. All in perfect breeding condition.
This stock is all priced in accordance with present financial conditions and is cholera immune.

Owner:
Fred. A. Clark, Orland, Cal., R.F.D. No. 2
Herdsman: R. J. Yates

Pure Bred Rams and Ewes
For sale cheap. Overstocked. Large smooth frames. From the very best strains of this country and France. Immediate delivery. P. O. Address
Windell Orchards, Glenn, California
8 Miles South of Hamilton City

For Profitable Durocs
As we have sold out of bred sows and gilts, we are now offering big growthy fall pigs, either sex, at attractive prices.
D. G. Cummins & Son
Route 1 Visalia, Cal.

OTTAWA
1½ H-P ENGINE IS NOW ONLY $35.50
Other sizes 2 to 22 H-P at low prices.
Good engines sold direct to you. 90 Days' Trial. 10 Year Guarantee. Write for Free book before you purchase any engine.
OTTAWA MFG. CO.
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MACHINERY
OF EVERY DESCRIPTION
Bought, Sold and Rented
BUTTRESS & McCLELLAN
205-7 N. Los Angeles St., Los Angeles

you have had? Don't you want them to have something real that will inspire them to devote their honest efforts to produce and develop a product of merit?

"Give your boy a pure bred gilt or sow and 99 chances to one you will be ashamed of your grade stock in less than a year's time. But give him a gilt or sow of grade stock and you can expect him to reap just what you have sown. You can expect him to remain in the same old rut that you have traveled so long. You may say that it takes so much money. Well, they do cost money, but show me anything of real worth and something worth while that is free. Can you expect your boy or girl to stay on the farm with long hours of toil and nothing for them to take especial interest in? Note that the most prosperous farmers today own pure bred livestock. You may say that they can afford them. My dear reader, you are sadly mistaken. Prosperous men would not own them if they were not a paying investment. Pure bred livestock is one of the greatest boosts that the prosperous farmer has ever had. They are one of the greatest stepping stones to success. Go throuh Illinois, Iowa and Ohio, three of the greatest and richest states, and you will find the man with the best improved farm, best home and most conveniences has depended largely on the pure bred sow. The pure bred sow has paid for their farms and equipped them with modern machinery. She has built their handsome residences and outbuildings and furnished them with labor saving devices. She has enabled them to purchase costly motor cars that they and their families might enjoy their leisure hours while she goes on and on producing and caring for her litters. It has often been said that 99 per cent of wealthy farmers trace their era of prosperity directly back to the pure bred sow. Is this not alone enough to convince you that it is time to relegate the scrub to bygone days and start yourself and your boy right with a good pure bred sow?"

JERSEY COW HAS TWENTIETH CALF

Twenty calves at 21 years of age is the breeding record of Financial King's Interest, a Jersey cow owned by Greystone Farms, Pensylvania. The last calf is a heifer and is one of 19 sisters, the other calf being a bull. This grand old cow has therefore been the mother of a fair sized herd and is still in a remarkably good state of health.

At 20 years of age she made an official record of 7,302 pounds milk and 400 pounds butter fat, and she has a previous record that was still higher.

She will be put on test again to test the limit of a cow at advanced age and also as an object lesson of what can be made from a cow whose years are so prolific in dairy products and calves.

Her last calf was sired by Financial Sensation, a grandson of the old cow, so that the calf is as close to being the counterpart of its mother as is possible.

Financial King's Interest is the only living daughter of Financial King, which was also the sire of Financial Countess, one time champion production cow of the Jersey breed. Financial King was a son of Interest, a cow that in her time was considered the best animal on the Island of Jersey. It is interesting to note that this great line of animals is being intensified as well as perpetuated by the owners of the cow that has 20 calves to her credit.

The premium list of the California National Livestock Show to be held in San Francisco, October 22 to 30, is by now in the hands of the majority of breeders. The show management requests that exhibitors make out their entry blanks and send them in promptly. This is an important matter as the detail work involved in getting out a correct and complete catalogue is really great. This initial show deserves the heartiest support of all interested in pure bred livestock. It is a show sponsored by livestock breeders for livestock breeders. Every breeder interested in the future of his business should get behind this show. Make up your mind to show.

SYCAMORE ACRES
ROBERT N. CLAPP
HOLSTEIN-FRIESIAN CATTLE
Nuevo, Riverside County, Cal.

—I AM HONEST

—In saying that I am putting forth every effort possible to breed Holstein-Friesian cattle that will be a credit to the breed, to California and to myself.

—I feel that with the proper blending of the blood of old King Segis I can develop animals which will make good in the show ring and at the pail.

—I have the tools to work with and want breeders and men interested in Holsteins to look them over at the Riverside Fair October 11th to 16th.

—When in need of Holsteins keep me in mind. If they don't make good I will.

Rob't N. Clapp
Sycamore Acres
Nuevo, Cal.

The Owners of
Peter B. Kyne
and
O. H. Cash

Sierra Vista Stock Ranch, Inc.
Perris, California

Wish to have the pleasure of personally meeting all Farmers and Breeders who are interested in

BETTER DUROCS
BETTER HOLSTEINS

At the State Fair
Sacramento,
September 3 to 11

and at that time and place will take great pleasure in showing them

Two Wonderful Individuals of Those Breeds

Sir Ormsby Skylark Rauwerd

Royal I Am

We will show these two and others at Sacramento, Stockton, Hanford, Fresno, Ventura and Riverside.

Extra parts are always available without delay for standard advertised machinery. This class always found in the California Cultivator.

Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins

October 4, S. O. Walker, Visalia.
October 5, Robt. T. Curtis and Son, Tulare.
October 6, Alex Whaley, Tulare.
October 12, John Saxer, Modesto.
October 21, Robt. N. Clapp, Nuevo.
November 3, A. W. Morris & Sons, Inc., Woodland.
November 9, Palo Alto Stock Farm, Palo Alto.

Herefords

October 19, W. J. Bemmerly, Woodland.
October 27, Pacific Coast Hereford Breeders' Association, California National Livestock Show, San Francisco.
November 1, J. H. Cazier and Sons, Sacramento.

Shorthorns

October 28, California Shorthorn Breeders' Association, California National Livestock Show, San Francisco.
November 2, W. M. Carruthers, Live Oak.

Guernseys

October 20, Walter H. Dupee, Rhoades & Rhoades Sales Pavilion, Hynes.

A Guernsey event of outstanding importance will be the public sale of 50 head from the famous Edgemoor Farm, owned by Walter H. Dupee, Santee, on Thursday, October 20. The sale will be held at Rhoades & Rhoades' Sale Pavilion, Hynes. Forty young females will be included, representing a rich collection of May Rose breeding, and they are made doubly attractive because nearly all, if not all, of them will be safe in calf to the great sire, Masterpiece of Edgemoor, whose breeding and individuality are of such commanding merit that $40,000 was refused for him. Ten young bulls of splendid breeding and type will also appear in the sale list. In view of the tremendous demand for registered Guernseys and the scarcity of breeding animals available for purchase, this sale will be of tremendous importance to those wishing to buy foundation stock of high quality.

The famous herd of registered Herefords owned by J. H. Cazier & Sons Co., Wells, Nevada, has now passed its third consecutive tuberculin test under federal inspection and has been admitted to the list of federal accredited herds. Prior to federal testing the herd had gone through a number of years of tuberculin testing without a reactor. This well known firm will make its annual public sale offering at Sacramento on November 1, selling about 75 head, the list of females made up largely of daughters of the great breeding bull Harris Standard 2nd, and bred to the $10,000 Beau Blanchard 76th. Five or six young bulls of real herd heading quality will also be sold, and the offering will include practically the entire show herd that the Caziers will have out this year.

On Wednesday, October 12, one of the most attractive herds of registered Holsteins in Stanislaus County will be dispersed at public auction. This is the herd owned by John Saxer, Modesto, and besides being a herd of excellent type is of particularly good breeding, including three daughters of Sir Skylark Ormsby Hengerveld.

A remarkable record has just been completed by a registered Holstein heifer in the Baywood herd, owned by The Lewis Co., Hollister. Freshening last year as a senior four year old, this heifer, Sarala Segis Pontiac, made an official record of 35.41 pounds butter in seven days. She recently freshened again as a senior four year old, within 12 months of her previous calving; and at present has over 37 pounds butter in seven days to her credit. She is sired by Segis De Kol Pontiac Burke, a son of Segis Pontiac De Kol Pontiac Burke, and the 1,000 pound yearly record cow Miss Blaney.

Karlray Ormsby Alcartra, the great daughter of King Segis Alcartra Abbekerk, that sold for $1,850 to R. Stevens, Stockton, in the 1921 Guaranty Sale, recently presented her new owner with a fine bull calf sired by the three times grand champion bull, King Segis Alcartra Prilly. It will be remembered that she made a yearly record last year of 22,947 pounds milk and 916.24 pounds butter as a junior two year old, the second highest record for age in California. With little rest she calved this year as a junior three year old, and placed on official test, was thrown off feed and became seriously sick. Thirty days after calving she had apparently recovered and was again placed on official test and made the nice record of 26.51 pounds butter from 589.1 pounds milk in seven days.

Lady Walker Pontiac Zenobia, a daughter of Prince Hiske Walker, owned by H. G. Ball, Tulare, recently calved at the tender age of one year and eight months, and on official test made 13.07 pounds butter from 316.2 pounds milk in seven days, a production that would be creditable in a heifer much older.

Bonita Larcola Glista, owned by R. Stevens, Stockton, calving at one year and ten months of age, recently made 13.61 pounds butter from 311.9 pounds milk in seven days. She is a daughter of Supreme Glista Pietje.

St. Mawes Lad's Lady, a senior yearling Jersey owned by Harry D. Illif, Independence, Oregon, has broken the world's record for fat production for her age. The old record of 800.8 pounds of fat was surpassed when she still had nine days to go. It is expected that she will finish with about 825 pounds.

Bullard Bros., Woodland, have sold to B. D. Phillips of Oakland a flock of 104 Rambouillets.

Southern California breeders will be well represented in the livestock departments at the state fair this year. Cash and Kyne, owners of the Sierra Vista Ranch at Perris, and the George Junior Republic at Chino, will exhibit Holsteins. The Brant Rancho of Owensmouth will exhibit Guernseys. William V. Mong, Whittier, Sierra Vista Ranch of Perris, and J. C. Craig of Owensmouth will each have 17 or 18 Durocs. The Italian Vineyard Company of Guasti will take up 25 head of Berkshires and D. J. Bastanchury of La Habra will show a number of Berkshires also. Homer Graham of the Eastman Ranch of San Fernando will show full herd of Poland Chinas. James Marwick of Santa Barbara will show Angus cattle, Hampshire hogs, Guernsey cattle as well as turkeys, Black Minorcas and Indian Runner ducks.

We Can Show You How to Feed Stock Profitably at Today's Prices

In spite of today's conditions, California Dairy and Stockmen **can** make a profit, but it must come through greater use of the cheaper roughages and the use of **balanced rations.** Scientific analysis of feeds and the proper combination of protein, vitamines and carbohydrates must take the place of haphazard methods.

Where to get the Advice of an Expert---FREE!

For the benefit of Dairy and Stockmen throughout the state who are facing the problem of vanished profits we have installed a FEED ANALYSIS DEPARTMENT, in charge of an expert. The services of this man are absolutely free to any man who feeds stock. Our expert will tell you what to feed, **how** to feed it, how to use your own roughage combined with highly nutritious food that can be purchased at a reasonable price.

Build a Profit-Making Ration from the Feeds You Have at Hand

It makes no difference what you are feeding now. We can show you what the correct proportion of Camo Pure Hawaiian Cane Molasses should be with first-cutting alfalfa, volunteer oat hay, wheat straw, bean straw, or beet-tops, pea vines, rice bran, or barley screenings.

The Importance of Molasses in the Ration

PALATABILITY is a big item in stock feed. Cattle do not get all the food values out of cheap roughages because they are not palatable. They do not chew them enough because they do not like them. Molasses is a candy to cattle. When you add molasses to your feed it becomes immediately a treat for the stock. The molasses sticks to the gums and the cattle chew and rechew their food. And bear this in mind: one pound of molasses equals in food value one pound of corn, and is a better food, for molasses is assimilated immediately by the system, while corn requires several hours to digest.

Camo Pure Hawaiian Cane Molasses is 100 per cent FOOD! Use it with your roughage. Ensilage alone is not a fat and milk producer. Sweeten the unmarketable stuff you have and feed it scientifically—and at a profit to yourself.

Begin Today to Feed Scientifically

Scientific feeding is in its infancy, but its results are readily apparent. As larger acreages are divided and intensive methods become more universal the problem of correct feeding becomes even more intense. Make a start now, **today,** with the aid of our expert's free advice.

Write Our Feed Man

Let him show you how you can feed stock at today's prices and **make money!** Send in samples of your own feed. We will analyze it and tell you whether or not you are getting the most from your feed.

Send in this Information—and Begin to Feed Correctly

W. H. Young Company,
58E Sutter Street,
San Francisco, Cal.
Gentlemen:

Please hand the following information to your FEED ANALYSIS DEPARTMENT for their consideration and forward their report to me.

1. I am feeding.....head of Dairy Cattle..... Beef Cattle.....
2. My herd consists of (name breed and grade of stock) .....
3. At present I am feeding (give ration).....
4. I am getting the following results.....

.....

.....

NAME..... ADDRESS .....

If you will mail the above information our expert will freely advise you along the lines of better balanced rations. Make use of this free advisory department. It can mean the making of a profit for you.

MASON BY-PRODUCTS CO.

Distributed Through

W. H. YOUNG COMPANY

58E Sutter Street San Francisco, Cal.

Bassett Bros. of Hanford promise to make a stronger showing of Poland Chinas at the state fair this year than has ever appeared under their banners.

J. I. Thompson of the Harold Hopkins Ranch at Davis is going to show a few exceptional Poland Chinas. At the head of his herd is Frisco Boy, a junior yearling boar, who boasts an excellent back and 11 inch bone.

For the twelfth year A. B. Humphrey will show at the state fair. His herd of Guernseys and Berkshire hogs this year is one of the best he has ever shown. Mr. Humphrey has always been a consistent winner in both classes and this year should be no exception to the rule.

The Ortega-Underhill Rancho of Santa Barbara is contemplating a trip to the National Swine Show with a herd of Hampshire hogs of its own breeding. On account of this trip the O. U. R. herd will not be seen at the shows of this state.

Chas. MacDonald, manager of the Santa Anita Rancho, has just sold a fine two year old Percheron stallion to A. Camarillo of Camarillo, Ventura County. Mr. MacDonald reports considerable interest in horses and jacks from this state and from the South and Central American countries.

JERSEY BREEDERS MEET

The annual meeting of the California Jersey Breeders Association will be held in the Assembly Rooms, State Fair Grounds, Sacramento, at 7:30 o'clock, Monday evening, September 5. All persons in the state interested in Jerseys are invited to be present and attend this meeting.

Auction Sales

I am prepared to conduct auction sales of farms, farms and equipment, or pure bred livestock of any kind. I am thoroughly familiar with the pedigrees of cattle and of the different breeds of hogs. My customers are my best advertisement and they are to be found in all localities. My terms are reasonable. Write, wire or phone.

GEO. W. BELL
THE BUSINESS AUCTIONEER
Tulare, Cal.

NOTICE!

$1,500.00 buys 10 registered Holstein heifers, all by the same sire, and a young herd sire from a 31 lb. herd sire and an unofficial cow that milked 70 lbs. per day and made 20 lbs. butter per week.

A fine foundation start for the right person. All nice individuals. Any one interested write or call.

SOLA COLLIS FARM
RIVERDALE, Fresno County, Cal.

A Bargain in Jerseys

2 daughters of the great bull

ST. MAWES

along with their 2 yearling daughters and a herd bull. For particulars address

Chas. M. Talmadge, Salem, Oregon

PURE BRED CATTLE BREEDERS MEET AT STATE FAIR

The state department of agriculture, division of animal industry, is arranging for a conference of pure bred cattle breeders to be held Wednesday, September 7, at 11 a. m., in the assembly room over the secretary's office in the Agricultural Building, at the fair grounds, Sacramento. The purpose of this conference or meeting is to call together the pure bred cattle breeders and others interested in livestock to discuss ways and means by which we can best serve them in carrying out the provisions of Assembly Bill 38, which delegates authority to this department, in cooperation with the United States bureau of animal industry, to conduct accredited herd work in California.—J. P. Iverson.

HOG FEEDING SUGGESTIONS

Now that many California ranchers are again turning to hog feeding as a means of marketing a part of their grain, the following conclusions by H. K. Dickson, local club agent of the Kern County High School, covering two years of carefully conducted feeding trials, should prove of interest. Mr. Dickson says:

"A self feeder always full of ground feed is part of the Boys Agricultural Club hog program. Then the hog gets his feed when he wants it and always enough. A self feeder full of ground barley, used with alfalfa pasture, is a very satisfactory way to feed grain.

"Drawing the different conclusions gained from our tests and sets of figures together, one has the following guide to his hog feeding:

"A good sow with a litter of seven or eight pigs, growing fast enough so that they will weigh 55 pounds each at 70 days, will usually use from two to three pounds of grain or grain equivalent for every pound increase weight in the little pigs. This will cover the sow's feed from two weeks before farrowing and all the feed of sow and pigs until the pigs are 70 days old.

"Pigs smaller than 90 pounds can hardly eat enough food to cause them to gain an average weight of a pound per day. The larger the pig the more he can eat and the faster he can put on gain. Hogs weighing from 175 to 200 can easily be made to gain two pounds per day.

"Pigs which are once badly stunted or allowed merely to live without gaining, are an expensive proposition, since it requires the waste of a large amount of feed to start them to growing normally again. Our results required eight pounds of grain to make a pound of gain for the first two weeks on stunted pigs.

"Shoats on good alfalfa pasture, accompanied by a full self feeder of ground barley or ground milo, will make a pound of gain on about 3½ pounds of grain, plus the alfalfa pasture. The poorer the alfalfa the more grain it will take.

"Good thrifty shoats in the dry lot, eating from a self feeder of ground barley, corn and tankage, and in addition getting a slop of soaked ground grain twice a day, make a pound of pork from 4½ to 5 pounds of grain, probably using 5 pounds in the majority of cases. If skim milk can be used with the grain the amount of grain needed will be lower, as in the case of alfalfa pasture, and will depend on the ratio between the amount of milk and grain."

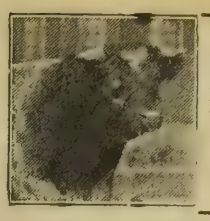
FOR AGRICULTURAL UPLIFT

(Continued from Page 212.)

time to house the big show. The following year extensions were made, and nearly three acres of additional canvas housing was required to take care of the pure bred stock from a dozen states and many points in Canada. In anticipation of greatly increased demands this year the legislature appropriated a $100,000 building extension fund.

The Pacific International property represents an investment of more than half a million dollars.

Premiums offered in the various classes of beef and dairy cattle, horses, swine, sheep and goats are in excess of $75,000 each year. The attendance records of the 1920 show totalled more than 75,000, and the number of animals exhibited was above 3,000.



Shorthorn steers are selling right along at the top of the leading markets. Buyers pay a premium for Shorthorn quality and growers get the advantage of the extra weights also. It is a good time to buy Shorthorn breeding stock.
Note the Shorthorns at the fairs.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION
13 Dexter Park Ave., Chicago, Ill.

INNISFAIL MILKING Shorthorns
MILK BEEF PROFITS

Two Young Bulls From High Producing Dams
A May 1920 son of the champion Westward Ho and out of a 10,500 pound daughter of the 1919 Chicago champion. A 14 months old son of Glenside Royal and out of Princess Clay a cow of beautiful type and with over 12,000 pounds milk. Also have a few younger bulls and heifers. Prices moderate and all guarantees. Here is your chance. Address
J. D. ROWE & SON, Lessees, Davis, Cal.

MILMAR---
the Utmost in
SHORTHORNS
A Herd With a Purpose

This herd was founded on the conviction that a real service could be rendered the cattle business of California in making available Shorthorns with individuality and breeding the equal of the better Eastern herds, and that such cattle would meet with ready appreciation. After several years of careful breeding we are now able to show a class of cattle of which we are modestly proud. We invite critical attention to our exhibit at the fall fairs and to our herd. Breeding material can be supplied in keeping with your needs and at satisfactory prices.

HERD BULLS
Imp. Secret Stamp Greendale Sultan

When You Think Shorthorns—THINK MILMAR

Thos. T. Miller Hollister, Cal.

We Breed Shorthorns

because we have found that this sterling breed is best adapted to California conditions; because through the use of Shorthorn blood we are able to produce market steers that sell at younger ages, carrying more weight, and that sell for more per pound than common stock. Important facts all, as we are raising cattle for profit—not pastime.

We Show Shorthorns

because we take pleasure in publicly demonstrating the merit of our cattle. The success of our herd at the leading Western shows is, we take it, evidence that our cattle are correct in every way.

We Sell Shorthorn Bulls

because we are producing more than we use on our own ranges and because we are glad to furnish California cattlemen with the same kind of bulls that have built up our herd and made ours a profitable business.

Look for Pacheco Shorthorns at the Fair

Pacheco Cattle Company, Hollister, Cal.

Straloch Farm
Davis, Cal.
(2½ Miles West on Highway)

Shorthorns
Herd Sires:
California Model 635776
Imp. Braywood Collynie 951409

Poland China Swine
Big—Prolific—Easy Feeders—
The Farmers' Kind.
Prices Reasonable

Hampshire Sheep
The top and the high average at the 1921 Davis sale. The kind that sire early market topping lambs. We have what you want at prices you can afford to pay.

Visit the farm at any time.

J. I. Thompson, Manager C. Harold Hopkins, Owner

NOVEMBER 2
is the date of my
Fourth Public Sale of Shorthorns
30 Scotch Females
10 Scotch Bulls
See My Exhibit at State Fair
W. M. CARRUTHERS
Live Oak Cal.

Rosebud Shorthorns
A Choice Herd of Fifty Females
Headed by Milmar Stamp
a Cruickshank Secret

We can now offer a few extra good young bulls that we do not hesitate to recommend. They are well grown and correct in type and quality. We invite you to visit our herd or to write us your needs.

Edinger-Johnston Company
Hood, California
(Just south of Sacramento.)

The Ventura Fair Ought to be a Dandy

In this, the seventh year of its history, this Southern County is expending $60,000 for its autumn festival. Last year it broke the Southern California record with an expenditure of $33,000.

Some of the items this year are as follows:

Livestock premiums	$14,495.50
Poultry premiums	5,100.00
Pet stock, cats, etc.	875.00
Agricultural premiums	5,600.00
Women's department	6,725.00
Amusements	11,000.00

DATES, OCTOBER 5, 6, 7, 8 & 9, 1921

Our President challenges any rider in California, and particularly any County or State Fair President in the United States, to ride a stake race for $200.00. Only red-blooded riders with superior animals dare accept.

Tom Mix and our unbeaten Tom Clark (county supervisor) will mix it in a chariot race for a $500 purse, winner take all.

F. W. Mathieson, owner of Sinbad, The Vamp and Liberty Bond, will exhibit his world-famous string of horses.

Bob Anderson's complete Wild West Show every day.

C. K. Billing's world's fastest trotter, "Uhlan," will be exhibited and put through his finest steps.

Five thousand dollars for horse races; three thousand dollars for a Horseshow in which the elite of American horsedom will participate, direction of F. W. Mathieson.

Berylwood Stock Farm's nation's record milk producing Holstein and 100 other Holsteins, as well as Jerseys, Ayrshires, Guernseys, Herefords, etc., in competitive exhibition.

California's best Arabians, Percherons, Clydes, Belgians and others to be shown in competition.

National Swiss Mondaine pigeon show; California Rhode Island Red show; and a large gathering of all the really class birds in the State.

And Many Other Headliners

CONNECT WITH THIS BIG FAIR SOMEHOW

Send for Premium Lists and Blanks to

Lewis P. Hathaway, Sec'y
Ventura, Cal.

A. L. Hobson, Pres.
Ventura, Cal.

The Standard Oil ZEROLENE For Motor Cars

A grade for each type of engine

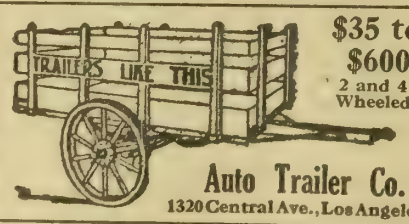
Gives Correct Lubrication to your TRACTOR engine

STANDARD OIL COMPANY (CALIFORNIA)

Successful Poultrymen Use A.R.M. Brand Carbolineum

For spraying and painting roosts and poultry houses. The only real insurance against mites. Paint roosts twice a year and you have the mite problem solved. Mr. M. A. Schofield, of Gardena, F. R. Richardson, of San Gabriel, J. M. Davidson, of Arlington, W. H. Young, of Downey, F. M. Molby, of Cudahy Ranch, Arthur W. Huskins, of Glendale, J. W. Blackman, of Los Angeles, V. W. Pratt, of Riverside, Kresky Brooder Stove Co., of Petaluma, B. R. Holloway, of Van Nuys use and endorse A. R. M. Brand Carbolineum. These people are the leading poultrymen in their districts. Ask them about the results attained. Can be had at all first class dealers. MANUFACTURED BY
ARTHUR R. MAAS, CHEMIST 308 EAST EIGHTH ST., LOS ANGELES, CAL.

FOR GREATER EGG PRODUCTION FEED— COULSONS EGG FOOD FULL PARTICULARS IN OUR FREE BOOK "CHICKENS FROM SHELL TO MARKET" Coulson Co. PETALUMA, CAL



$35 to $600
2 and 4 Wheeled

Auto Trailer Co.
1320 Central Ave., Los Angeles

Better service is assured by the advertiser if when writing you mention the California Cultivator.

Humpty Dumpty's Great Climb

By Jean A. Koethen

AFTER war was declared in August, 1914, California poultrymen found themselves discouraged and depressed. The bottom had dropped out of the poultry industry, so many said and not a few believed. Feed prices were rising and eggs were cheap. The faint hearted let go and sold their plants for what they would bring, while the more couraegous spirits held on, not because they were making money but because they had caught the possible by the hair and must hold on. It was for such a time as this and because it seemed the only way out that the Poultry Producers of Southern California was organized early in 1915. The market must be stabilized and the producers induced to hang together, or in the words of a distinguished patriot they would surely hang separately.

That was six years ago. Now, in midsummer of this year of grace 1921, we are in a position to take a backward glance and gather from the last statistical table of the Poultry Producers the data regarding and the lessons, if there be any, to be drawn from the pyrotechnical rise in egg prices and the inevitable fall which must sooner or later follow such a rise.

Wholesale Prices

The average wholesale price of eggs on the Los Angeles market in 1915 was 28.97 cents, and poultrymen were holding their hens at a net loss of 22.7 cents per hen. How they could do this and live I do not understand. Probably it was because they did not count in the overhead cost of $1.20 per year per hen and managed to eke out a precarious living on the very narrow and uncertain margin between cost and selling price of eggs. That year the average cost of feeding a hen for a month was 13.43 cents. The overhead of 10 cents a month brought the total cost of a hen up to 23.43 cents, and the average market value of her eggs, which ranged from 13.5 cents in October to 30.4 cents in April, was 21.54 cents, a loss of nearly 2 cents a month for every hen.

The figures for 1916 are a little better. The average price of eggs for the year was 31.20 cents, but cost of feed had risen along with the price of eggs till the cost of feeding a hen a month was 13.9 instead of 13.43. The total net loss for this year was only 9.3 cents, and the poultryman's heart must have been cheered as he realized that if he was not actually out of the hole he was at least a little nearer the top.

The average of the market was still climbing in 1917. In November it reached 56 cents, which was 8 cents above the highest price in 1916 and 12 cents above the highest point touched in 1915. If only the price of feed had not climbed with it the poultryman would have broken even. As it was, feed cost per month jumped to 21.02 cents per hen, which brought the year's cost of keeping a hen up to $2.52, plus the $1.20 for overhead, which few indeed had the courage to face. The average of the Los Angeles market for the year was 35.06 cents, a hopeful sign which made the year's net loss of 12.4 cents per hen a little less depressing. The poultryman had slipped back in his effort to climb out of the hole, but at least he could see the sky above.

A Big Jump

Salvation came in 1918, armistice year, when all prices went sky high and eggs along with them. Feed prices were high enough, but the average cost of feeding a hen a month increased only .72 of a cent while the market average jumped from 35.06 cents to 51.61 cents, an increase of nearly 50 per cent. Now at last after four or five years of struggling the poultryman was clear out of his hole and up in the bright sunshine of prosperity. His total net gain for the year was 78.66 cents per hen. If a man only had hens enough he could buy an automobile. He could at least keep his family in shoes. To be sure, the total cost of a hen for the year was $3.80, but he had become so accustomed to high prices he didn't much mind that, and the balance to his credit at the bank looked mighty good.

By 1919 the poultryman began to feel really prosperous. He painted his home and patched up the cracks in the laying house. He hadn't the money to spend that carpenters and brick masons had; his wife couldn't possibly manage a fur coat, but she would not have known what to do with it if she had had it. The jingle of money in their pockets was pleasure enough. The average market price for the year reached 54.64 cents. The average for November was 75 cents, and there were weeks when the retail price did not drop below 90 cents. Now the poultryman was a man of affairs. Sometimes he was even classed as a profiteer, along with the shoe men and the grocers. Feed costs had advanced only slightly and eggs were still going up. It cost $2.73 to feed a hen, and $3.93 to keep her for a year, but even at that his total net gain was $1.075 per hen.

We have heard a good deal in times past about the dollar hen, and poultrymen have figured that if they could make a dollar a hen per year they were doing about all that could be expected, but have they stopped to consider that in the best year poultrymen have known in Southern California they made only $1.07, counting all expenses? The trouble with poultrymen has been and still is that they do not count everything. They count feed and the labor they actually hire, but they are content to work themselves and let their wives and children work for little or nothing, while, as for counting telephone, stationery, repairs, replacements, taxes, and all the necessary expenses of keeping up a plant, these are entirely outside their calculations. One item of the overhead, which is included in all calculations on this chart, is "labor used in excess of proprietor's fair time, to include excess labor of proprietor and his family." That is, if the poultryman's wife sits up nights with the brooder chicks her time should be counted in. If his children clean the houses and gather the eggs their time must be counted at reasonable wages. If he himself puts in more than the eight hours the commonest workman in the building trades calls a day, he must charge it up. Labor is labor, wherever and by whomever performed, and this is a land of equal rights. If one man is content with fewer rights and privileges than his neighbor that is his own affair.

At the Peak

Food cost for 1920 reached 25.29 cents a month, or $3.03 for the year, which made the total cost of a hen $4.23, but eggs reached their highest average, 55.83 cents a dozen, the average for November being 82.04 cents, the highest average of this period of high averages. The market average did not, however, quite keep pace with the cost of feed, and the total net gain for the year was only 72.51 cents, where it had been $1.07 in 1919. Feed prices were at their very highest this year, the average price of wheat per hundred being $4.48. It had touched $5.50 in 1917, but, thanks to Mr. Hoover, had not remained there long. There were five months in 1920 when it was over $4.50 and not until November did it drop below $4.40. This was the beginning of the end. By December it had dropped to $3.75 for the first time since war was declared, and the first three months of 1921 brought it down to $3.15.

Humpty Dumpty's Fall

The price of eggs did not keep step with the price of feed as prices went up, but they dropped together. This was to be expected and is not perhaps entirely to be deplored for no poultryman wishes to be called a profiteer. By March eggs were selling at an average of 30.96 cents wholesale, and we all know how cheap they have been since. The monthly gain per hen, which in 1919 reached 30 and 31 cents

in some months, in March was 10.64 cents, but the feed cost which in March, 1920, reached 28 cents had dropped to 20 cents.

This table, which was compiled by F. D. Cornell for the Poultry Producers, is not computed past March. What his average will be when reports are all in for 1921 each poultryman must figure for himself. Whether the fall in prices is due to the invasion of eggs from China and other foreign countries, or to overproduction, or is just the inevitable reaction which every business is experiencing is a question we cannot discuss here. Possibly all three causes have contributed. The farmer must adjust himself to new conditions, but there is every reason to believe he will adjust himself more readily than other industries because he has not been led so far afield. The farmer, and under farmer I include poultryman, has always been satisfied with less profit than other men, has always been more willing to put his shoulder to the wheel than others when Uncle Sam appealed for help, and will prove himself in the end the sanest and most patriotic of all producers. If only farmers will hang together as other industries do, they can get anything they want. If they continue, as they were in the old times, timid, suspicious and unwilling to root for the organization, they will no doubt pay the penalty.

Poultry Queries

(Conducted by Jean A. Koethen.)

Lice on Hens

Would like to know what to do for hen lice. We have cleaned, spaded and sprayed but lice still remain.—Subscriber, Fallbrook.

Dusting, dipping and greasing are the standard remedies for lice. Dusting with any good louse powder or with sodium fluoride every three or six months should keep them clean if the hens have access to a dust bath. In warm weather dipping with sheep dip is often effective, but it is harder on the hens than dusting and greasing. Blue ointment mixed with vaseline, half and half, and applied about the vent with the tip of the finger, an amount the size of a pea being used for each hen, is by some experts considered more effective than dusting, but the ointment must be applied with care as it is quite poisonous if used full strength. Greasing under the wings and about the vent with plain lard is an excellent remedy, but it makes very dirty hens. Unless you employ some of these means for ridding the hens of them they will always have lice.

POULTRYWOMAN WRITES OF OPPORTUNITIES

In an editorial of August 13, entitled "Learn the Game," you state that you often receive inquiries as to land and a chance to make a living in Southern California.

I judge that you are often puzzled as to what to reply, as the capital possessed is small and land here is usually high.

It occurred to me to call your attention to this valley, a level mountain valley (1,500 feet altitude) of about 25,000 acres. Land here is cheap, around $100 per acre. The climate is good. There is a small country village with groceries, dry goods, hardware and drug stores, blacksmiths, lumber yard, bank, an unusually good inn, churches, primary, grammar and high schools; 35 miles north from San Diego, with daily mail, passenger and truck service.

Enough water from wells for irrigation in a small way. The best place in the world for poultry. If a person likes to work with poultry he can make a good living here. With four or five thousand dollars he could with care start a good house and poultry plant and have a living assured.

We are yearning for more residents, so we can get electricity for lighting and pumping. I would be glad to furnish any further information.

I have a farm here and am in the poultry business on a commercial scale.

I have no land for sale.—Mrs. Clara K. Graham, Ramona.

DIRTY EGGS AGAIN

"We sometimes wonder," writes the management of Poultry Producers of Southern California, "if our members realize that the only reason we can move our surplus eggs to other markets, especially to New York, is one of 'quality,' due to rigid grading when packing eggs for that market. This means that we must remove all of the 'off-grade' eggs of every description and ship only clean, white eggs of the very highest interior quality. It culls out the 'dirty' eggs, both the very dirty eggs and those only slightly soiled, also all brown or tinted shells and any other eggs showing evidence of heat, or otherwise 'off-grade' in any way.

"Where shippers are careful in handling and caring for their eggs, cleaning all soiled eggs and segregating each grade in separate fillers, the number of culls is comparatively small, and their removal an easy matter. On the other hand, where shippers are careless about their nests and the sanitary condition of their houses and yards, or in storing their eggs before or after packing for the trucks, it makes too many of these culls to dispose of, except at a loss, while the mixing in of the dirty or soiled eggs with the others greatly increases the cost of grading at the station.

"Our graders can handle eggs which have been properly graded and packed at the ranch, three dozen at a time, picking up the entire filler with the three dozen eggs and the flat under it and transferring it to the new case at one time, but if they have to stop and pick out one or two dirty, soiled or tinted eggs from each filler before transferring, it means just that much more expense in the labor cost of putting up a 'standard' pack of eggs.

"We are, therefore, again asking every member to use still greater care in securing a high quality product from his hens, and when he has that, to so handle and pack it that it reaches our station in first class shape for the graders to make quick work of the transferring.

"Be sure that you clean all soiled eggs, segregate the grades so that there are never two grades in the same filler, and mark all cleaned, or washed eggs with the special colored slips and thus do your part in reducing our operating costs."

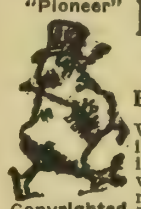
WEIGHTS OF WHITE LEGHORNS

It is extremely difficult to determine by merely looking at a flock whether they are as large as they should be for their age or for the time of year. The only accurate method of knowing whether one's birds are making the proper gain is to weigh them at different intervals, then their weight at any age may be compared with a table of normal or standard weights. The following from the poultry experiment station at Storrs, Connecticut, shows the age at which Leghorns should attain the weights indicated: Chickens, 1 pound, 8 weeks; pullets only, 2 pounds, 14 weeks; pullets only, 2½ pounds, 17 weeks; pullets only, 3 pounds, 21 weeks.

ALFALFA WEEVIL SITUATION

At a meeting called by the state department of agriculture at Sacramento, August 2, attended by representatives of the Alfalfa Growers of California, dairymen and officials of Nevada and California, practicability and justice of a quarantine against the entire state of Nevada was considered. It was agreed by all present that a quarantine against White Pine and Washoe Counties in Nevada is sufficient for the present, provided Nevada will add to her present enforcement the inspection of automobile traffic going from the infested areas to non-infested areas in Nevada. The Nevada officials agreed to this and further agreed to eradicate the alfalfa now growing in the auto camp at Sparks. These measures will insure a greater measure of protection to California, as well as to Nevada.

A cooperative arrangement was effected whereby the California inspector now stationed at State Line will be given Nevada authority and moved to a point in Nevada where three roads branch into California. This arrangement will help to protect Douglas County in Nevada, which would be a distinct menace to California if allowed to become infested, and will enable the inspection of traffic arriving in California on three roads, one of which has not been thoroughly patrolled.

"Pioneer"

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Baby Chicks
All the Popular Breeds
Every Day
Baby Ducks, Baby Turkeys
We can supply Baby Chicks in any quantity. Best quality. Can ship to any point within seventy-two hours' ride from Los Angeles. Hatching Eggs, Fireless Brooders, Poultry Supplies, Remedies, Feed, Seed, Feeders, Fountains for sale. We are the SOLE AGENTS of this County for the Pioneer Incubators and Brooders. Send for Price List.
Visitors Welcome.
PIONEER HATCHERY
320 So. Spring St., Los Angeles, Calif.
"World's Largest Hatchery" Est. 1905

Eggs Going to New York
By Water Save Organized
Poultrymen $1.00 a Case

Save more Dollars by Feeding PCA Products
"The Feed That's All Pure Grains and the Most Value for the Dollar"
PCA Fed Hens Tend to Lay a High Percentage in the Late Summer and Fall
Dealers Everywhere in Southern California
Poultrymen's Co-operative Milling Ass'n
1516 Industrial Street — Phones 12076 and Main 2935 — Los Angeles, California

Los Angeles Markets

Los Angeles, August 24, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price 47 cents.

Prices Creamery Extras last week:

Aug.	17	18	19	20	22	23
'21 ...	46	46	46	..	47	47

CHEESE

Brokers' prices:
California flats, 20@22.

EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 41; case count, 39; pullets, 35; pewee pullets, 24.

Extras last week and year ago:

Aug.	17	18	19	20	22	23
'21 ...	42	42	41	..	41	41

POULTRY

Price to producers: Hens, 27@30; colored, 33; broilers, 30@32; roasters, 30; old roosters, 18; fryers, 28; ducks, old, 12; ducklings, Pekin, 3½ up, 25; others, 25; geese, 25; turkeys, live, young tom, 50; dr., 55; old, live, 40; dr., 41; hens, live 40; dr., 44; squabs, 45@47.

Belgian hares, live, 11@14; old 8.

LIVESTOCK

Los Angeles, Aug. 23. — Weighed and delivered off cars without food or water:

Hogs (hard grain fed), 125 to 175 lbs., 11.50; 175 to 225 lbs., 12.00.

Cattle (on foot, gross weight): Steers, good, 6.50; medium, 6.00; cows, good, 5.00; medium, 4.50; bulls and stags, 2.00; calves, 125 to 150 lbs., 8.00; 175 to 225 lbs., 7.00.

Sheep: Ewes, 5.00@5.50; lambs, 8.50@9.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock August 23, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies heavy. Demand and movement moderate, market firm. New stock, mostly 85@1.00 per lug; White Rose, No. 1, sacked, per cwt. mostly 2.25 @2.50; few 2.75; poorer, 1.75@2.00. Stocktons: Burbanks, 2.50@3.00. Sweet potatoes: Supplies light, movement slow, market weaker. Locals, mostly 6@7 per lb., No. 2's, 75@1.00 per lug.

Onions: Supplies moderate, movement moderate, market firm. Stocktons: White Globes, sacked per cwt. 2.75@3.00, Yellows 2.75. Old stock: Browns, 1.25@1.75. Locals: Whites 2.50@2.75 per cwt., Browns 75@85 per lug, Whites 90@1.00 per lug.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock August 23, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Supplies light. Demand moderate, market seady. Per lb.: Kentucky Wonders mostly 4@5 per lb.; Green pods mostly 4. Limas: Supplies moderate, movement moderate, market steady, mostly 5; few 4.

Beets: Supplies moderate, market steady. Per dozen bunches mostly 35 @40.

Cabbage: Supplies light. Market stronger. Per field crate 2.25@2.50.

Carrots: Supplies light, market steady, per dozen bunches mostly 35@40.

Celery: Supplies light, movement slow, market steady, per crate 5.50@6.00.

Corn: Supplies moderate, movement moderate, market steady. Local: Per lug, wide range in price, 65@95; mostly 75 @85.

Cucumbers: Supplies liberal, movement slow, market steady. Locals: Lugs mostly 35@40; pickles, 1.25@1.75 lug.

Eggplant: Supplies liberal, demand slow, lb., 3@4; few 5.

Lettuce: Supplies light, market firm. Local: Field crates mostly 90@1.00, poorer 75 per crate; fancy 1.25.

Peppers: Supplies heavy, market steady. Locals: Bells mostly 60@80 lug. Chilis mostly 3@5 per lb.

Radishes: Supplies light, market firm, mostly 15@20 per dozen bunches.

Squash: Supplies light, market steady. Summer mostly 50 per lug.

Tomatoes: Supplies moderate. Demand and movement slow, market weak. Locals: No. 1, per lug, mostly 90@1.00; fancy 1.25, No. 2, 50@75.

Turnips: Supply moderate. Market steady. Per dozen bunches 35@40.

FRESH FRUITS

Apples: Supplies liberal. Movement slow, market weaker. New stock: Mostly 50@60 per lug, loose per lb., 3@4. Sebastopol section, B grade Gravensteins 2.25 @2.75, mostly 2.35@2.50. Crabapples mostly 1.25@1.50 per lug.

Cantaloupes: Supplies very heavy. Demand and movement moderate, market weak. Homegrowns: Tiptop, per crate 40@65, mostly 50, Paul Rose and Rocky Fords 50@75. Casabas: Supplies liberal, movement slow, 1½@2½ per lb., according to quality.

Figs: Supplies heavy. Market weaker, prices lower. Locals: Per box 1.00@2.00, mostly 1.00@1.25.

Grapes: Supplies liberal, movement slow, market dull. Wide range in quality. Thompson Seedless mostly 4@5; Muscats and Malagas mostly 5@6.

Peaches: Supplies heavy. Demand moderate, market slightly stronger. Freestones mostly 1.00@1.10, few fancy 1.25 @1.35, poorer 60@75, Clings 90@1.00, few best 1.10@1.25. Few fine quality J. H. Hales from Yucaipa meet strong demand.

Pears: Supplies heavy. Demand moderate, market steady. Bartletts 4@5, best 6, poorer 3 per lb.

Plums: Supplies moderate, market steady. Satsuma plums 4@5 lb.; Wicksons and Kelsey, 4@5; prunes, various varieties 3@5.

Quinces: Lug, 90@1.00.

Watermelons: Supplies heavy. Demand slow, market weak. Turlock section: Mostly 1@1½ per lb. Locals: Klondikes mostly 1@1½ per lb.

HONEY

Supplies of old crop light, of new crop moderate. Prospects are good in Northern California but in the southern part of the state the early dry spell was not compensated by the later rains, and perhaps one-third of a crop looked for. Light wire inquiry. Demand and movement lighter than for previous two weeks. Market firm on White Orange and White Sage, mainly on account of short crop. Quotations are all on new stock. Carloads f. o. b. usual terms at loading points—White Orange 9½@10, mostly 10. White Sage 10; Light Amber Sage 7@7½. White Mesquite 6, Light Amber Alfalfa 5. Old crop White Orange low as 8. Hawaiian old crop practically cleaned up, new crop not ready; no sales reported. Beeswax: Supplies liberal. Demand limited. Crude wax offered by dealers 23@25 per lb.

GRAIN AND FEEDS

Grain Exch. price bid August 23:
Milo: 100 ton lots, 1.53.
Barley: 100 ton lots, 1.26.

HAY

Alfalfa Growers of California report:

Market showed little change during week. Receipts small, with prices well maintained.

In most local marketing districts demand and volume of business show improvement, with widening difference in prices above those of central markets, amounting in some localities to as much as $5 a ton above central markets.

There were 780 tons of grain and alfalfa hay received on the Los Angeles tracks the week ending August 20, with 310 tons held over.

No. 1 Dairy 19.00
Standard Alfalfa 15.00

San Francisco Markets

San Francisco, August 23, 1921.

BUTTER

Dairy Exchange quotations August 23, Extra Choice 44½

Dairy Exchange prices extras this week and year ago:

Aug.	17	18	19	22	23
'21	46½	47	47½	48	48
'20	61½	61	61½	..	..

Rcts three days ending Aug. 19, 2,401 centals.

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases, August 23:

Extras 43
Extra Firsts 41½
Extra Pullets 37½
Pullets, Extra Firsts.....37
Undersized 26½

Prices Extras last wk. & yr. ago:

Aug.	17	18	19	22	23
'21	45	44½	43	43	43
'20	58	58	57	..	..

Rcts. 3 days ending Aug. 19, 203,852 dozen.

POULTRY

Wholesale prices are:

Young chickens: Leghorns, 1 to 1¼ lbs., 32@33 per lb.; 1½ to 1¾ lbs., 31@32; 2 lbs. and up, 31@32; heavy breeds, 1½ to 1¾ lbs., 32; 2 lbs., 32; 2½ lbs. and up, 35@38; staggy roosters, 20@25; old roosters, Leghorns, 15; heavy breeds, 18; hens, Leghorns, large 25@27; small to medium, 20@23; hens, heavy breeds, 35@38.

Ducks: 18 per lb., geese 25 per lb.; turkeys, live, 35; dressed, 45; Belgian hares, live, 15; dressed, 18@20; squabs, fancy, 35; do, common, 2.50 per dozen; old pigeons, 2.00.

LIVESTOCK

California Farm Bureau Marketing Association reports:

Turlock, August 16

46	187	...	11.30
16	245	...	10.30
5	406	80	8.80

One car, 16 consignors, $1,646.80.

Fresno, August 19

90	178	...	11.80
24	192	...	10.60
27	118	...	10.40
3	90	...	10.40
33	145	...	10.10
8	245	...	9.60
18	301	240	7.60
1 boar	...	...	7.50
1 sow and 5 pigs			27.00

Three cars, 25 consignors, $3,854.44.

Bakersfield, August 20

63	178	...	11.25
14	171	...	10.25
6	290	...	8.00

One car, 5 consignors, $1,649.80.

Total for the week, 5 cars, 46 consignors, $7,151.04.

These prices are net to the farmer while the prices of other markets as quoted in the papers are f. o. b. their packing houses.

POTATOES AND ONIONS

Street prices:

Potatoes: White, fy., per cwt., 2.50@2.75; Sweets, 3½@4½ per lb.; Turlock Nancy Hall, 3½@4½ per lb.

Onions: New reds, 1.50@2.00; do, yellow, 2.00@2.35.

Green Onions: 1.50@2.00 per box.

Garlic: 3@5 per lb.

VEGETABLES

Wholesale selling price:

Artichokes: Crate, 4.00@10.00.

Beets: 1.75@2.00 per sack.

Beans: Garden, 3@4 lb.; Italian, 6@8 lb.; Lima, 8.

Carrots: Sk., 1.00.

Celery: 4.50@6.00 cr.; 25 per bunch.

Corn: Alameda, 2.00@2.50; fy., 2.75; extra fy. ,3.00 per cr.

Cucumbers: Bay, 40@50; fy. River, 75@1.00.

Eggplant: Lb., 3@5; Livingston, 6@7.

Lettuce: Crate, 1.25.

Okra: 1.25@1.75 per bx. of about 10 lbs.

Peppers: Bells, 3@6 lb.; 1.00@1.25 lug; Chili, 3@5.

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15c. a Gallon

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Direct from producer to consumer permits this low price for our natural asphaltized roofing paint—the finest preservative and roofing paint under sun. Equally good for shingle, paper or metal roofs. Why pay more for an acid-treated asphalt that eats your roof? Mail orders, barrel lots, promptly shipped.

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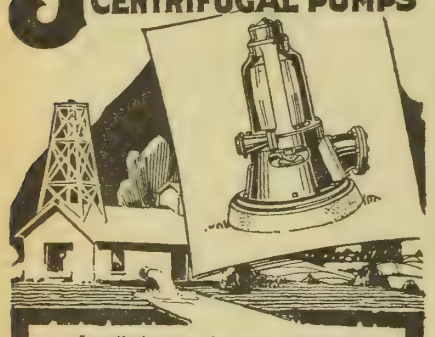

Installations can be made in wells 10 inch or larger. Produce 300 to 4,000 gallons per minute. Ask for Folder No. 4. American Well & Prospecting Co., 407 E. 3rd, Los Angeles

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AND

Now is the time to Apply. Delay only means smaller production — increased production means greater profit. Our price is right. Transportation charges very low. Deposit is located near San Dimas.

Write for prices, analysis and further information to

Marl-Lime & Fertilizer Co.
1030 Citizens National Bank Bldg.,
Phone Brdy. 2393 LOS ANGELES

Big Saving to Bean Growers

Prospective buyers of side delivery rakes are making a great mistake if they purchase before they thoroughly investigate the wonderful value offered in the Thomas Side Delivery Rake, either right or left hand, which has been built for work in the bean fields. There is no better rake built than the Thomas Side Delivery Rake. It embodies every feature necessary for the successful handling of beans and has so proven itself in the hands of hundreds of satisfied users.

Through a fortunate purchase Dixon & Griswold of No. 130 North Los Angeles Street, Los Angeles, are in position to offer the bean grower as fine a side delivery rake as can be bought at any price for the ridiculous figure bean grower will be $100.00 f. o. b. his Side Delivery Rakes have never been cheaper, in a great many years. Why spend additional money to buy a rake no better, perhaps not as good because it is in the hands of some mercantile house which is obliged to ask a higher price for it?

We urge the purchase of this rake through your dealer, but if for any reason your dealer does not care to take your order (which he can handle by merely telephoning your order to us), write or telephone us direct. We guarantee the rake in every particular. Notwithstanding anythiug you may hear to the contrary, these rakes are absolutely the latest style and pattern of rake built by the Thomas Manufacturing Co. The rake is the equal of any in performance and superior to most of the so-called side delivery rakes for beans.

A liberal stock of repairs is available at all times. The price to the of $100.00 f. o. b. any railroad point. railroad station.

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WEATHER REPORT

San Francisco, Cal., August 20, 1921.

Stations	Rainfall Wk.	Rainfall Season	Rainfall Norm.	Temp. Max.	Temp. Min.
Eureka	.01	.01	.14	70	52
Sacramento	.00	.00	.00	96	54
San Francisco	.00	.00	.01	77	53
San Jose	.00	.00	.02	90	46
Fresno	.00	.00	.00	98	59
San Luis Obispo	.00	T	.03	82	50
Los Angeles	.00	T	.00	82	58

Spinach: Lb., 2@4.
Squash: Bay, 35@50 per 40 lb. lug; Italian, Peninsula, 1.25@1.50 lug; neck, 25@35 lug.
Tomatoes: Sacramento and Peninsula, 1.00@1.40; few 1.00@1.75 large lug; fy., 3.00 cr.

FRESH FRUITS

Apples: Gravensteins, 3½ tier, 2.50@2.75; 4 tier, 2.35@2.60; 4½ tier, 1.65@1.85; B grade, 3½ and 4 tier, 1.75@2.25; 4½ tier, 1.25@1.50; Alexanders, 3½ and 4 tier, 1.50@1.75; 4½ tier, 1.00@1.25; White Astrakans, nominal. Crabapples, 1.50 per small lug, 75@1.25 per small box, 2.00@2.25 per apple box.
Avocados: California, doz., 3.00@5.00; large, 6.00@8.00; Fla., 5.00@7.00.
Bananas: Lb., 6@7; Hawaiian, 6½@7½.
Blackberries: 30@35 per drawer; cr., 50@60.
Cantaloupes: Imperial, nominal; Turlock, 75@90; do, ponies, 30@50; flats, 25@50; Honey Dew, 75@1.25 per crate. Casabas, 1.00@1.25 per crate, 1½ per lb. Persian melons: Southern, 1.00@1.50; Modesto, 2.50.
Figs: Black, single layer, 50@1.00; double, 1.50@2.00; White single 50@90; double, 1.50@2.00.
Gooseberries: 7@8 lb.; English, 15 lb.
Grapes: Seedless, 65@1.25 crate; Tokay, 1.25@1.65; black, 1.25@1.50; Malaga, 1.25@1.60; Muscat, 1.50@1.75 per large lug, seedless, 1.25@1.75; white Cornichon, 2.00@2.20 per crate.
Huckleberries: 18@22.
Nectarines: Wrapped, 1.50@1.75 per box; unwrapped, 1.25; Sacramento River, 2.00 per crate; No. 2, 1.50@1.75.
Peaches: 50@75 per small lug; large lug, 1.25@1.50; El Dorado Co., 75@1.25; Clings as high as 2.75.
Pineapples: 4.00@5.00 dozen.
Pears: Bartletts, No. 1, wrapped, 2.50@2.75 bx.; other grades, 1.50@2.75; 75@1.75 lug.
Plums: Santa Rosa, 50@1.00 per crate; other varieties, 50@1.00 per crate, 1.00 per lug; egg plums, 50@90.
Prunes: Cr., 1.00@1.25.
Quinces: 1.25@1.50 lug.
Raspberries: 60@75 per drawer; some 85.
Strawberries: Peninsula and Watsonville, 50@60; Watsonville cr., 1.00@1.30.
Watermelons: ¾@1¼ per lb.; 1.00@3.00 per doz.

DRIED FRUITS

Prunes, 1921 (Cal. Prune & Apricot Growers): Sunsweet Quality, bulk basis: 30-40s, 9c; 40-50s, 8c; 50-60s, 6½c, 60-70s, 6c; 70-80s, 80-90s, 90-100s, 5½. Growers Brand ¼c less on all sizes. All prices subject to change at any time.

BEANS

Below California Bean Growers Association shippers prices choice recleaned:

Large Whites	5.00
Small Whites	4.50
Pinks	6.20
Mexican Reds	6.00
Red Kidney	9.00
Henderson Bush	4.00
Cranberries	5.50
Bayos	7.50
Blackeyes	4.50

HAY AND FEED

Alfalfa Growers of California state that prevailing prices f. o. b. S. F. are:

No. 1 Dairy	15.00
Standard	14.00

Under date of August 20, A. W. Scott Co. says:
Receipts continue heavy and demand light with a consequence of a forced market and general dullness. Better grades are comparatively scarce and have held up fairly well, but there has been an oversupply of low grade so that the difference in value between the best grade and the poorest grade is wider than usual. There is hardly a sign of life in the local alfalfa market. Mill and dairy feeds are depressed and generally lower, feeling the effect of the Eastern market and the continued liquidation.
We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers charges of switching, cartage, commission and handling expenses must be added according to conditions).

Wheat Hay No. 1	15.00@18.00
Wheat Hay, fair grade	13.00@15.00
Tame Oat Hay	12.00@15.00
Wild Oat Hay	10.00@12.00
Alfalfa Hay, later cuttings	12.00@14.00
Stock Hay	8.00@10.00
Barley, Ground	31.00@33.00
Rolled	29.00@30.00
Oats, Rolled Feed	30.00@32.00
Bran and Millrun	28.00@30.00
Middlings	40.00@43.00
Linseed Meal, Nominal	37.00@40.00
Cocoanut Meal	22.00@25.00
Alfalfa Meal	22.00@24.00
Cottonseed Meal	35.00@40.00
Sugar Beet Pulp	32.00
Molasses, Tank	21.00 Barr 25.00
Milo Maize	38.00@41.00
Corn Meal & Crkd Corn	38.00@41.00
Scratch Feed	45.00@48.00

GRAIN

Wheat: Milling, 1.90@2.00; feed, 1.90@2.00.
Barley: Feed, 1.22@1.27½; shipping, 1.30@1.45.
Oats: Red Feed, 1.25@1.40.
Corn: California yellow, 1.55@1.60; Eastern yellow, 1.55@1.60; white Egyptian, 2.20@2.30 per cental; California red milo, 1.80@1.90; Eastern red milo, 1.80@1.90; Eastern kafir, 1.75@1.80.

Citrus Markets

Shipments
Shipments of citrus fruits to date since November 1, 1920, Southern California' Oranges, 35,454 cars; lemons, 9,933; total, 45,387. To same date last season: Oranges, 27,420; lemons, 7,179; total, 34,599. From Central California to date this season: Oranges, 6,644; lemons, 212; total, 6,856. To same date last season: Oranges, 5,377; lemons, 289; total, 5,666. From Northern California to date this season: Oranges, 305; lemons, 5; total, 310. To same date last season: Oranges, 261; lemons, 23; total, 284.

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Mail all classified copy to Los Angeles Office.

POULTRY

Continued requests are being received by the California Cultivator for varieties of poultry not advertised in our columns. If any of you, our readers and friends, have any you wish to dispose of, send a small advertisement to this office and you will be doing our readers a service as well as yourselves.

Day Old Pullets—Here is your chance to get day old White Leghorn and Ancona chicks guaranteed at least 90 per cent pullets. We are taking orders fast for August and September delivery. We also have R. I. Red and Barred Rock chicks but do not separate the sex. All chicks are from strictly thoroughbred laying stock and are hatched right and shipped by Special Delivery Parcel Post. Send for prices and get your orders in at once. We also have a limited number of pullets from two to four months old and yearling hens. Orange County Hatchery, Santa Ana, California.

Mission—FALL CHICKS—Hatchery **White Leghorns** — Our superior laying strain means early maturity and heavy laying; hatched right; priced reasonable; any quantity. Also trapnested Brown Leghorns that are winners. R. I. Reds, Barred and White Rocks, Black Minorcas. Prices run from 13 to 18 cents, depending on breed and quantity. Safe delivery, parcel post or express. Write for circular at once as fall supply will soon be booked up. Mission Hatchery, Campbell, California.

Petaluma Hatchery—Established 1902 by L. W. Clark. White and Brown Leghorn chicks from heavy laying free range stock, every Monday and Thursday. We positively guarantee safe arrival and full count of good strong chicks and no questions asked. Send for prices and terms. L. W. Clark, Petaluma, California.

Fine Young King Pigeons $3 a pair. Guineas $5 a pair. Wyandotte, Partridge Rock and Leghorn eggs $3 a setting. Are disposing of some of our breeding geese; offering them at a bargain price. Yearlings $15 a pair, 2 year old birds $20 a pair. All bred from imported stock. Send for catalog. Paradise Valley Poultry Ranch, National City, California.

It's no wonder so many poultry raisers make a failure of the business. Without any knowledge of raising poultry people will branch out expecting to make a success. By putting in practice the valuable contents of POULTRY FOR PROFIT, $1.00 postpaid, success is assured in the poultry business. Cultivator Publishing Company, Los Angeles, California.

White Leghorn Baby Chicks — Walter Hogan stock. We get all our eggs from one flock of over 4,000 Walter Hogan hens that have been carefully Hoganized. Our specialty is first class White Leghorn hens that satisfy our customers. We will have chicks September 1st. Lyon Hatchery, Gardena, California.

Baby Chicks—Barred Rocks and Reds, 25, $5.00; 50, $9.50; 100, $18.00; White Leghorns, 25, $4.25; 50, $8.00; 100, $15.00. Shipped every Monday, Parcel Post, special delivery, prepaid. Established 1915. Hargett & Son, Route 2, Box C, Compton, California.

Chicks Every Week from good layers. Fall Broilers pay. Pullets make good layers. R. I. Reds, Barred Rocks, White Leghorns. Safe arrival guaranteed. Write for circular. Stubbe Poultry Ranch & Hatchery, P. O. Box 67, Palo Alto, California.

White Leghorn Baby Chicks from heaviest laying (Hoganized) stock. Safe delivery live, vigorous chicks guaranteed. No money in advance; pay on delivery. Prices on request. Established 1898. MUST HATCH INCUBATOR CO., 438 Seventh St., Petaluma, California.

Baby Chicks from my carefully selected, heavy laying strain of pure bred S. C. White Leghorns. Am booking orders now for August and September delivery. Write for prices. J. R. Heinrich Poultry Yards, Arroyo Grande, Cal.

Baby Chix from selected, mature S. C. White Leghorn hens. Safe arrival, full count, strong chix, insured. Hawley's Hatchery & Poultry Farm. Route A Box 315A, Lodi, California.

Barred Plymouth Rocks — "Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Vodden, Los Gatos, California.

White Leghorn Baby Chix from Petaluma's heaviest producing stock. We guarantee safe arrival. Literature on request. Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

"Eastman's Bred-to-Lay" Barred Rocks. Fall Chicks—March, April pullets. Fairmead Poultry Farm, Fairmead, California.

Success in business is attained by experience and knowledge. The poultry business can be made to pay by following the teachings and information contained in POULTRY FOR PROFIT, $1.00 postpaid. Cultivator Publishing Company, Los Angeles, California.

SEEDS AND PLANTS

Reliable Seeds—Ask your dealer or write for our Reliable Seeds and Instructive catalog. AGGELER & MUSSER SEED COMPANY, 620 S. Spring Street. Branch—767 S. Central Avenue, Los Angeles, Cal.

LIVESTOCK

Shorthorns, Shropshires, Berkshires, Shetland Ponies, Bronze Turkeys. W. P. Rocks, Butte City Ranch, Box C, Butte City, Glenn County, California.

Polled Herefords and Durocs — Diablo Stock Farm, G. W. Emmons, Prop., Danville, California.

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You can become a farm owner on terms very much like those you are now paying to rent land. We have deep, rich soil with complete irrigation and drainage systems. We are willing to cooperate with hard working, reliable men who want to become owners of farms. Sutter Basin (in the heart of the Sacramento Valley) is your opportunity. Write now.
SUTTER BASIN COMPANY,
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Ten Acres Full Bearing Apricots and Peaches—30 tons 'cots this year; 6 room modern house, 2 room tent house, barn, garage, chicken pens, 100 hens. Located 1½ mile east of Hemet on Florida Avenue. Mtg. $3000. Will consider mostly exchange, mostly for rental property or smaller home clear, in any good Southern California town. Mrs. C. A. Lawrence, E. Florida Avenue, Hemet, California.

For Sale—40 acre ranch under three different irrigation systems. Two sets of buildings, would divide. Rich sandy loam suitable for alfalfa, fruit or gardening. Located in Monterey County in the Fort Romie Colony. Half mile from good grammar school; 4 miles from town. At $600 an acre. If interested inquire of owner, L. E. Pugh, R. F. D. Box 14, Soledad, California.

For Sale — Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

CATTLE

Registered Ayrshires — Three Canadian Ayrshire cows five and six years old; two bulls of Robin Hood breeding, one and two and a half years old; three heifers from these cows, eighteen, eight and seven months old. Price reasonable. W. G. Akers, Gato Ranch,, Santa Barbara, California.

For Sale — Several registered Guernsey bull calves, one old enough for service, Edgemoor Farm breeding, reasonably priced. Apply to Dr. J. A. Woodside, Santee, San Diego County, California.

Guernseys — Grape Wild Farms—Berkshires—Young bulls, from calf age up to 16 months old, of May Rose breeding and out of A. R. cows. Bred sows and gilts, service boars and pigs of both sexes for sale. Grape Wild Farms, Escalon, California. A. B. Humphrey, Proprietor.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Berylwood Stock Farm—Breeders of registered Holstein cattle and Duroc-Jersey swine. Every cow an A. R. O. and T. B. tested. Bulls and females for sale. J. W. Snodgrass, Hueneme, California.

Yearly Record Holsteins—Bulls from 500 to 1,000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

For Sale—80 head of range cattle. Address C. Eichenhofer, Palmdale, California.

Some Choice registered Holstein heifers and bulls of serviceable age for sale. J. W Scudder, Escalon, California.

Winsor Ranch Jerseys—Bull calves with production behind them, at reasonable prices. BONITA, CALIFORNIA.

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For Sale 40 rebuilt windmills, tanks, pumps, steel towers, cylinders, rods. Special new 1,000-gallon galv. tanks, $39.25; 2,000, $53.25; 3-in. irrigating pipe, $14.75; 4-in., $18.75; also used pipe. Why pay more? Demmitt, 120 N. Main, L. A.

For Sale—Pomona Pump, 28 head; 30 Holt tractor, Saunders plow, disk cultivator. Clarence Wagner, Terra Bella, California.

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Wanted—Unsulphured dried figs and other unsulphured fruit. Write for information. Martin A. Witt, 120-122 West Ann Street, Los Angeles.

We Will Buy your Calla Lily roots. If you have 100 or more, write us. Sevin-Vincent Co., 512 Washington St., San Francisco, California.

Farm Wanted — Wanted to hear from owner of a farm or good land for sale; possession this winter. L. Jones, Box 569, Olney, Ill.

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⅝x4-4 Ft. Ceiling	$28.00 per M
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1x4 Flooring	38.00 per M
1x6 Drop Siding	35.00 per M

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Corn Harvester cuts and piles on harvester or winrows. Man and horse cuts and shocks equal corn binder. Sold in every state. Only $28 with fodder tying attachment. Testimonials and catalog FREE showing picture of Harvester. Process Harvester Co., Salina, Kansas.

TREES

FOR SALE — 100,000 SOUR ORANGE SEED BED STOCK; WASHINGTON NAVEL, VALENCIA LATE ORANGES AND EUREKA LEMON TREES; ALSO FUERTE, LYON, PUEBLA AND DICKEY "A" AVOCADO TREES. T. J. WALKER, FIRST NATIONAL BANK BUILDING, SAN FERNANDO, CALIFORNIA.

For Sale—Grafted walnut trees, also citrus and deciduous trees. Order now for 1922 delivery. Get my prices. Ketscher's Nursery, 1101 E. 4th Street, Santa Ana, California. Phone 572-W.

For Sale—Hachiya Persimmon trees on lotus stock. Also budwood or scions for grafting in season. G. W. Sherwood, Fullerton, California.

Nursery Stock: Extra fine Ehrhardt budded walnut trees. V. Ehrhardt, Minnie Street, four blocks south of gas plant. Santa Ana, California. Phone 454-M.

Citrus Nurseries, Murphy Oil Company, East Whittier California. Selected stock for sale; inspection invited.

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Weanling Boars and Gilts by Pathfinder Wonder (Great Wonder I Am ex an 800 lb. Pathfinder sow) for $10 each. Bred sows and gilts. Derryfield Farm, Capital National Bank Bldg., Sacramento, California.

Greenwood Farm Durocs — Moderate prices on bred gilts and weanling boars. Select individuals. Most popular breeding. H. C. Witherow, Mgr., Live Oak, Sutter County, California.

Boyanna Big Type Durocs — Breeding stock, priced right for sale. Inquiries invited. Satisfaction guaranteed. J. Boyd Harrold, Dixon, California.

Big Type Durocs—Better Durocs at right prices. Harvey M. Berglund, Dixon, California.

Winsor Ranch Durocs—The best of stock at reasonable prices. BONITA, CALIFORNIA.

BERKSHIRES

Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Calae Orchards, Martinez, California.

POLAND-CHINAS

Lendorris Ranch Polands — Big type Poland Chinas of all ages for sale. The kind that makes weight quickly. Weanling boars and gilts sired by Lendorris Liberator out of Lendorris Liberty Bond sows. Now ready for delivery. W. L. Haag & Son, Hanford, California.

Registered Poland Chinas. 40 tried brood sows; 40 gilts. Some choice young boars all at reduced prices to move at once. These Polands are as good as can be had anywhere at any price. W. D. Trewhitt, Route B Box 47, Hanford, Calif.

Big Boned Poland Chinas—Bred gilts and young boars priced to sell at once. Young stock, either sex, for sale at all times. Bassett Bros., Hanford, California.

ROOFING MATERIAL

Save Your Roof for 15c a gallon with Asphaltoid. Direct from producer to consumer permits this low price of 15c a gallon. The finest roofing and preservative paint under sun. This is a natural product—why pay more for acid treated asphalt that eats your roof? Mail orders, barrel lots promptly shipped. Equally good for shingle, paper or metal roofs. Woolner Oil Co., 4th and Commonwealth, Los Angeles.

Roofing Paper—
Firsts complete with nails and cement.
1-Ply $1.25; 2-Ply $1.60; 3-Ply $2.20.
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Roof Paint Special.....35c a gal.
Prompt Deliveries on Mail Orders.
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Catalogues and Booklets, office forms and correspondence stationery for the nursery, seed and florist trade; half tone cuts of many standard plants. Correspondence invited. The Kruckeberg Press, 236 Court St., Los Angeles.

MISCELLANEOUS

Lumber, Lath, Millwork—Get our direct-to-consumer prices before building. Catalogue, plan book free. Contractor's Lumber Supply Co., 452 Lumber Exchange, Seattle, Wash.

Use Flink's Perfect Silo Seal and save all your silage. Why waste time, labor and money to put silage into silo only to have it turn out rotten later. Write for booklet, E. Merle Stedman, Escalon, California.

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

$32,000 in Prizes—The premium list of the Southern California Fair, at Riverside, October 11 to 16, is ready for distribution. If interested write for copy to W. W. Van Pelt, Secretary, Riverside, California.

Avoid Law Suits by having your property lines properly surveyed and established by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

Your Farm Paying?—If not, let me help you; can take charge; A-1 reference. J. L., Box 486, Manteca, California.

GOATS

For Sale—Pure Swiss Toggenburgs, does and bucks, from finest milk strains. La Corona Goatery, R. 1-416, El Monte, California.

TURKEYS

Large Number of Choice Bronze Toms and hens, also geese and herding Collie Dogs. Shipped from St. Helena and San Miguel. John G. Mee, San Miguel.

Bourbon Red Turkeys, Buff Orpingtons. The Ferris Ranch, Reservoir Street, Pomona, California.

RABBITS

Pedigreed Flemish Giants — No fancy prices. Maud Beeching, 1578 W. 46th St., Los Angeles.

Southern California Fair

Riverside, Oct. 11 to 16, 1921

The Great Fair of the Great Southwest

WONDERFUL LIVESTOCK EXHIBIT

Horses, Cattle, Hogs, Sheep
Goats, Poultry, Rabbits

Great Agricultural Exposition
The Leading Counties of Southern California
In Competition For Best Product Display

$32,000 IN PRIZES

Biggest Racing Program on the Western Coast

Industrial Exhibit Covering Every Branch of Local Manufactures

American Kennel Club Show
Write for Premium List

W. W. Van Pelt, Secretary — C. H. Lewis, President

Riverside, Cal.

Fresno DISTRICT FAIR

Event of the Year in the San Joaquin Valley

6 BIG DAYS
Sept. 26 to Oct. 1

Last year 120,000 persons attended the Fresno District Fair.

This year, with prizes increased in every department, and many new classes added, the attendance will exceed 200,000.

Prize list totals $15,000.

Write at once for premium list to:

Chamber of Commerce

Fresno, California

Attention Farmers---Bredall Improved Beardless Barley

We are offering for the first time direct to the farmer our celebrated barley which has out-yielded anything we have tried so far along with it in our acre test plots. We also have Mariout and Beldi barley. Dart Imperial, Bunnyip, and Early Baart wheats. Seeds.

WHY NOT? -Grow more per acre? Be free from bearls? Raise a better grain hay? And last but not least buy direct from grower?

We are supplying several Asiatic and European Governments with our Beardless barley, who are now introducing it in their countries.

Write for information and prices to

ANKER A. BREDALL, Box 4, Solvang, Cal.

When Writing Advertisers Mention California Cultivator.

Curly Dwarf of White Rose Potatoes

By A. T. Hooven

OF THE many varieties of potatoes that have been tried in Southern California, none has shown itself better adapted to requirements of this climate than the White Rose. It is the earliest of the white potatoes, not excepting the Cobbler. It is a splendid shipper and well known on Eastern markets. It seldom cuts hollow and is rarely knobby. Also, it seems to adapt itself to various soil conditions. On rich soil it sets and develops a heavy crop. On poor soil it makes a light setting but develops what potatoes it sets to marketable size, whereas most other varieties planted on poor soil make a heavy setting but fail to develop them to marketable size.

In Southern California the spring crop is planted from January to April and dug from May to August. The fall crop is planted in August and harvested in November and December. It is impossible to hold potatoes from the spring crop for next spring planting except by cold storage, which is expensive and has not been as satisfactory as was at first expected. So potatoes from the fall crop are used for spring planting. This condition means that the same variety of potato must be both an early and a late variety. That is, it must be capable of growing in cool weather and in hot weather. No other variety except the British Queen has so far shown this quality. American Wonder, Irish Cobbler, Green Mountain, etc., are of no value for August planting, although they do well when planted in the spring. However, their unsuitability for fall planting leaves the grower without seed for spring planting, except by cold storage or import. Most growers prefer to raise their own seed.

Now although the White Rose has many admirable qualities, it has one defect that is very serious; it is very subject to curly dwarf. Unless a remedy is found this variety is very apt to become profitless.

If a grower is fortunate enough to secure a start with smooth leafed stock he will notice after a crop or two, curly plants here and there. The next planting will show about 25 per cent curly, and the next planting is very likely to be entirely curly, just an occasional smooth leafed plant. The curly plants make a crop but it is only a fraction of what the smooth healthy plants make.

The obvious remedy for this would seem to be to rogue out the curly plants and leave only smooth plants for seed. In my experience this method has not shown itself to be the solution. In the fall of 1915 smooth leafed plants having not less than four pounds of marketable potatoes were chosen from a field. These were planted with the main spring crop, their location of course being noted, and they were very carefully watched, as great things were expected of them. It was sad to note that they exhibited the same per cent of curly leaf as the main planting.

Professor Shear conducted some experiments in Modoc County. Potatoes from smooth leafed plants were planted in tuber units, that is cuttings from the same potato were planted in a definite location. He observed that cuttings from the same potato gave some curly and some smooth leafed plants. While these experiments are by no means conclusive, still they are not encouraging for the roguing out method in a two crop climate.

It is possible that the curly dwarf is caused by the potato not having sufficient rest period between plantings. Dug in June and planted in August, dug in December and planted again in January or February, it may be that not sufficient time is allowed for the chemical action which changes the starch of the potato to sugar. As the potato sprouts in the ground the starch in the cutting changes to sugar and nourishes the young plant. If this action were deficient or incomplete curly dwarf might result. It is possible to tell the curly plants as soon as they are a few inches high. On very rich soil where the sprout rapidly establishes its independence of the cutting the curliness is not so acute. However, such soil is rare. It is also true that in a one crop climate curly dwarf gives little trouble.

Last fall some of the best obtainable Los Angeles grown White Rose were secured and planted this spring in Humboldt County. They showed a very large percentage of curly dwarf. The curly plants have all been rogued out, and the potatoes from the smooth leafed will be planted in March, 1922. It is hoped that a crop of smooth leafed plants will result, as this will be raising the potatoes under normal conditions, starting with smooth leafed plants and allowing a rest period of several months under natural storage. A few curly ones will be planted in order to note if there is a chance of the potato recovering in a one crop climate.

A few years ago a Los Angeles firm had some White Rose grown on contract in Oregon. Seed from a fall grown crop was used and the resultant crop shipped South and used for spring planting. It was very curly.

White Rose is now little grown in the north, as one experience with the curly dwarf is usually enough for the northern grower. However, it is hoped that by holding this variety in the north for a few seasons that the curly dwarf may be eliminated.

Growers on the Atlantic Coast south of the Mason and Dixon line and even many New Jersey growers have long given up the idea of raising seed for spring planting. Many of the larger growers own farms in Maine and raise their seed there for southern planting. Maine growers take great care to raise seed free from disease and to meet requirements of growers in the south, so the problem on the Atlantic Coast may be considered solved.

Whether such a system is necessary in Southern California for permanent success in potato growing is not certain. My own ten years of experience and observation in potato growing in Orange County would, however, so indicate.

KEEP MANURE MOIST AND APPLY GYPSUM

By Professor Geo. A. Olson

Moisture is of considerable importance in relation to the keeping qualities of barn manure. A high percentage of moisture tends to keep the manure particles bound together in compact form. A low percentage tends to keep the particles separable and apparently the manure is less compact.

The cold manures, such as cow and pig dung, usually contain higher percentages of water than are found in hot manures such as are voided by sheep and horses.

The cold manures are very plastic. This physical condition whereby the moisture and particles are held together serves as a closed gate against the entrance of air. The bacteria which bring about the wrong kind of fermentation and decay thrive only in the presence of air. The admission of air is therefore undesirable and the physical condition explains why the excrement from cows and pigs is regarded as being cold.

The fact that the hot manures contain less moisture and are comparatively more open in nature is favorable to easy access of air. In the presence of the air decomposition takes place and the chemical changes which are rapidly brought about raise the temperature, hence such manures are regarded as being hot.

The moisture contained in carelessly or loosely piled fresh manure will gradually disappear, thereby altering the physical condition of the manure so that the air can easily gain entrance. It is this condition which hastens fermentation and the loss of the most valuable fertilizer component, nitrogen.

Careful packing or letting the cattle tramp over the manure pile will tend to maintain a satisfactory moist condition and suppress fermentation. The inclusion of agricultural gypsum is effective in holding the ammonia nitrogen, it also reduces the loss of organic matter.

Under conditions where the manure

is not properly packed as much as 70 per cent of the ammonia nitrogen may be lost unless agricultural gypsum has been used to tie up this valuable and expensive plant food.

It is imperative that the manure pile be kept moist and compact. Liberal applications of agricultural gypsum should be made for two reasons; first, to preserve the organic matter, and second, to prevent the loss of the gaseous ammonium carbonate. Agricultural gypsum changes the ammonium carbonate into a very stable ammonium sulphate. The transformation readily takes place in the moist manure pile.

THE STATE FAIR

(Continued from Page 195.)

waving of flags and the yards upon yards of bunting, together with the tremendous activity which is everywhere apparent makes one realize that he has at last reached the great state fair.

Immediately before us, standing out as the central permanent structure, is the great Agricultural and Horticultural Building, 488 feet long and 112 feet wide. Before going there, however let us turn to the left and visit the big automobile tent. Last year it contained 89 models of well known cars, fashioned in all the elegance that the automobile maker's art can devise; this year we are promised even a larger and finer exhibit. This tent is well filled, and as we pass through we observe the superb upholstery, the magnificent body lines and the unmatchable refinements. In an adjoining tent are housed the accessories which go to make automobiling a safe and satisfying recreation. We note spark plugs, shock absorbers, lubricating oils, automatic brakes, speedometers, magnetos and hundreds of improvements which may be added as necessity or convenience dictate.

To the right is the truck tent where from 60 to 70 trucks of various sizes are on display. Beyond is the Manufacturers' Building. This is a beehive of activity, for it contains mechanical contrivances of every description from the phonograph to the washing machine, and dozens of machines are in constant operation.

To the left is the Educational Building which houses the work of deaf and dumb schools, Indian schools and the cities' public schools, revealing the marvelous work done by the state institutions and public schools for the development of California children.

Let us cross the broad drill grounds and enter the magnificent Horticultural and Agricultural Building into which are gathered exhibits from almost every county in California. From the cotton of the Imperial Valley to the lumber of Siskiyou, from the oranges of Los Angeles to the minerals of Modoc, great sections are utilized in a display of the products of our valleys and mountains. The arrangement of the exhibits is most pleasing. Bunting in various colors is used in abundance. Counties compete to produce displays that present their products to the best advantage, mammoth cornucopias pouring forth fruit in abundance, towers of peaches or apples or oranges, minature houses made of pears or raisins. The combinations of decorative art are so pleasing that one wishes to tarry long in this magnificent building. Not only does it display the fruit and the products of the soil but usually exhibits showing the state's measures for prevention of disease and for the prevention and extinguishing of forest fires. A very elaborate series of views and models of the state's institutions is usually shown with lecturers accompanying the exhibits. Splendid views of every part of California are there and commercial exhibits bearing upon the fruit and vegetable industry. The balcony exhibits show tremendous progress in agricultural and horticultural pursuits. Diseases of trees and fruit are graphically pictured with life size models in many instances. Methods of rodent eradication are most valuable and interesting. Parasites and pests of all kinds are shown with the most effective way of destroying them.

As we emerge at the south entrance we are confronted by the big tents of the power on the farm exhibit. There is nothing at the state fair that attracts so much attention. The principal exhibits are the big tractors. There are usually from 30 to 40 different models of various sizes, close to 100 machines in all, from the small garden variety to the 90 horsepower which is used in the big wheat fields and ranches. Accompanying these are the implements for breaking up and pulverizing the soil.

Adjoining the dairy barns are the lighting plants. Modern lighting plants have done much to improve conditions on the farm and at last year's exhibits we counted over a dozen different types.

Close to the lighting plant exhibit is the building of the University of California. Here lectures are held covering every phase of agricultural development. There are also exhibits which are particularly interesting and which bear upon the productivity of California.

To the left of the Educational Building is the big Poultry Building. Last year there were 660 pens and the best birds of the state were on display. The poultry exhibit includes rabbits, pigeons, turkeys, ducks, geese and wild fowl from the state game farm.

In the afternoon everybody attends the races, where prizes aggregating over $15,000 are awarded. The grandstands are filled to overflowing and their seating capacity is about 25,000. On the mile race course are held all kinds of events, saddle horse races, bareback riding, chariot races, man and horse races, dog races, together with gladitorial combats and fancy riding, displays by trick horses and at night a wonderful fireworks display.

To put it mildly, the state fair merits the attention of every agriculturist in California. You cannot fail to realize great benefit not only from an educational standpoint, but from the standpoint of a diversion from routine work upon the farm.

We must not fail to mention the sideshows. They include wild men from foreign lands, fortune tellers, tattooed men, giants and dwarfs, fat men and women, living skeletons, fire eaters, trained animals of all kinds, weird freaks of nature, negroes from the sunny south and Eskimos from the frozen north. On past occasions we have had the Igorottes from the Philippines. Each year sees added features and we are told by the management that there will be no disappointment this year.

The big day will be September 9. Not only is it a legal holiday, but it is also Sacramento Day. As a special feature the world's best athletes will compete in track and field meets.

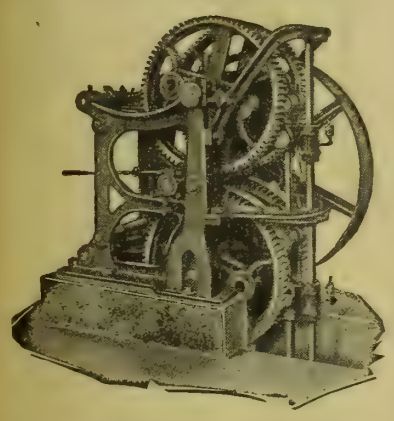
Last year's attendance was 205,000 with 55,000 as the largest single day. Everything points to a bigger and better fair this year and a greater attendance than ever before.

Every man or woman who ever won anything knew how to Dig.

THE MORE THE NOISIER

"The verra best music I effer heard whateffer was doun at James MacLaughlan's," said the piper. "There was fifteen o' us pipers in the wee back parlour, all playin' different chunes. I thocht I was floatin' in heevin."

Anybody can make speed on a down grade.



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Duplex Plunger

Deep Well Pumps

and hold down the most important item of expense in your water supply, which is the power bill.

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Tire Economy

Horse Shoe Cords Outwear Two Ordinary Tires

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Placentia—Schumacher's Garage.
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Redlands—Home Oil Co.
San Bernardino—San Bernardino Rubber Works, 595 3rd St.
Riverside—Riverside Vulc. Works, 303 W. 8th St.
Indio—Indio Garage.
San Diego—Miller Motor Supply, 648 Market St.
Fullerton—Pitts & Wilkinson.
Torrance—Palmer & Stapelfeld.
Anaheim—F. W. James, 223 No. Los Angeles St.
Orange—E. G. Stinson.
Santa Ana—Santa Ana H. S. Tire Co., 417 No. Broadway.
Long Beach—Coombs & Tressler, 31 American Ave.; Jones Hardware Co., 1260 American Ave.
Gardena—E. A. Tepper
Pasadena—Pasadena H. S. Tire Co., 34 No. Union St.; H. W. Shafer, 30 W. Colorado St.
La Habra—Missouri Garage.
Brawley—Quick Service Vulc. Shop.
El Centro—Swinson Service Station.
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Brea—Brea Garage.

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No elaborate campaign of advertising or sales effort has been necessary to advance or maintain the enviable position held by Citrospray.

Black and Citricola Scales, Red Spider and all Fungus growths are so successfully controlled by the use of Citrospray that no other method or preparation need be considered.

Don't neglect or delay the important work of freeing your trees of the burden an unkind fate has placed on them. DO IT NOW!

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Choose Only a Leader

Since Byron Jackson produced the first pump that virtually gave birth to irrigation in the West the position of leadership of this pioneer company has been undisputed.

Time has only served to make the Byron Jackson product the standard of attainment in the pump industry.

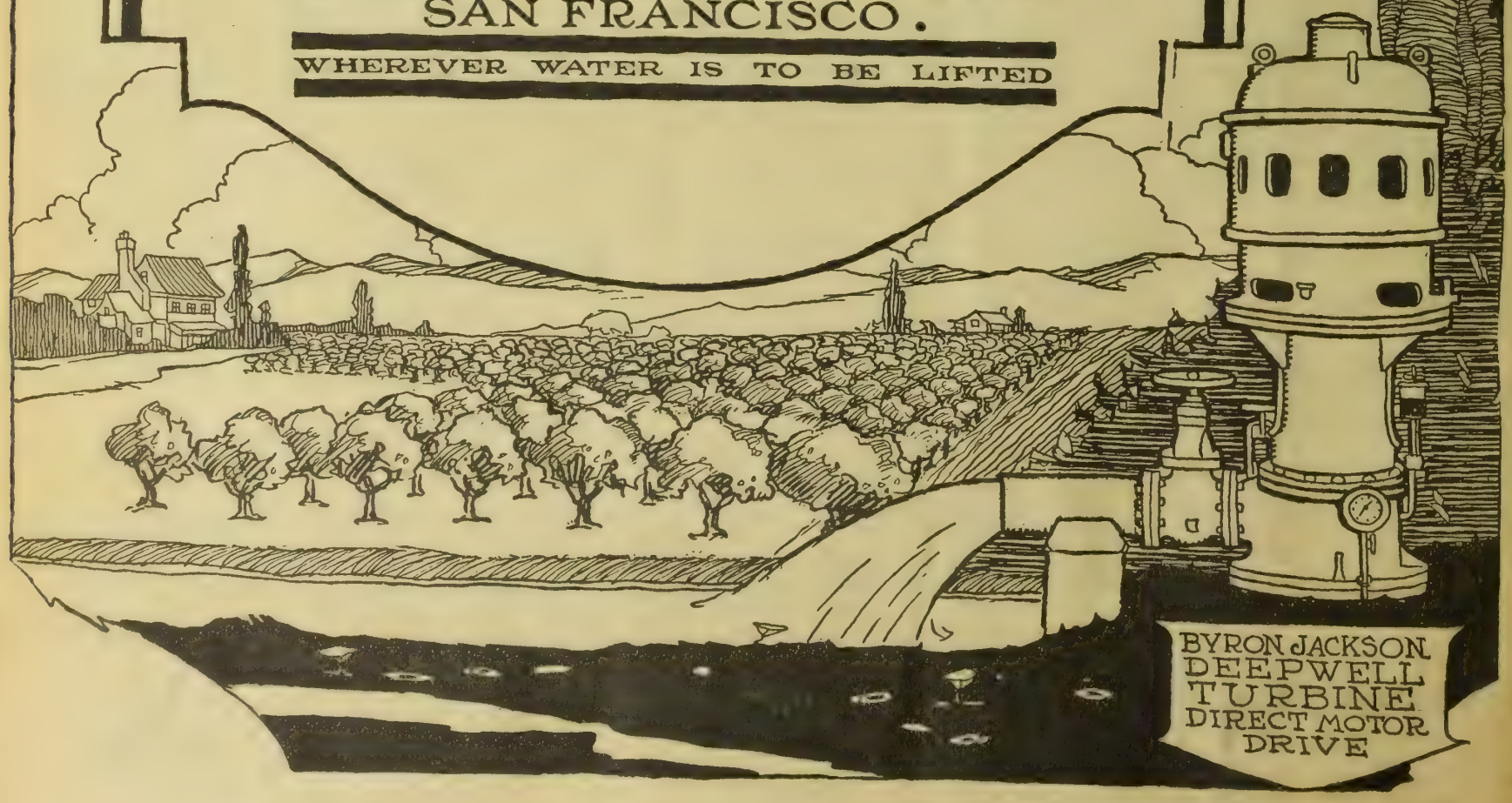
The deepwell turbine here illustrated is but one of the many pumps manufactured by this company—all products of expert engineering, workmanship and material.

Byron Jackson service is an integral part of the purchase of a Byron Jackson pump, beginning at the factory testing department and following the pump through its installation and the years of its operation. Our statewide service car system assures you of having Byron Jackson engineering brought to your very door.

Let us show you the Byron Jackson answer to your water problem

BYRON JACKSON IRON WORKS INC.
SAN FRANCISCO.

WHEREVER WATER IS TO BE LIFTED



CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LVII — September 3, 1921 — No. 10

Efficient Equipment on California Farms

Of the 6,448,366 farms in the United States only 644,088 have water piped in the houses. This is practically one out of ten. California homes are different. There are in this state, or rather were in 1919, according to the census report showing conditions on January 1, 1920, 117,670 farms. For the convenience of the homemakers 65,928, or over 56 per cent of these, have water piped in. One in ten in the U. S.; considerably better than every other one in California; in fact, California topped every state in the Union. Even old time settled New England and the Middle West can none of them show as great a number of well equipped homes as does California. The state which makes nearest approach is Pennsylvania with 46,402 homes on her 202,252 farms with piped water. New York and Ohio are also close competitors with Pennsylvania but each of them nearly 20,000 behind California.

Nor is the equipment of our homes the only place where California shows an advanced position, for in automobiles, trucks, tractors, telephones and lighting this state is with the topnotchers.

CALIFORNIA EFFICIENCY

In California there are 117,670 farms. The U. S. Bureau reports:

	Number of farms owning one or more	Percentage of farms	Total number on farms	Rank
Automobiles	62,453	53.1	71,518	8th
Trucks	5,909	5.0	6,416	6th
Tractors	12,131	10.3	13,852	5th
Telephones	37,309	31.7	.....	20th
Water Piped	65,928	56.0	.....	1st
Lights	30,519	26.8	.....	4th

Automobiles

The number of farms in the United States which reported equipment with one or more automobiles was 1,979,564, or 30.7 per cent. In California 62,453 farms reported automobile equipment. This is 53.1 per cent. The total number of autos on these farms is 71,518. Presumably this is not half the number used by California farms today. However, it is a good figure to use in comparing this with other states of the Union as conditions were, so far as could be secured by census report, on January 1, 1920. States reporting more than half their farms equipped with autos were Nebraska, Iowa, South Dakota, Kansas, Minnesota, North Dakota, with California and Illinois ending the list of toppers.

Motor Trucks

States which lead in motor truck equipment are small states which have great cities. For instance, the District of Columbia, which reports only 29 farms also reports 14.2 per cent of them supplied with motor trucks. The only states which approach the District are New Jersey and Rhode Island. But of real farming states, those showing greatest number of motor trucks are: Pennsylvania with 9,372; New York, 9,259; Iowa, 8,910; Ohio, 7,319; Nebraska, 6,548; California, 6,416; Illinois, 6,154. In percentage California tops all these with 5.0.

Tractors

Three and six-tenths per cent of the farms of the United States were reported as having tractors, January 1, 1920. This was one farm out of every 28 and means a total use in farming operations of 246,139 tractors on that date. In actual numbers California stands fifth among the states; in numbers the order is: Illinois, 23,102; Iowa, 20,270; Kansas, 17,177; Minnesota, 15,503; California 13,852; North Dakota, 13,006; South Dakota, 12,939; Nebraska, 11,106. These eight states report more than half of all the tractors on farms in the United States. There were 38.2 tractors for every 1,000 farms for the country as a whole while these eight states made a showing of 106.8 for every 1,000 farms and California 117.7 tractors for each 1,000 farms.

Telephones

Of all the farms of the United States there were 38.9 per cent with telephones. In this respect California fails to reach averages and the possible explanation is in her mountain ranges and great distances. Of California's farms 37,309 reported telephones. This is 31.7 per cent.

Water and Lights

As noted above, here is where California leads off. Water equipment is reported in —(Continued on Page 247.)

Established 1877 Forty-fourth Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877

Combined with California Cultivator 1914 Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

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Entered as second-class matter February 12, 1900, at the post office at Los Angeles, California, under the Act of March 3, 1879.

Saturday, Sept. 3. 1921

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

If among the more than 40,000 Cultivator's weekly circulation any fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

EDITORIALETTES

Figures make dry reading, but there are some on this week's cover which are far from being dry. They show much as to California's rank among other states of the Union in power farming and farm equipment. Best of all, they show California as a home making state and first in the Union in that wonderful blessing, running, or rather piped, water in the home. California stands first not only in greatest number but in percentage of homes so equipped. In autos, tractors, and power farming equipment, in every case, we are with the Upper Ten.

* * *

We referred last week to the packer control bill and the fact that the packers are yet in entire control. Meantime, however, the Packers and Stockyards Act has passed; it has been signed by the president; now comes word from Washington that the president has signed an appropriation bill calling for $240,000 to be placed in the hands of the secretary of agriculture, this to make up for the lack in the original bill which carried no appropriation for enforcement.

* * *

Next week there will be a bit of advance story regarding the fruits and other exhibits in the horticultural building at the state fair. The following week there will be description of tractors and farm power appliances and stories of some of the world's finest livestock—this we are safe in saying because California produces some of the world's finest.

* * *

A local paper representing one of the smaller communities near a larger trading center in this state makes complaint: It appears that some of the smaller farmers in the smaller community, only a portion of whom own trucks, unite in shipping their produce to the larger community by bunching their loads and delegating one of their number to haul to the larger market or shipping point. This has resulted, in one case, in the arrest of the driver who was hauling his own and neighbors' peaches to the cannery on the charge that he had not secured a municipal "truck license"; in another, in arrest and fine of $21.80; in another—to save arrest—in the payment of a $25 license fee. If we are correctly informed in this matter, we feel that farmers are very unwise to continue trading in such a community. The Cultivator has been a consistent booster for "Trade in your home community." It's a public spirited step and it builds up and betters your own home. But there is reasonable reciprocity demanded, and any community which drives people away by unfair treatment of necessity suffers great loss of good will.

* * *

Former Governor Frank O. Lowden of Illinois remarks that "Where we find the best agriculture, where we find the farms in the best state of tillage, where they have the greatest prosperity, there we find the largest measure of cooperation among the farmers." And we think we are safe in reminding the ex-governor that the best in agriculture and the largest measure of cooperation both obtain in California.

* * *

Speaking of scrubs, they multiply just as fast as pure breds or high producers, but they never get the right answer.

* * *

Right now at the end of harvest time the mails are burdened with appeals to save the starving of central and eastern Europe. Last season the farmers of the country placed 5,000,000 bushels of grain in the hands of various relief organizations. There are many thousands of lives saved because of this sacrifice made by American farmers and, we may add, by all classes in giving this grain and in transporting. The same hunger exists in the near East, in Hungary, in Poland, and now comes a cry indicating awful conditions in Russia. The response to Russia's cry will not be as free as was that to the others who were suffering, but the poor wretches in Russia who are starving are not the ones who are to blame for the awful conditions which prevail.

* * *

An appeal is made for more "ideal homes" in California. It would take too long to enumerate on this page all of the things which should enter into the ideal, but here are some suggestions for the unideal home: Build the pig stye, if not directly in front of the house, at least nearer the road than the house; put the barn well in front so that the roadside may be used for storage of unused implements; save the labor and water which would be required for a plot of green, shade trees and a row of flowers; economize on paint, running water, bath tubs, electric fans or appliances—but why enumerate more, the American mother will not consent to raise her children excepting in the best and most inspiring surroundings, and if it becomes necessary to maintain such "homes" in order to compete with Japanese labor, we will all quit and give the lands to those who can live under such conditions. "The countryside has slums as well as the large cities," but Cultivator readers are not slum dwellers.

DR. WEBBER BACK

At the August meeting of the board of regents of the University of California, Dr. H. J. Webber was appointed professor of citriculture and director of the citrus experiment station at Riverside. Dr. Webber, who at present is at Hartsville, South Carolina, was formerly professor of plant breeding and director of the citrus experiment station in the state university. It is reported that Dr. Webber will be in California to take up this work by October 1. He will be stationed at Berkeley.

COOPERATIVE INSURANCE

"Figures won't lie," but we mortals have a way of arranging them sometimes so that they do not do full full justice to the case in hand. In the fourth column of Page 196 last week we touched upon "Cooperative Insurance," giving particular commendation to Farmers Mutuals which have saved to farmers and others in this state many thousands of dollars and, still better, given insurance which is dependable and which has never paid losses other than 100 cents on the dollar. In that article we referred to the two largest cooperative insurance concerns in California, being those of Fresno and Los Angeles Counties, each "carrying around $15,000 insurance." This is where the figures lied, or rather three insignificant little ciphers failed to get into line and made our 15 millions of dollars look as if California insurance was pretty small potatoes. So, to repeat: There are 23 mutual fire insurance companies in California, two of which are carrying over $15,000,000 each.

CLING PEACH GROWERS

Cling peaches now have a friend at court. Dr. Moulton, president of the Sutter County Peach Growers, has been active in increasing interest amongst Sacramento Valley canning peach growers until they have awakened to the fact that they must fight their own battles. A letter from Mr. McLeod, manager of the new association, which will probably be state wide in its activities, writes:

"Thirty-odd delegates were elected during our membership campaign in the San Joaquin Valley, representing most of the important peach districts. These delegates met at Stockton, Friday, August 26, and passed resolutions expanding the Sutter Peach Growers into what is to be known as the 'California Canning Peach Growers.' Mr. Moulton, president of the Sutter Peach Growers, Inc., should be thanked by every cling peach grower in the state for his activity during the past six months in their behalf. It is through his untiring energy that the growers of canning peaches are to have a state organization. Committees have been appointed to put the finishing touches upon the rules and regulations which are necessary to the successful operation of any cooperative plan. We have many examples of success and failure to follow and beware, therefore, the cling peach growers have less excuse for failure in this undertaking than any previous association."

FINANCIAL CONDITIONS

The most enlightening information on financial and trade conditions may now be secured through monthly or semi-monthly reports or letters which are sent from various large banking institutions, giving conclusions reached by the more farseeing in the financial world.

Amongst these, and the most general in its scope, is that made by the federal reserve board of the 12th district through the federal reserve bank at San Francisco. This has increased in size until it now is of 20 pages. It is called "Agricultural and Business Conditions of the 12th Federal Reserve District." Note the precedence given to the word "Agricultural." And not only is precedence given to the word, but in the text the industry is given precedence in location and in space accorded. Over a third, in fact, nearly one-half, is devoted to crop conditions of the district, later touching more particularly upon wheat and barley, fresh peaches, pears, apples, dried fruits of all kinds, canned fruits, livestock, wool and dairy products. The remainder of the report is devoted to fisheries, lumber, mining, petroleum, hydro-electric development, manufactures, retail and wholesale trade, commerce, labor, building permits, business failures, bank clearances, savings deposits and other financial matters.

The middle August report takes an optimistic view from the following facts: "Canners of fruits report distinctly stronger demand for their products." "Approximately 75 per cent of the district's 1921 wool clip of nearly 73,000,000 pounds has passed out of growers' hands by actual sale to dealers at prices from 12 to 18 cents per pound." "Heavy showers have benefited ranges previously suffering." "Marketing of this year's grain crop is proceeding rapidly, and many are selling, immediately after threshing, in contrast with tendency to hold for higher prices which obtained this time last year." "Exports of wheat from Portland and Puget Sound ports during July, 1921, were 2,972,519 bushels, compared with 2,213,923 bushels same month 1920." "Final disposition of California apricot crop has been made during the last four weeks. The yield is estimated to have been 105,000 tons." "Prices to growers of fruit advanced generally during the last part of July." "The California Pear Growers Association disposed of the fruit under its control at $61.75 per ton for No. 1 Bartletts. Oregon Growers Cooperative Association sold its pool for $65 per ton." "The wool clip is estimated approximately 90 per cent of 1920 clip, which was 81,000,000 pounds. Seventy-five per cent of the clip has been sold outright." "A large proportion of the wool going to Eastern markets has been by rail to Pacific Coast points, thence by boat to Panama."

Financial conditions are indicated by the fact that the bank clearances have decreased slightly over the month of July in 1920, while savings deposits have increased.

California Cultivator

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Orchard Management Studies in Tulare County August, 1921

By Roland Vaile and Gordon Surr.
Read by Prof. Vaile at Growers' Meeting, Strathmoore, August 26, 1921

JUST two years ago the citrus growers of Tulare County asked the University of California through its citrus experiment station to cooperate with them in solving the problems connected with the low production of citrus fruits in the Central California districts. The problems seemed very general ones although more intense on the adobe soils than elsewhere. We frankly admitted at that time that we did not know just wherein the trouble lay—much less did we know the solution for the problems involved. It seemed clear that there was no way to find the correct answer except through careful and continued study of the entire situation, and on that basis we gladly attacked the proposition. We feel justified now in stating what we believe to be some of the needs of the citrus groves and we will suggest solutions for some of them. The matter is complex, and in fairness to all concerned we believe that we should discuss more than merely the handling of soils.

The 1920 federal census shows that the 1919 yield of oranges in Los Angeles County was 3.2 packed boxes per tree while for Tulare County the yield was only 1.0 box per tree. Census figures are apt to be wrong, but our office has attempted to collect figures on orange production and orchard operating costs for the past seven years and during that time we do not believe that the orange business of Tulare County has paid expenses in any single year. Individual groves have, of course, yielded splendid returns and individual growers have had splendid bank accounts, but the industry as a whole has quite certainly shown a net loss. This is a serious charge which real estate dealers may resent, but in this case we believe that the disease must be recognized before a cure may be hoped for. We believe thoroughly that large crops of fine quality fruit can be produced from the majority of Tulare County groves. It is only this faith that allows us to spend our time and your money on the problem. The example of some of the oldest groves in the county has for years justified this faith; the example of some of the younger groves today equally justifies it.

There has not been enough money spent on annual care of the average citrus grove with the result that there has been a lack of detailed attention to important matters and many things have either been left undone or else done poorly. We would not for a moment suggest the spending of money just for the sake of spending it, but it is probable that the average expenditure in this county for the maintenance of orange groves is $75 less per acre than it is in Los Angeles County, and we believe this to be closely related to the difference in average yields.

There are at least three excuses offered for this low expenditure here: First, the example of a few very favorably situated groves that have produced handsomely with seemingly small expense; second, the somewhat prevalent idea that Tulare County soils are naturally so rich in plant food as to require little or no fertilization; third, the unfortunate circumstance that many growers have lacked both the capital and the credit to do what they knew should be done. The first two of these excuses should be dismissed from mind. There is no soil that will long continue to produce crops of oranges without regular and liberal fertilization, particularly with nitrogenous and organic fertilizers; there are no trees that will continue to produce crops of oranges unless they are kept free from insect pests; all groves need especial care in the application and conservation of irrigation water; the best of judgment is required if soils are to be tilled at the right time; in a word consistent care throughout the year is essential, and consistent care is high priced, but not necessarily expensive.

The third excuse deals with a banking problem. I am advised that intelligent and careful growers can always increase their borrowings temporarily to finance any sound policy of fertilization or pest control. Certainly both the grower and the banker would be playing a losing game if this were not so for mortgages cannot be protected nor business be maintained on one box per tree yields.

Lack of adequate fertilization is probably the point at which most of the saving of expense has been made. Certain it is that today one of the most obvious needs of a great many groves is increased fertilization. The value of liberal tree feeding is clearly shown on such properties as the Hammond Lumber Co.'s groves at Venice Cove, the Thompson orchard east of Lindsay, Mr. Rookie's grove south of Lindsay, the Elliott grove at Strathmore, and several others that have been consistently fertilized for several years. Differences are now being evidenced on the experimental plots both at Lemon Cove and at Porterville between fertilized and un-fertilized trees which indicate that mature grove management which omits fertilization for even as short a period as two years is poor business.

The business of fertilizing citrus trees in California is not new, nor does it appear to be essentially different here than elsewhere. Two things are predominate and certain; organic matter that will readily decompose is essential, and nitrogen is equally essential. If these two essential requirements are met it is more than likely that the fertilizer problem will be satisfactorily taken care of. For this purpose the use of stable manure, bean straw, or slightly damaged alfalfa hay in the fall of the year, followed by the use of tankage, fish scrap, cotton seed meal or any similar concentrated material in the early spring, gives a possible program that is flexible enough to meet the fertilizer market situation and yet consistent enough to care for every need of the trees. Sometimes, especially on somewhat "run-down" groves, it is desirable to reinforce the tankage or what-not with sulphate of ammonia or nitrate of lime. About 150 to 200 pounds of actual nitrogen should be applied to each acre annually; generally speaking it is desirable and good economy for at least half of the nitrogen to come from the concentrated spring application. If such a program is followed the requirements for plant food elements other than nitrogen will quite surely have been taken care of. The soundness of such a procedure has been verified so often throughout the citrus districts of California that it now seems unassailable and we believe thoroughly that this program may be used successfully on any citrus-grove soils in Tulare County.

The pest control problem is equally ever present. No other one thing will react on the crop of a citrus tree so disastrously or so rapidly as a bad infestation of scale. This has been unfortunately demonstrated in numerous groves this year. Keep your grove commercially clean from scale at any cost. As to method we suggest that you follow the recommendations of your county horticultural commissioner or his local representative; he is the one disinterested party best qualified to give advice on this question.

A year ago we particularly stressed the question of irrigation, at that time dealing primarily with practices on the adobe soils. During this (1921) summer we have continued our observations at Lemon Cove on the very heavy adobe soil and have also studied the conditions that have existed in the Capt. Anderson grove east of Lindsay. This latter grove is located on so-called Madera loam soil, a granitic sandy loam of medium texture underlain in this case with hardpan at from 6 to 10 feet. This soil takes water fairly freely but has a marked tendency to bake and become flinty upon drying; its water-holding capacity in the field is low and the margin between the point at which plants will wilt and the total capacity is not large. It is, however, typical in these and other respects of large areas planted to citrus in this county.

One thing stands out with clearness for both the heavy adobe and the medium loam soil type: A shorter interval between irrigations than has usually been allowed in the past would be a decided advantage. On our Lemon Cove plots we have applied water to the heavy adobe soil quite regularly at intervals of 28 days this summer. Many growers on this soil type have in the past applied water only once every 40 to 60 days and have then allowed individual furrows to run for five days or at times as much as ten days. In our practice this season we have held the water from 24 hours to a maximum of three days in the furrows. The irrigation results this season have been thoroughly satisfactory from every standpoint. The trees have never wilted and have been kept in vigorous growing condition throughout the summer, also there has been ample opportunity for cultivation between irrigations. The practice of frequent irrigations is not usually recommended for heavy soils, but as we pointed out last season the water penetration on these particular soils is shallow at best, and if enough soaking is indulged in to finally fill the sub-soil, the surface soil will have been waterlogged and cold for an injurious length of time. We do not necessarily recommend the use of any more total water for the season, but merely a different timing of its application.

On the Anderson grove we have attempted no modification of the irrigation practice but have made a study of the moisture conditions that actually occur under ordinary conditions on the loam soil. Two ten-acre blocks have been studied, one of which has been given clean cultivation throughout the summer and the other of which has grown a summer covercrop of Black-eye beans. The dates of the five irrigations and the one rain on the clean cultivated grove have been (using the middle day of a thereto five-day run): April 12, May 20 (rain), June 5, June 25, July 22, August 26. From three to three and one-half acre inches of water have been applied per acre each irrigation. Our moisture determinations, taken at weekly intervals, indicate clearly that under the conditions represented the soil to a depth of four feet has reached the danger point of dryness, particularly just before the July and the August irrigations. At the same time the trees have not put out as regular a growth as might be desired, and there has been considerable actual wilting apparent. Here again a shorter interval between irrigations is indicated; three weeks would seem to be a very desirable period. Just such a change has gradually been made in the Ontrio district during the past few years until a considerable proportion of the groves are on a three-week schedule. We appreciate the many practical obstacles in the way of such a change, but where it can be effected we are sure it will be found advantageous on the type of soil in question and in the hot interior climate.

On the covercropped grove the dates of the seven irrigations and one rain have been: April 2, May 11, May 20 (rain), June 1, June 26, July 14, August 1, August 18. Even with these more frequent irrigations the danger point was reached, particularly before the late June irrigation. (This irrigation had been delayed for about a week because of spraying operations). Towards the end of the season the penetration from the old furrows was very poor—an observation frequently made on this type of soil if the surface has been allowed to bake. On the whole the moisture conditions on this block have been poorer than on the clean cultivated block despite the two extra irrigations. (The amount

(Continued on Page 251.)

Agricultural News Notes of the Pacific Coast

Northern California

All set for the state fair, Sacramento, September 3-11.

Colusa County prune growers have begun picking up prunes.

Trinity County fair will be held September 20-22 at Weaverville.

Butte County orange growers say a big crop is setting on their trees.

The West Side reports smallest grain crop in years has just been harvested.

State highway work on the Trinity river is being done by a bunch of 185 convicts.

Hundreds of hop pickers are busy in the yards of the Wheatland district of Yuba County.

A cooperative livestock sales association for Colusa County is the plan of the farm bureau.

Pear picking is on in Lake County. Sales of drying pears are reported at $45 and $50 per ton.

The California Rice Growers' Association has launched campaign for additional membership.

The olive oil plant at Oroville will again this year be handled by the growers' organization.

Sutter County Peach Growers is conducting a campaign to make it a state wide organization.

The Auburn district of Placer County has already sent out more than 300 cars of deciduous fruits.

Farm Adviser Mark Lee of Alameda County has resigned, resignation to take effect September 1.

A meeting of the California farm bureau will be held at Sacramento during the state fair week.

The Northern California Industrial Exposition was held at Eureka, Humboldt County, August 13 to 19.

The first large sale of prunes reported in Colusa County was a 200 ton lot sold on a basis of 16½ cents.

The annual meeting of the Humboldt County farm bureau was held at Eureka during the industrial exposition.

Cuts in gas rates of from 2 to 8 cents per 1000 cubic feet have been ordered by the railroad commission to take effect August 15.

The St. Helena Vintage festival will feature a big parade on Labor Day, September 3. This will also be American Legion Day.

The Eden Township Farm Products Show held at Hayward, Alameda County, last week was one of the most successful ever held.

Miss Clark has been demonstrating the use of home evaporators in Placer County. Poultry culling demonstrations will be given August 29 by R. B. Eason.

The short courses at the university farm at Davis: Poultry husbandry, September 26-November 5; animal husbandry, October 17-28; dairy manufactures, February 6-16, 1922; deciduous fruits, November 8-December 10; general agriculture, January 2-7, 1922.

At what is said to have been the largest gathering of Shasta County stockmen ever held in Redding it was decided to join in cooperative marketing of stock. Committee in charge of the project: Fred Max, W. J. Albaugh, James Barry, Charles A. Hufford, Jos. R. Hunt.

Central California

Effort is being made at Turlock to reorganize the sweet potato growers.

Packing and shipping of green peaches closed in Kings County the last week of August.

Lindsay, Tulare County, claims to be the center of the pomegranate industry of the United States.

The Boys' Agricultural Club of the Lake district school, Santa Cruz County, staged a poultry show last week.

The Ceres Courier protests arrests of farmers driving produce into Modesto for not having city truck licenses.

Patterson, Stanislaus County, has voted down an ordinance passed by city trustees closing movies and pool rooms on Sunday.

The newly organized Pomegranate Growers' Association of Tulare County is investigating by-products of the fruit, particularly dyes.

The Modesto and Turlock irrigation districts report that practically all rights of way are now secured about the Don Pedro dam site.

Eastern buyers of apples are in evidence in the Pajaro Valley making purchases for future delivery on Atlantic Coast and English markets.

Reedley chamber of commerce has subscribed $12,500 towards a home building campaign, to be put on in the various towns in the Valley.

The Tulare Cooperative Poultry Association sold over $4,000 worth of live poultry during July. The total month's business amounted to $15,000.

Travel to Yosemite has been heavy. 1,297 autos entered the park from August 1-10. Attendance for the season is now estimated at 85,000.

The Fresno district fair announces that prices this year will be reduced to pre-war levels. General gate admission, every day except Saturday, will be 50 cents for adults and 25 cents for children.

San Joaquin Valley Communities met at Fresno on Monday, August 22, appointing a committee to confer with the city of Los Angeles representatives on equitable development of power sites on the Kings river.

The Watsonville Women's Club is planning for an autumn festival to be held some time in October for the benefit of the children's playground. The festival will take the form of the old fashioned county fair.

The formation of the Consolidated irrigation district has been voted. The new district is part of the Pine Flat Reservoir project, which is intended to impound 600,000 acre-feet of flood waters of the Kings river.

Close to 50,000 persons have visited General Grant and Sequoia National Parks up to August 15, or 10,000 less the total attendance last year. Nearly 11,000 automobiles have paid toll so far this season.

Officials of the Associated Raisin Company have been in the Kerman district making survey of the raisin crop. It is probable that the capacity of the packing house at Biola will be overtaxed and that considerable tonnage will be taken to Kerman where a grader will be installed in the alfalfa mill.

Southern California

Blackeye beans are being harvested in Orange County. The largest crop ever is promised.

Air patrols over the national forests are being sent out daily from March Field near Riverside.

A wild west show, called the "Sierra Stampede," will be staged at Hemet, Riverside County, September 5-6.

A general exhibit of agricultural products will be made at the Escondido Grape Festival on September 9.

R. S. Woglum says good work is being done by the aphycus in controlling black scale in some orchards in Covina.

Pasadena men have formed a company to mine marl lime deposits in the hills north of San Dimas, Los Angeles County.

At the annual meeting of the California Lima Bean Growers Association all officers and directors were reelected.

Riverside County supervisors are considering adoption of truck ordinance recently passed by San Bernardino County.

Home Demonstration Agent Mrs. Woodworth of Riverside County has been giving demonstrations of home-drying of figs.

The Riverside County Beemen's Association is making attractive exhibit at the state fair, Sacramento, the coming week.

The California Lima Bean Growers Association has disposed of 98 per cent of its 1920 crop of Limas, 55 to 60 per cent of Baby Limas.

A Los Angeles man has invented a machine which he claims will dig and top beets at a considerable reduction over present costs.

An orange by-products factory at San Dimas, Los Angeles County, shipped a carload of grasshopper poison to Nebraska last week.

Wireworms and low prices have caused many Ventura County bean fields of years standing to be planted to bell peppers and winter peas.

A heavy storm, almost a cloudburst, occurred, in the San Jacinto Mountains last week. Not enough rain fell in the valleys to damage drying fruit or hay.

Fires have been burning on Pine Mountain, Santa Barbara County, for three weeks. Fire fighters have been having a strenuous time in many sections of Santa Barbara County.

Petitions are being circulated asking the state to make survey of the San Jacinto watershed. Statistics are also being collected of wells, pumps, etc., used in the San Jacinto Valley.

President Teague of the California Fruit Growers Exchange has returned from Washington, and expresses belief that the 2-cent lemon tariff will stand and a 4-cent tariff be put on walnuts.

Dr. H. J. Webber, formerly in charge of the citrus experiment station at Riverside, and recently engaged in agricultural work at Hartsville, South Carolina, has been appointed professor of citriculture and director of the citrus experiment station. Dr. Webber will assume his new work about the middle of October.

The Coast and General

The Arizona state fair for 1921 has been called off.

Pendleton, Oregon, holds its tenth annual Round-Up, September 22-24.

Apple districts of Okanogan County, Oregon, report fruit large and developing well.

The early cabbage crop of Northern Colorado is bringing high prices in the Middle West.

The estimated cranberry crop of Washington this year is 50,000 bushels with market value of $250,000.

There is a short apple crop in practically all the states east of the Rockies this year caused by the late frosts.

The report of the Tempe, Arizona, cow testing association for July shows 36 cows testing over 40 pounds fat.

In the July report of the Pima County, Arizona, cow testing association 31 were above the 40 pound mark.

All alfalfa on the Sparks, Nevada, automobile camp grounds has been cut and burned to prevent spread of alfalfa weevil.

The Mesilla Valley Fruit Association of New Mexico has adopted strict picking, grading and packing regulations for the pear crop.

Summer pruning of apple trees is reported to have shown very satisfactory results at the experiment station at Moscow, Idaho.

The Inland Empire Dairy Producers' Association, with headquarters at Spokane, has a membership of 500 owning nearly 3,000 cows.

Farmers of the Mason Valley of Nevada are expending $1,000,000 in diversion of forks of the Walker river into irrigation channels.

The cantaloupe growers of Mesilla Valley of New Mexico are making a fight for reasonable freight rates from Las Cruces to New England points.

The Pacific Cooperative Poultry Association has been organized with headquarters at Portland. Membership is in both Oregon and Washington.

Michigan canners have paid nine cents a pound for Morello cherries. Eighty per cent of the crop of the Grand Traverse section went to the local canneries.

Oregon has a law prohibiting any concern from selling a butter substitute if its firm name implies it is a dairy plant. Thus a "creamery" may not sell oleomargarine.

At the annual meeting of the Arizona farm bureau held at Flagstaff, C. S. Brown was elected president; Dougal Stewart, secretary; executive committee, Fred Tait, Phoenix; Geo. Kinne, Casa Grande; P. C. Merrill, Pima.

The intermountain region shows prospects for an average crop of honey, with decided variations in certain sections. In eastern Oregon and southwestern Idaho the flow did not commence until July 20 and the outlook is for not over half a crop.

The loganberry crop of the Willamette Valley of Oregon is estimated at 10,600,000 pounds as against 7,800,000 pounds last year. Average price around 3¼ cents; last year, 13 cents; 1919, 9 cents; 1918, 5 cents; 1917, 3½ cents; 1916, 3 cents; 1915, 1¾ cents.

The Vegetable Garden in September

Northern California

By A. R. Gould

OUR planting list will be getting shorter as we get into the fall months, and the nights will be getting colder, hence only the more hardy crops may be put in. Continue to collect all crops as they mature and as the plots are cleared they should be well manured and limed if necessary, after which they should be deeply dug. Get them in order for planting with winter crops. The plot you used this season for carrots you can follow up with peas, and the bean plot you may use for lettuce. Keep up a steady rotation of crops, and the practice of changing them around will become a habit with you and a profitable one. There will be less trouble from pests, and this means much to every grower. Store all root crops in the cellar for winter use, but remove any even slightly diseased.

Tomatoes

There should now be heavy crops on these, and there will no doubt be a surplus to can. Towards the end of the month green fruits may be picked and placed in the house to ripen. Destroy all diseased fruits, as they become a menace in the garden.

Potatoes

Digging this crop should ere this have been completed and the tubers placed in storage for the winter. They should be examined frequently and all diseased tubers removed.

Muskmelons, Watermelons, etc.

It is a good plan to protect the fruit by placing a thin piece of board under it to keep it from rotting, which it is liable to do at times through excessive moisture.

Beans

Collect all shell beans and keep in a dry place. Broad Windsor beans may now be sown in rows two feet apart, placing the beans two inches apart in the row. These make an excellent table bean and come in early in the season. They deserve to be more widely grown.

Lettuce

Thin out Los Angeles and May King varieties sown last month, leaving them spaced 18 to 24 inches apart to allow proper development. Give these plenty of water and cultivate frequently. Extend the plot by planting out an extra row or two of the seedlings thinned out, using the strongest plants.

Leeks and Celery

Continue to assist these valuable winter crops by frequent applications of manure water. Careful watch must be kept for slugs which are especially fond of celery.

Cabbage

Sow Savoy and Autumn King now for winter use on well prepared seedbeds. Broadcast very thinly.

Corn

The corn worm will be busy just now, and it will be necessary to keep dusting the silks of the ears with lead arsenate. Cultivate and irrigate between the rows of the sowing made last month.

Parsnips

Sow the variety Hollow Crown in rows two feet apart. Sow the seed thinly in well prepared ground.

Carrots

Sow Danvers Half Long in rich soil in rows 18 to 20 inches apart.

Beets

On richly manured ground sow Early Egyptian in rows 20 inches apart. A sowing of Sea Kale beet or Swiss Chard may also be made now. This is excellent used as spinach.

Strawberries

It will be an opportune time to replant the strawberry plots with the young plants now getting established near the parent plants on the old plots. For the best results the soil must be well trenched with farmyard manure. Keep the plants well watered and cultivated and plant at least 16 inches apart in the rows. To allow plenty of space for cultivating the rows should be 30 inches apart.

Southern California

By D. F. Reichard

ADVICE was given last month to get ground ready for the fall planting; how to get the soil thoroughly wet and how to leave a deeply worked, finely pulverized seedbed. If this was not done last month it should be done as soon as possible this month, for unless the seeds are in the ground by the last of September the produce will not be ready to harvest until well along in the spring. What we are aiming at now is to have vegetables for winter.

In warm sections sweet corn may be planted during the early part of the month; it will be ready for use during the Holidays. Canadian and Ventura Wonder beans will be ready to pick eight to ten weeks from planting, according to how early during the month they are put in; the later they are put in, the cooler the weather, therefore slower development. Do not plant pole beans, squash, cucumbers or pepper, tomato or eggplant unless you are in an absolutely frostless location. If you have such a spot and wish to try any of these tender vegetables, put them in during the first of the month so that they will get as much growth as possible before the long cool nights come.

The main plantings for September are, however, the more hardy varieties like beets, carrots, turnips, endive, kohlrabi, onions, parsley, parsnips and spinach, all of which should be planted in rows where it is to grow and thinned out to four to six inches.

Lettuce, kale and Swiss chard are also sown in rows and thinned out, but the plants are left much farther apart and the plants taken up when thinning may be transplanted.

Plant Laxtonian and Senator Peas. Drop the seed in the bottom of a five inch furrow and cover about two inches with damp dirt, then as the peas grow gradually fill in the furrow. Cabbage, cauliflower and Brussels sprouts may be set out now for early crops or seed may be sown for later crops. The main plantings of cabbage are made in September for plants to be set in November for spring cabbage.

Where spring crops have matured clean up the old plants, burning those that show disease and composting or plowing under the others. Make arrangement for manure of some kind to spread over the garden a little later to be plowed in during the winter.

Southern Arizona

By M. E. Bemis

REAL gardening activity in the irrigated valleys of southern Arizona begins in earnest in September. Preparation work, such as heavy manuring, keeping weeds down, and plowing, should have been done earlier, and if so there is nothing to prevent going ahead with the planting of such things as are on the calendar for September. The list of plantable things is: beans, beets, cabbage, cauliflower, kohi rabi, kale, lettuce, onion seed, onion sets, peas, radishes, spinach and turnips.

In the Salt River Valley beans are planted up to September 15, in the Casa Grande and Santa Cruz Valleys not quite so late, and in the Yuma Valley somewhat later. The Kentucky Wonder, Wonder Wax, Broad Windsor, and White Seeded Kentucky Wonder have been found to do well. Bush varieties that are satisfactory are the Stringless Green Pod, Black Wax and Improved Golden Wax. In Limas the large Lima and Burpee's Bush are good. Beans ordinarily will mature in from six to eight weeks, so if the usual date of early frosts is known one may figure about the right date for planting.

Some small seeds are slow to mature

(Continued on Page 236)

The Ornamental Garden in September

Southern California

By Ernest Braunton

SEPTEMBER is the first real planting month since early springtime and is a very important one in California gardens. In the cold eastern states it is a time to get ready for dormancy or semi-hibernation; but here it is get ready for the exuberant life of the sub-tropical rainy season, erroneously called winter.

The finest commercial sweet pea crop the writer ever saw was from sowings made September 15 and October 1. They are a cool weather crop, especially in the warmer parts of the state, and September is the time for the first sowing. Pansy seed should go in now, and first in annual bedders should come the "Fairy Primrose," Primula malacoides, the best and most continuous blooming small plant we have for the cool rainy season. In either bed or border it blooms for several months.

Cineraria, candytuft, forget-me-not, mignonette, calendula, columbine, all are cool weather plants. Another fine flower is the dwarf annual orange colored daisy from Africa, Dimorphotheca aurantiaca. We hope it will eventually live down its terrifying name for it is a beautiful flower which is in its best bloom when flowers are most scarce. Let's call it African orange daisy. Cosmos is another good thing for winter, with stevia and gypsophila for floral frailties to mix with the larger and coarser flowers. Other seeds for September are: Centaurea, columbine, coreopsis, phlox, scabiosa and stock.

Bulbs

This is the first bulb month. Freesia and Watsonia should go in first and common, or German iris is in prime season; plant or transplant now. Other bulbs for present planting are: Anemone, amaryllis, calla, crocus, cyclamen, hyacinth, iris (all kinds, ranunculus and tulip.

Next month is a better time for the general planting of bulbs, but now is the time to prepare the soil. Work in plenty of well decomposed stable manure and work it in deeply, turning the soil over several times. Bulbs do best, generally, in a light soil. This is partially due to the better drainage afforded, so dig deeply.

If you wish to buy plants to set out, you should be able to get: Canterbury bell, centaurea, columbine, Sweet William, salpiglossis, snapdragon and the perennial and biennial bedders, such as foxglove, phlox, penstemon and the hardy herbaceous plants common in eastern gardens. This is also a time for autumn lawn making.

Nurserymen consider September the golden time for moving plants. Palms and other balled plants are taken up now and stored in sand or sawdust in lath houses. Therefore it is an excellent time to move palms. Sufficient warm weather will yet come to heal roots and allow plants to adjust themselves before winter's rest.

Northern California

By A. R. Gould

THE season is getting well advanced now and our fall flowers will be at their best. Those who kept up a succession will have flowers well on toward Christmas. A successional supply is something to strive after and may be secured by later sowings. It

(Continued on Page 236)

the genuine is certified!

CERTIFICATE OF QUALITY

MELILOTUS INDICA

Purity 99.35% Germination over 92%

Found free from the following noxious weed seeds: Dodder, Star Thistle, Thistles (Circuim spp., Carduus spp., Cnicus spp.) Morning Glory, Johnson Grass, Hoary Cress and Ribwort

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RIVERSIDE—E. L. Koethen.
SAN DIEGO—Harris Seed Co. Sixth St. Seed Store.
SAN FERNANDO—San Fernando Feed & Seed.
SAN GABRIEL—Valley Feed & Supply Co.
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First: Set a Double Catch Gopher Trap.
Second: Have a look at the dead Gopher.

If you use the Double Catch Trap you will have the satisfaction of knowing that the rodent will never bother you again. It takes a lot of feed to board a gopher for a year and that is but a small part of the expense. The loss of a tree worth $50 or more is often the result of failing to get the gopher when you go after it.

This Trap Is Automatically Set for Old or Young Gophers.

READ THIS LETTER

Enclosed is my check for $3.00 for which I would ask you to send me four more gopher traps. It might be of some interest to you to know that this is the only trap we have ever had that would really catch gophers. My man reports that he has caught more gophers with the first four traps than with all the traps and poisons he has put out in the past year that he has been in my service.—Frank A. Guernsey, Manager, Sacramento-San Joaquin Bank, Stockton, Calif.

The demand at this time of the year is as great as ever. If you cannot secure Double Catch Traps from your local Seed stores or Hardware dealers, send direct to us. Price, postpaid, 75c; one dozen $7.50. Money returned if not satisfied.

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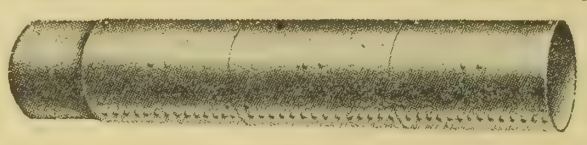

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The famous "4000" seed. A limited lot, fair price.
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Apple Packing and Inspection Regulations

By F. W. Read

BOXES of packed apples shall not be stamped with the state grade designation containing the legend "Inspected under the California Standard Apple Act" unless the contents have been examined by a duly authorized state inspector or unless the lot is one of a unit of like containers so inspected.

Marking on Packing Boxes

The following markings are required on all packed boxes of apples when offered for shipment: Name and address of packer. Grade of fruit. Date of packing. Variety of fruit if known —otherwise "variety unknown." Number of apples in box, or net weight. If other than Standard Box is used: "Irregular Container" in letters not less than one-half inch in height.

If tier markings are employed in preference to number of apples in box, tier markings should correspond to the diameter indicated: 3½ tier, larger than 3⅛ inches. 4 tier, larger than 2⅝ inches but not to exceed 3⅛ inches. 4½ tier, from 2¼ to2⅝ inches inclusive. 5 tier, from 1⅞ to 2¼ inches, inclusive.

If more than 5 per cent of the stock is below size requirements, repacking will be required.

Freedom from Dirt

The grade requirements for both "California Fancy" and "B" grade include the statement "Virtually free from dirt." In years past this requirement has not been rigidly enforced, to the detriment of the quality of the fruit in certain of the commercial districts of the state. For that reason "virtually free from dirt" will be interpreted hereafter to mean clean apples. Under this regulation all apples smeared with aphis honey dew and subsequent smut fungus infection shall be packed in "C" grade. Dirt usually adheres to the olly surface of apples following rains, and such stock will be classified as "B" grade or "C" grade, dependent on the degree of such rain injury. It is recommended, therefore, that growers and packers endeavor to harvest the crop as early as proper maturity will permit.

Russeting

Inasmuch as apples from the Watsonville district are characteristically russeted to a greater or lesser degree, dependent upon seasonal and weather conditions, a reasonable amount of russet will be permitted in the "California Fancy" in the fruit packed in this district. Apples russeted to the extent of "frogging," cracking or excessive roughening will not be permitted under any condition in the "California Fancy" grade.

Definition of "Well Packed"

The term "well packed" mentioned in section 2, subsection (b) and (c) of the California Standard Apple Act, as one of the requirements for "Califor Fancy" and "B" grades, is hereby defined as follows:

"Well packed" shall mean that the box is sufficiently filled to prevent the movement of the fruit in the container and that the top and bottom show a bulge of about one-half to three-fourths of an inch each.

If wrappers are used throughout the container, the apples in all layers except the bottom layer must be wrapped as defined below; the bottom layer may be "flagged."

"Wrap," "wrapping" or "wrapped" shall mean the complete surrounding of the fruit by wrapping material.

"Flagging" shall mean the incomplete or partial covering of the fruit, accomplished by placing fruit in the wrapping material without attempt to close the wapper.

It is recommended that new clean Standard boxes be used for packing "California Fancy" grade apples and that packing house managers cause their packers to be numbered, the number being placed on each box for identification purposes.

Other Defects

In addition to the regulations established above on russeting, no apples shall be packed or designated as "California Fancy" showing any blemishes, scars, limb rubs, bruises, except those caused in the process of proper packing, caterpillar bites, apparent water core or frost injury.

Tolerance

The total tolerance of defects permitted is ten per cent, with five per cent of any one defect.

Certificates at Team Track

Certificates will not be issued on mixed cars loaded on team track unless the local inspection office has been given sufficient notice in advance of actual loading.

Loose Apples

In no case will loose apples be permitted to move if they do not at least meet the requirements of "C" grade. Inspection of such apples will be necessary and under the authority granted the director of agriculture in section 7, subsection (g), a charge of one-half cent per loose box will be imposed for such inspection service.

Copies of the California standard apple act may be obtained on request from State Department of Agriculture, Sacramento.

PRUNE PRICES RAISED

Prices on all sizes of 1921 pack prunes from 30-40's to 60-70's inclusive have been advanced one-quarter of a cent by the California Prune and Apricot Growers, Inc., according to announcement given out by Manager Coykendall.

Today's advance carried out prediction made less than two weeks ago by association officials in naming the first formal prices for 1921 pack prunes, that any change from the prices quoted at that time would be to a higher level.

The new prices named by the association for 1921 pack are: Sunsweet Quality, 30-40's, 9¼ cents bulk basis; 40-50's, 8¼ cents bulk basis; 50-60's, 6¾ cents bulk basis; 60-70's, 6¼ cents bulk basis. Though no prices have been announced on 20-30 prunes by the association, prices being quoted in the trade are 25 cents a pound flat packed in 25 pound boxes f. o. b. California common shipping points.

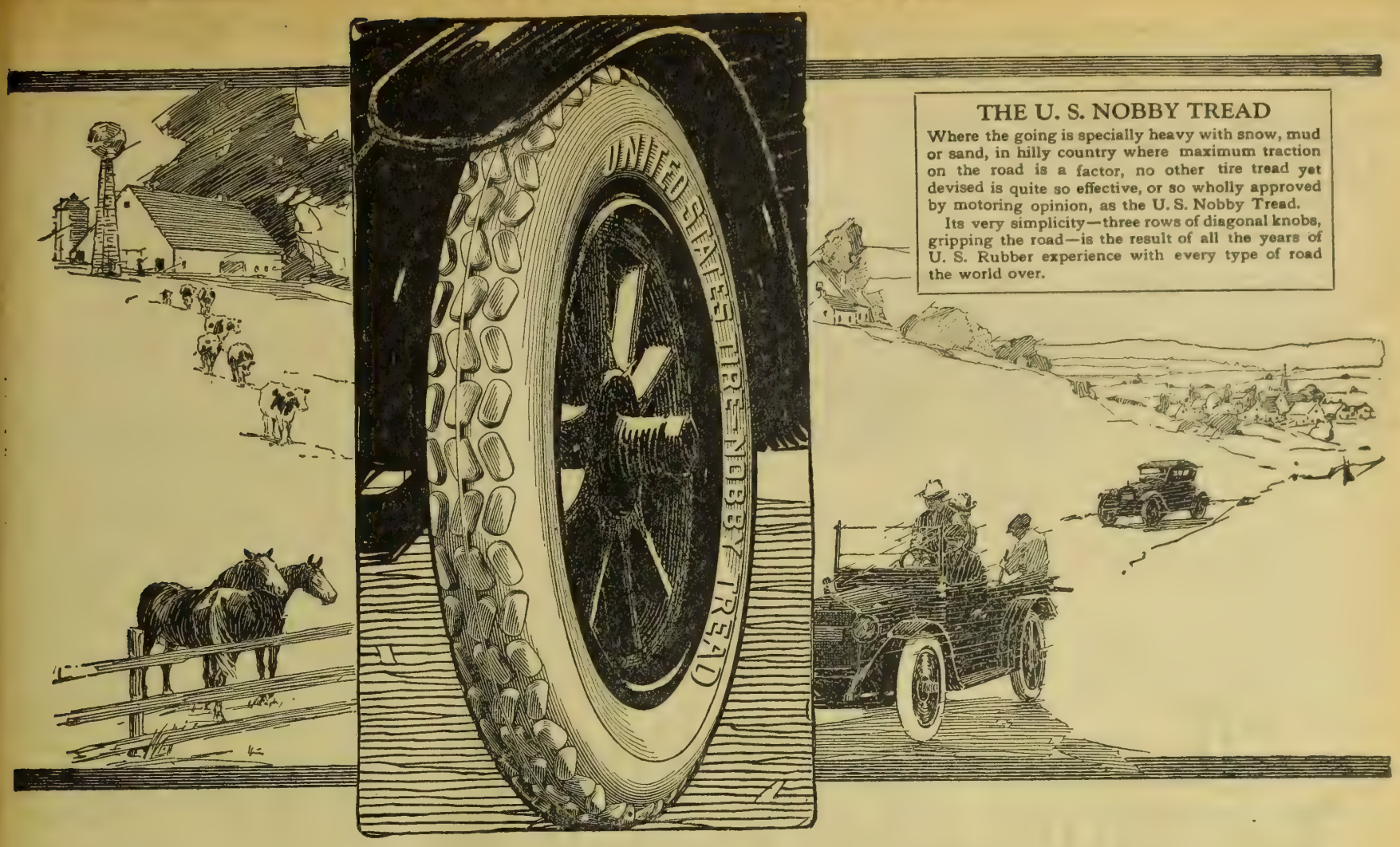
Prices for Growers Brand prunes were also boosted by the association one-quarter of a cent a pound on all sizes 30-40's to 60-70's inclusive. Prices on all sizes of Growers Brand prunes are one-quarter of a cent less than prices quoted for Sunsweet quality.

Association officials announce that they have made a very satisfactory booking of orders for 1921 pack prunes and have on hand sufficient orders to practically clean up the heavy stocks of 1920 holdover now stored in their packing houses throughout the state. Shipping of holdover is being speeded as fast as possible and all stocks of 1920 prunes will probably have been shipped out by the middle of October.

ORANGE COUNTY FAIR

The greatest collection of Orange County farm products ever gathered together is expected to be on exhibition when the fifth annual Orange County fair opens at Huntington Beach for four days. The dates are September 28-October 1. Two large tents, each 100 by 220, will house the agricultural and horticultural displays, and three other tents will contain the automobile, poultry and entertainment departments.

The Orange County farm bureau is taking a great interest in the products exposition, hailed as the "$90,000,000 products show" in honor of Orange County's marvelous production record, and many of its 1,100 members will be represented with exhibits, individually and collectively. The community exhibits department has always excited keen competition, and this year will be no exception for each of the 15 local centers has a committee at work preparing for their community's exhibit at the fair. Cash prizes offered by the committee and the Huntington Beach News in this department are: $125, $65, $35, $15 and $10.



THE U. S. NOBBY TREAD

Where the going is specially heavy with snow, mud or sand, in hilly country where maximum traction on the road is a factor, no other tire tread yet devised is quite so effective, or so wholly approved by motoring opinion, as the U. S. Nobby Tread.

Its very simplicity—three rows of diagonal knobs, gripping the road—is the result of all the years of U. S. Rubber experience with every type of road the world over.

Who can tell a good tire just by *looking* at it? How much do you depend on your dealer's recommendation? Who *is* your dealer? Are the makers of the tires he sells as responsible to *him* as you expect him to be to *you?*

Know the tire you buy, and the dealer who sells it to you. Spend your tire money for assured values. There is everything to gain in a fair and square tire purchase. Get the returns in economy and service you're entitled to.

The U. S. Dealer is a responsible merchant. Buy a U. S. Tire and you get tire satisfaction every time. A brand new tire of fresh, live rubber. A tire with a reputation and nothing to hide. Built and sold on the U. S. basis of quality and conscientious service.

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The Oldest and Largest Rubber Organization in the World

Two hundred and thirty-five Branches

SEPTEMBER IN THE ORNAMENTAL GARDEN IN NORTHERN CALIFORNIA

(Continued from Page 233)

will soon be time to plan for next season's planting and many new ideas may be worked out. Certain shrubs may require moving and those portions of the garden which have become overcrowded will probably need attention. To those who have only a limited space to garden in we would advise very careful selection. Have the plants you love best, as they will give you lasting satisfaction and you will have no regrets. Old fashioned plants like lavender, rosemary, foxglove, Sweet William, mignonette, heliotrope, candytuft, roses and violets help to make up a garden of old time memories. Keep them in mind.

Freesias

This fragrant flower should be planted freely, as it may be used as a cut flower so advantageously. If planted near the walks it is very effective. There are now some wonderful hybrid strains in colors of orange, lavender, mauve, etc. The deep yellow Barr's is also a fine type and Purity is a good white.

Tulips, Hyacinths, etc.

Selections should now be complete and orders given to your seedsman without delay to secure the best bulbs. The Darwin tulips; Europe, Clara Butt, Pride of Haarlem, and Rev. Eubank are all good varieties and will be valuable as cut flowers in April and May. Hyacinths may be obtained in various colors and provide an early display.

Daffodils or Narcissi

For naturalistic or border planting these are unequaled and they may be planted on banks or in woodland places. The best for this scheme are Emperor, Empress, Golden Spur and Poeticus.

Flowers for Early Spring

Violas, pansies, stocks, forget-me-nots, Sweet Williams, snapdragons and English daisy, many of which we advised sowing last month, should soon be ready to transplant into well prepared frames. The seedlings must be shaded from the sun and lath covers will be found useful for this purpose.

Chrysanthemums

These will need feeding with liquid manure once a week at least, if quality flowers are required, and where the large Japanese type is being grown the terminal bud will soon be developing and side buds must be removed. The smaller single and pom-pom types are the most useful from a decorative standpoint. They make an effective display either in the border or as a cut flower and are easily propagated by cuttings or subdivision of the roots.

Hollyhocks and Canterbury Bells

These two charming subjects are found in most gardens and can be grouped in any border. To secure hardy plants for next season's bloom, seed should be sown now. Hollyhocks come in double rose, yellow, red, white and maroon, and they may also be seen in single fringed types. Canterbury Bells come in blue, white and pink, single and semi-double. Sow in sandy soil.

Sweet Peas

Winter flowering varieties should be sown without delay. The trenches should be well prepared.

Flowering Shrubs

After these have flowered they need some little pruning and many will be better for having the dead flowers removed, of which the hydrangea is an example. Any old dead wood must be removed and those shrubs affected by scale or aphis must be sprayed.

Thalictrum Dipterocarpum

This fine perennial has fern like foliage and beautiful lavender flowers and is in bloom for several months. It is now getting very popular and should be planted in the border.

VEGETABLE GARDENING IN ARIZONA

(Continued from Page 233)

while the days are still warm, although cool nights are conducive to germination. Some practice planting on the north side of ridges running east and west. This gives just a little shade and seems to help germination. Grasshoppers are sometimes a menace to early planted gardens. The only practical means of combating these pests is with poisoned bran mash.

Several varieties of beets do well; in fact, most of the common sorts are all right. Frequent cultivation is said to prevent the woody characteristic which spoils a beet for table use. Swiss chard is being grown considerably for poultry. Mangel wurtzels are also grown and should be more extensively. I find that some grow two crops a year, the principal use being for poultry, although as a stock food they are excellent. No doubt there are many small farms that might grow a heavy tonnage for dairy cows and would thus have provided a succulent food without the expense of a silo. The fall crop may be planted at this season the same as table beets.

Cabbage plants may be put out this month, but it is better to get the ground in ideal shape and put them out next month. Cabbage does well and may in time, if freight rates permit, become a commercial shipping crop.

Lettuce is the leading commercial winter truck crop in the Salt River Valley. There are many failures, however. It is not always easy to find a reason for some failures, but in the main, thorough preparation, very heavy manuring and careful planting will insure success, provided that insects and rabbits are kept out. The New York Market is undoubtedly the best variety for shipping and is also a good variety for local consumption. The Harvey House service uses large quantities of Arizona lettuce during the season from January to April when it is available. Arizona Wonderful is an improved variety which is preferred by some.

Onions for transplanting should be planted in September. For main crop in rows where they are to grow it is better to wait until October. Onions are difficult to grow in hot weather, hence beds planted in September should be shaded.

Early varieties of garden peas may be planted now.

Spinach is one of the plants which have commercial possibilities. A considerable quantity is shipped out from the Salt River Valley by express, and quite likely with the proper development carlot shipments may become as extensive as carlot shipments of lettuce.

DRIED FRUITS IN DEMAND

That the tide has turned for the fruit growers of California, that confidence has been restored in commercial circles and pessimism has been supplanted by optimism is indicated by the announcement of the California Peach and Fig Growers that the 1920 crops of both peaches and figs have been disposed of and buying activity has made it necessary to withdraw from the market on five grades of peaches.

In making the announcement the association officials state that during the past 60 days increased buying has featured the dried fruit market, not only in this country but in Europe as well. As a result the association, which markets over 80 per cent of the dried peaches and figs grown in the state, has disposed of all carry-over fruit.

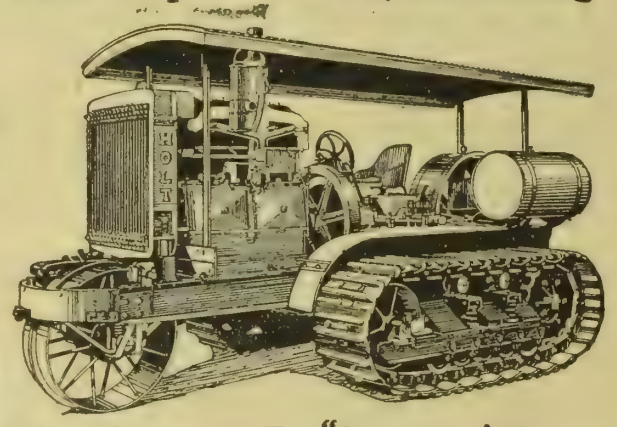
In announcing the association's withdrawal from the market on certain grades, it is stated that the prospects of a light crop and heavy buying in the past few weeks make the move necessary. The grades withdrawn are

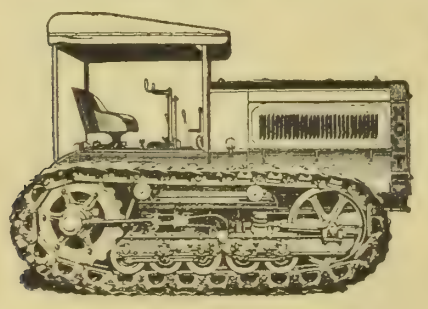
The entire NEW line of "CATERPILLAR" TRACTORS

will be exhibited for the first time in the Holt display at the California State Fair Sept. 3 to 11, including—

The NEW "Caterpillar" 75 Tractor

now offered for the first time to those who want BIG POWER, combined with a degree of dependability, economy and long life never before reached.



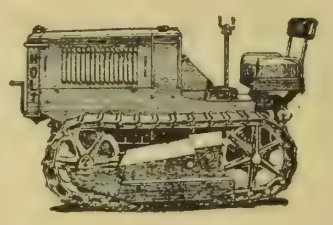


The Western 10-Ton "Caterpillar" Tractor

(shown at the left) 60-belt and 38-drawbar horsepower. This model was first announced only a few months ago, and is another important contribution to better, cheaper farming.

The NEW Little T35 "Caterpillar" Tractor

(shown at the right) now announced and shown for the first time—the supreme small tractor, with every feature of Holt dependability, long life, power and economy compacted into extremely small size. This newest development of Holt unequaled experience will prove to be the tractor sensation of the decade.



The Holt exhibit will also include "Caterpillar" Disc and Moldboard Plows, Subsoilers, Land Levelers, Stationary Power Units and Combined Harvesters, also "Caterpillar" 45 and 5-Ton Tractors.

The new machines in the "Caterpillar" line are offered at pre-war prices conforming with the price reductions recently announced.

Don't miss the exhibit at the State Fair. This offers the first and best opportunity to see these newest achievements of the world-famous "Caterpillar" line

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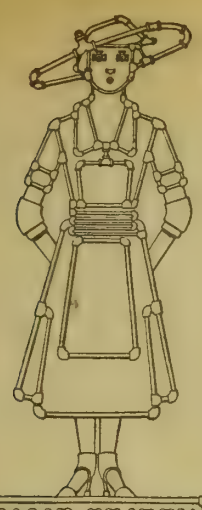

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and has brought contentment and happiness to thousands of home seekers and their families who have started on her FREE homesteads or bought land at attractive prices. They have established their own homes and secured prosperity and independence. In the great grain-growing sections of the prairie provinces there is still to be had **on easy terms**

Fertile Land at $15 to $30 an Acre

—land similar to that which through many years **has yielded from 20 to 45 bushels of wheat to the acre**—oats, barley and flax also in great abundance, while **raising horses, cattle, sheep and hogs** is equally profitable. Hundreds of farmers in Western Canada have raised crops in a single season worth more than the whole cost of their land. Healthful climate, good neighbors, churches, schools, rural telephone, excellent markets and shipping facilities. The climate and soil offer inducements for almost every branch of agriculture. The advantages for

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make a tremendous appeal to industrious settlers wishing to improve their circumstances. **For certificate entitling you to reduced railway rates,** illustrated literature, maps, description of farm opportunities in Manitoba, Saskatchewan, Alberta and British Columbia, etc., write

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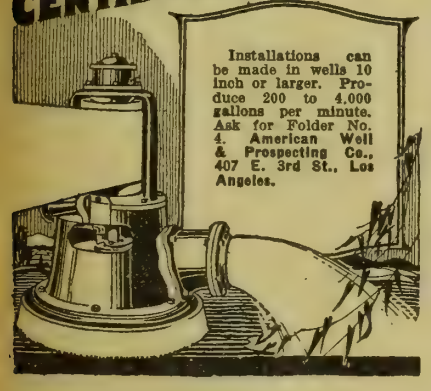
Authorized Agent, Dept. of Immigration and Colonization, Dominion of Canada

160 ACRE FARMS IN WESTERN CANADA FREE

JOHNSTON TURBINE CENTRIFUGAL PUMPS



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Plant Winter Rhubarb
FOR PROFIT

Growers netted this year $1000 per acre. This is the best time to plant for full crop next winter and spring. We can supply plants—all sorts for large fields. Write for price list.

J. B. WAGNER
Rhubarb and Berry Specialist, Pasadena, California.

SEEDS
SEND FOR OUR CATALOG
Aggeler & Musser Seed Company
620 So. Spring Los Angeles, Cal.

Fancy Muirs, Extra Fancy Muirs, Fancy Yellows, Extra Fancy Yellows and Standard Yellows. General Sales Manager A. J. Sturtevant, Jr., commenting on the situation, says:

"We are withdrawing certain grades of dried peaches because we do not dare sell more at this time. Heavy sales and uncertainty in the matter of tonnage in these grades make this move imperative. It is our belief that these grades for 1921 fruit are practically cleaned out.

"With no carry-over of peaches and figs and with the prospects of a light crop ahead of us here on the coast, we anticipate that the 1921 season will see an early close out. With a shortage of peach crops in the East and Middle West and foreign fig production extremely low in prospect, California should experience a revival in these lines this fall."

ALMOND TARIFF FIGHT DELAYED

Manager T. C. Tucker of the California Almond Growers Exchange writes:

"Submission to the senate finance committee of California almond growers' demands for a five and 15 cent protective duty on unshelled and shelled almonds, developments in Washington has delayed tariff legislation, necessitating extension over several months of our fight for continued existence of the state's almond growing industry. Resumption of the struggle in the senate and before the conference committee of both houses will finally determine provisions of the Fordney bill. We take this opportunity to thank you on behalf of our 4,000 members for the assistance you have given them. Our battle will not be won until the tariff bill is signed by the president."

CONTROL OF NEMATODES

Because of the serious problem confronting many sections in control of the nematode pest, we give the following recommendations contained in a recent bulletin of the Florida experiment station:

For the general farmer and trucker with plenty of land the cheapest method of treating nematode infested land is to grow on it immune or resistant crops for three years.

For truckers with limited acreage who cannot spare the land long enough for the starvation method the number of nematodes can be reduced greatly by growing during the summer resistant or immune cover crops in rows which can be constantly cultivated; or by summer fallowing, if loss of soil fertility is of minor importance; or by applying fresh cyanamid at the rate of a ton to the acre a month or two before the land is to be planted; or by flooding the land with water for a week or two.

For seedbeds plant on newly cleared land; or treat the land with sodium cyanide at the rate of 600 to 800 pounds and with ammonia sulphate at the rate of 900 to 1,200 pounds to the acre. This is too expensive for a large acreage.

For the small home garden combine fallowing with the yarding of chickens.

For growing perennial plants plant on newly cleared land; mulch heavily and do not cultivate; water well; for figs, plant near a building; for peaches, graft on plum roots.

Be sure that the seedbed is free from nematodes. Do not set out in nematode free land plants from a seedbed showing any trace of nematodes.

Thoroughly clean all dirt from plows and other tools before taking them into a nematode free field.

Take the same precautions with horses' feet and workmen's shoes.

Do not allow water to wash soil from an infested field over an uninfested one.

A NEW PEACH

New varieties of peaches and other fruits are constantly being grown from seeds for the mere enjoyment of seeing what one will get. One such variety came to the Cultivator office last week, grown by a little chap who planted the seed "for the fun of seeing what would grow." The fruits are of exceptionally good size, form, color and flavor; flesh firm, not fibrous, seeds small. Tree robust and a heavy bearer. The boy is so elated that he will call it "Lloyd," for that's his name.

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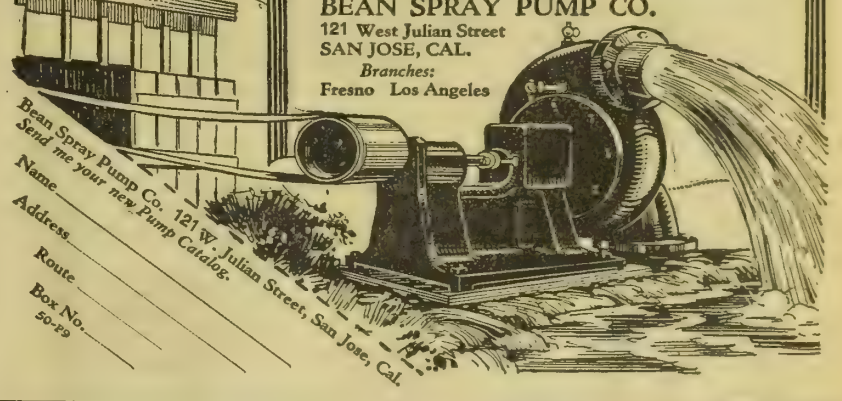

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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Mildew of Grapes

I have several Delaware, Thompson and Muscat vines, all trellised on an arbor, nicely pruned and trained. They did well, fruiting up to July 15, when the leaves commenced to wither and fall. The fruit, then about the size of peas, stopped growing, dried up and fell off. This occurred only on the Thompsons and Muscats. The Concords were not affected and are now ripening. They are all on the same arbor about eight feet apart. What is cause and remedy?—Subscriber, Pomona.

Without being able to investigate these vines it would be our guess that the Muscats and Thompsons are suffering from ordinary mildew. If such is the case your crop can probably be saved next year by thorough applications of sulphur at frequent intervals during the spring and early summer. —F. K. H.

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Bean Straw for Fertilizer

I have planted Blackeye beans between my six year old oranges and walnuts, four rows of beans between tree rows. How can I get most profit from them; let them get ripe and harvest, using the straw for bedding, make manure out of it and haul it back into the orchard and sell the beans for about $3.50 per hundredweight, after paying for threshing, etc., or plow or disk them into the ground while green? How ripe should the beans be before they should be plowed or disked under?—Subscriber, Puente.

The most economical use of bean straw is as bedding or feed. Practically 80 per cent of the fertilizing value of bean straw remains after feeding provided care has been used in saving all stable waste. Besides this it is an excellent absorbent of the liquid portion of the manure, which is far richer in nitrogen than the solids.

Bedbugs

I am a subscriber of your paper and learn so much good from it. How can I get rid of bedbugs so they won't come back?—Subscriber, Paso Robles.

Pour boiling water or hot water containing corrosive sublimate into the cracks where they hide. A daily campaign with gasoline is also helpful. In case they are firmly entrenched and refuse to yield to this treatment then fumigate thoroughly with hydrocyanic acid gas. Close all cracks and openings. Use 1 ounce of cyanide of sodium for every 100 cubic feet to be treated. To this add water, 2 fluid ounces, and sulphuric acid, 1½ fluid ounces. These chemicals must not be put together until one is ready to leave the room and close the house tightly. In fact, these chemicals should be used only by those who understand their use and their deadly nature. One full breath of the pure gas is almost sure death. For particular instructions in fumigating buildings one should see California Cultivator of September 11, 1913, page 246. This number is out of print and we are unable to mail copies.

Alkali Salts

Can you tell me what is causing my alfalfa to die? Dying plants appear in different parts of the field and gradually spots of considerable area die out. I am sending samples of plants that are in different stages of the disease and you will notice that the root appears to rot. This alfalfa has had water about every ten days but I am pretty sure none of it has been scalded, as it made a four to six inch growth after irrigation.—Subscriber, Blythe.

These plants have no doubt been injured by alkali, just what salt or salts we cannot say, but a close examination of the roots indicates injury by some such agent, and no other trouble is apparent.

Potato Pests

Am sending potato leaves with worms and bugs on them. We have sprayed with nicotine and sulphured, but without relief. The same insects are eating the cantaloupe vines. What should I do?—J. L. V., Buena Park.

Eight distinct species were found on these leaves, not all of which are injurious to potatoes or cantaloupes; some are merely parasitic on other insects. The best one remedy to reach the greatest number would be the 5-5-50 Bordeaux mixture, to which add a half pound of Paris green.

Frog Pond

I have a gumbo 'dobe ranch. The soil holds water almost like cement. In my reservoir it grows a long grass that ducks, fish and most all stock relish. I have an electric pumping plant and I can easily keep a pond of ten acres covered with water. Please tell me whether or not turtles can be grown profitably in such a place. If so, what variety? How large will the largest grow and how long does it require them to develop? What is the best food for them? What do you think can be grown most profitably in such a place? Will Indian Runner duck eggs bring as much as chicken eggs? Are grape seed good duck feed? —Subscriber.

We would guess the turtles would be altogether too deliberate in growth to make them an attractive farm crop. If any of our subscribers have had experience, should be pleased to hear from them. We would suggest, however, that such a ranch might offer a frog growing opportunity. Frogs would require much less time for maturing and we believe stand a chance of proving profitable. Before embarking on such a proposition, however, one should look into the market and if possible make contract for future deliveries. Indian Runner duck eggs will not command the price of ordinary hen's eggs. They are larger and, to many of us, just as acceptable as the best of hen's eggs, but the market always cuts them in price. We have no information regarding grape seed for poultry, but it certainly has some feeding value.

Cucumber Beetles

Large numbers of bugs like those herewith enclosed are eating the young leaves of strawberry plants in this district. We have tried some sprays but without destroying the bugs or discouraging their feeding. Please tell me what they are and what I can do to get rid of them.—M. T., Perkins.

The bugs are Diabrotica Soror, the 12-spotted cucumber beetle. Nothing can be done with them that will not also injure the plants or poison the strawberries so they will be unmarketable. Their eating of the leaves is seldom serious and their season of greatest activity is nearly over. Next year they may not be present in such large numbers.

Melons and Tomatoes

Should tomatoes and melons, especially musk melons, be irrigated after the bloom and fruit sets on? I have been told that water causes the bloom to fall. I am a novice at gardening in California and have been guided solely by the Cultivator articles on gardening.—A. L. M., San Fernando.

As you have been growing, so you must continue to grow. If you have been irrigating throughout the summer you should continue to the end. This will result in a continuation of bearing or a second crop. Melons, both water and musk, also tomatoes, are very deep rooting if left to their own resources and need no irrigation if conditions were good at time of planting. We have known all three crops that had but a quart of water to a hill when set and no more until August. Tomatoes were set as plants; the melons were from seeds planted. The soil had been plowed very nearly a foot deep. The crops were fine. An examination of the root system disclosed roots four feet down in the soil. When irrigated in August both melons and tomatoes produced a good second crop. If the plants are irrigated after setting, the soil settles and packs, air is excluded, the root system remains near the surface and irrigation should continue until frosts kill the plants. The best practice is to stir the soil as deeply as possible and work it well before planting, pulverizing it as finely as possible.

Feijoas and Jujubes

What are the feijoa and the jujube, the countries of their nativity, and will they thrive in Central California? Have they any commercial value?—F. B., Modesto.

Feijoa Sellowiana is a guava, native to Southern Brazil, Paraguay, etc., an evergreen shrub of fine appearance which bears excellent fruits in the budded varieties. Jujube is native to Africa, Asia and Australia. It is in appearance quite like a prune, both green and dried, though not closely related to the prunes or plums, though it may be put to similar uses, but is far richer in flavor and food value. Plants are rare at present and extremely hard to get. Both feijoas and jujubes are hardy throughout California. Jujubes are deciduous; feijoas evergreen. Both fruits are of good commercial value.

Thornless Blackberries

Please let me know through Culti-

(Continued on Page 251.)

Household Department

MYSELF

I have to live with myself, and so
I want to be fit for myself to know.
I want to be able, as days go by,
Always to look myself straight in the eye;
I don't want to stand, with the setting sun,
And hate myself for the things I've done.

I don't want to keep on a closet shelf
A lot of secrets about myself,
And fool myself, as I come and go,
Into thinking that nobody else will know
The kind of a man I really am;
I don't want to dress up myself in sham.

I want to go out with my head erect,
I want to deserve all men's respect;
But here in the struggle for fame and pelf
I want to be able to like myself.
I don't want to look at myself and know
That I'm bluster and bluff and empty show.

I never can hide myself from me;
I see what others may never see;
I know what others may never know;
I never can fool myself, and so,
Whatever happens, I want to be
Self-respecting and conscience-free.
—Boston Transcript.

WESTGATE'S DOG

By D. H. Talmadge, in Dumb Animals

WESTGATE'S dog was not popular in the neighborhood. He barked considerably in an annoying tone of voice, and he chased cats, and he was inquisitive in the matter of insecurely fastened ice-boxes, and he was what might be termed a blemish upon the landscape, for he had but one eye and one of his ears had been broken, causing a lopsided appearance rather inartistic, inasmuch as it was not uniform with the other ear, which stuck up.

It is to be admitted, however, that this was the only stuck up thing about him. And he was well bred. Westgate had papers to prove this.

Westgate repaid the faith of the dog with faith, occasionally going to an extreme considered by certain of the neighbors as out of keeping with his standing as a lawyer and leading citizen. As, for example, when he attempted in the course of a Sunday afternoon stroll, to call on the Martins at the Dazzle apartments, and the janitor refused to admit the dog.

"Very well," said Westgate, "we'll both stay out."

Explaining the incident later, he said, "Well, you see, it was like this: I couldn't very well go in without admitting tacitly that I was superior to the dog, which I am not. I am a somewhat different order of being, perhaps. But we sprang from the same Creation, and he knows about as many of the real essentials as I do. If there is any truth in the Love is All religion as applied to this existence, and I do not doubt that it is our only hope for salvation, that dog of mine is so much nearer the Great White Throne than is the owner of that apartment house—but shucks! there is another species of beast prohibited there also—children. What's the use?"

All of which is foreign to the story, beyond the fact that it serves after a fashion to introduce Westgate's dog and to throw a bit of illumination upon Westgate.

The Wilkins residence was separated from the Westgate residence by a strip of lawn perhaps 30 feet in width. In other words, three moderate jumps of the dog and three flops of the pendant car and the animal was in foreign territory, so to speak. And, while it was not distinctly hostile territory, it was very near hostile at times.

It came about one night when Wilkins, in company with Westgate and other leading citizens, was down town attending a protracted meeting of some sort, that the dog chased a man to the roof of the Wilkins porch, and when Wilkins and Westgate arrived they found him there, with the dog sitting tensely upon the ground below and with Mrs. Wilkins in a half fainting condition in the front doorway.

Wilkins invited the man down to be killed. Westgate held the dog. The man came down slowly, and started to run, but caught a guttural, rasping sound from behind him and stopped. Wilkins turned on the porch light.

The man grinned. "A friend down the line gave me a bum steer," he explained. "He said they'd killed off all the dogs in this town by order of the city council. Otherwise I wouldn't be here. Believe me, I keep out of doggy towns. I'm afraid of 'em."

"You are a burglar?" asked Wilkins politely, his hands opening and closing convulsively.

"No," replied the man, "I'm a manicurist."

Westgate laughed coldly. "Cut out the humor," he advised. "What were you doing here when the dog discovered you?"

"Nothin'. I hadn't begun yet."

"What did you intend doing?"

"I intended to outrun the dog, but I didn't. I'm through." He spat disgustedly. "If you gents will let me go I'll promise to leave town tonight and never come back, and I'll tell you why I'm here and all about it. You ain't got anything on me. You can't do anything more than get me sent up as a vag. What do you say?"

Westgate looked at Wilkins. After a scowling interval, Wilkins nodded.

"Go ahead," said Westgate.

"Well, I'd laid out to clean up on this neighborhood. Three times I've tried it during the week—once at that house on the corner, once at the bungalow across the street, and tonight, and every time old Lop Ear yonder has caught me at it." His eyes rested upon the dog not unadmiringly. "I don't lay it up against the dog; he's doin' his duty, and I know he's on the square. Night before last he made a big fuss, barkin' and growlin', and I rockon folks around here thought he was chasin' cats or somethin', and likely they cussed him and his owner some and threatened to complain to the police."

Wilkins glanced at Westgate, who noted something like a blush on the other's face, but said nothing.

"But he was after me, and I was after a watch and some other things I'd spotted through a window. I played tag with him for a while—thought I'd fool him—that's why he barked. He can't be fooled, that dog can't. He's considerably smarter than he looks. Tonight I brought him some meat—"

"Poisoned?" asked Westgate quickly.

"O, no! I hain't fell that low yet. If I can't beat a dog's brain with my man's brain, I give up—that's the kind of a sport I am. G' bye, gents."

"Wait," said Westgate sharply.

The man turned. "What!" he snarled, "you ain't goin' to double cross me, are you?"

"Certainly not. I want to shake hands with you, that's all. A pleasant journey to you."

As the man faded into the shadows, Wilkins spoke. "Westgate," said he meekly, "tell your dog to—to run over to our house any time he feels like it."

HINTS FROM HOUSEKEEPERS

Canned Pears Spoiling

If the lady from Santa Maria who has trouble getting her canned pears to keep will try cooking them longer she will find her trouble will disappear. For years I had the same trouble till a friend told me to cook them till they turned pink and my trouble would vanish.—Subscriber, San Fernando.

Cement Floor for Kitchen

A few weeks ago someone asked for the experience of those who had lived in homes where cement was used for kitchen floors, as she was considering such a one for her kitchen. I had a winter's experience and hope I may never have another. The principal objection is the tiring effect on the entire body. One comes to the end of the day worn out. Then the cement is so cold that one feels the cold through the shoe sole on a cold morning. Personally I would choose a bare wood floor every time in preference to cement.—Subscriber, San Fernando.

Simple Cucumber Recipe

Fill quart jar with small cucumbers well washed, crowd in close as possible. Take heaping tablespoon salt, small tablespoon mustard. Mix with a little vinegar until smooth, then pour on enough vinegar to fill the jar. Put

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3714. Girl's Coat—Cut in 4 sizes: 6, 8, 10 and 12 years. A 10-year size will require 2⅝ yards of 36-inch material. Price 10 cents.

3705. Ladies' House Dress—Cut in 7 Sizes: 36, 38, 40, 42, 44, 46 and 48 inches bust measure. A 38-inch size will require 6¾ yards of 27-inch material. The width at the foot is 2¼ yards. Price 10 cents.

3693. Child's Romper—Cut in 4 Sizes: 2, 4, 6 and 8 years. A 4-year size requires 2¼ yards of 27-inch material. Price 10 cents.

3694-3700. Ladies' Costume—Waist 3694 cut in sizes. 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Skirt 3700 cut in 7 Sizes: 24, 26, 28, 30, 32, 34, and 36 inches waist measure. The waist will require 3 yards of 27-inch material. The Skirt requires 3½ yards of 40-inch material without nap, and 3⅛ yards of 44 inch material with nap. The width of the skirt at the foot is 2⅝ yards. TWO separate patterns, 10 cents FOR EACH pattern.

3689. Girl's Dress—Cut in 4 Sizes: 8, 10, 12 and 14 years. A 12-year size will require 4½ yards of 36-inch material. Price 10 cents.

3448. A Pleasing Apron—Cut in 4 Sizes: Small, 32-34; Medium, 36-38; Large, 40-42; Extra Large, 44-46 inches bust measure. To make the design for a Medium size will require 4½

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PATTERN DEPARTMENT
California Cultivator
Los Angeles

on rubber and top tightly and keep a month before using. They will keep indefinitely. It is such a nice recipe as small or large amount can be made. M. E. H., Walnut Grove.

Pear and Peach Sweet Pickles

Take 1 quart vinegar and 5 or 6 cups sugar, whole stick cinnamon, whole cloves, small amount of each. Let come to boil, put in fruit and cook till tender, put in cans and seal. They never spoil.—M. E. H., Walnut Grove.

Canned Crabapples

In answer to the call for crabapple recipes I am sending one that my mother used when I was a girl and I have always used when I could get the crabapples, but I am sorry to say I can't get them here. I bought some nursery trees, but they did not prove to be what I ordered and we grubbed them out.

I always use the large red kind, just wash them and cut out the blossom end and as much of the core as you can with a small pointed knife, leaving the stem, and cook, using sugar to make quite rich syrup. Seal. I use a small pocketknife to core them.—Mrs. H. E. B., Galt.

Pickled Crabapples

Six pounds of fruit. Leave the stems on and remove the blossom end. Three pounds of sugar, 1½ pints vinegar, with 1 ounce stick cinnamon and ¼ ounce cloves. Boil syrup ten minutes. Steam the crabapples in a steamer until tender, then put in syrup and let boil five or ten minutes, not enough to break, and can immediately.—Mary Bosworth, Stockton.

Crabapple Pie

For these recipes you can use the crabapples that have been drained for jelly but not pressed.

Cook whole crabapples until soft. Rub through colander lightly and use pulp. 1½ cups pulp, 1 cup sugar, 1 tablespoon flour, flavor with cinnamon and nutmeg. Fill crust and smooth top. Pour over the top the following mixture: Beat 1 egg, ½ cup sugar, 2 tablespoons flour, ½ cup cream (sour or sweet), beat up together and pour over the top and bake.

Bake with 1 crust: 1½ cups pulp, 1 cup sugar, yolks 2 eggs (beaten), 1 tablespoon flour. Cover with meringue: Beat whites of 2 eggs, 2 tablespoons sugar, flavor with lemon. Spread on on top and lightly brown. — Georgia Palla, Linne.

Sugar Pie

Line pie plate with crust. Sprinkle over crust 1 cup brown sugar, ½ cup flour sifted over sugar, sprinkle with cinnamon. Turn over this ½ cup cream, sweet or sour (or dot with butter instead of cream). Bake light brown.—Georgia Palla, Linne.

How to Cook Prunes

A great many persons do not know the correct way of cooking dried prunes, so I am sending a recipe from a prune raiser: Wash the prunes through several waters, then pour boiling water on to cover well and let stand all night. In the morning put on to boil in the same water and allow to boil down slowly till the water becomes a thick syrup. Do not use any sugar; the sugar in the fruit is sufficient. They are delicious.—A. E. W., Pasadena.

The Cultivator has request for variety of prune recipes. Can our readers help us out?

HOME DRYING AND SULPHURING OF FIGS

Continuous requests come to the Cultivator for copies of the issue of June 11, 1921, giving directions for drying figs. Extra copies are practically exhausted, so that we are glad to reproduce here method given by Mrs. Malinda Woodworth, home demonstration agent in Riverside County. Mrs. Woodworth says:

"To dry, place the figs on trays in the sun, protected from fogs and insects. Dry until they still give in the hand when squeezed, not until they rattle. Wash 20 minutes in cold water containing four ounces of salt to every gallon. Dry again for one-half day. The figs will plump up.

"Pile them up for a week or two to sweat and pack in clean boxes or jars and seal.

"To sulphur figs, place them on wooden or cloth trays. Pile up trays and cover with a tight box, under which burn sulphur for two or three hours. The sulphuring bleaches the figs and helps to keep away insects. It is not essential, however."

HOUSEHOLD QUERIES

Romance of the Counties of California

There is an inquiry in the Cultivator in regard to the book, "The Romance of the Counties of California." That story has been published in serial form in the San Francisco Examiner for the past two or three months. It is, I believe, being published in book form now.—Subscriber, Turlock.

SOME UNUSUAL CONSERVES

Raisin Jam

3 cups rhubarb, 3 cups sugar, 6 oranges, 1 cup Sun Maid seeded raisins, ¾ cup chopped walnut meats or blanched almonds.

Cut rhubarb in small pieces. Add sugar and cook until tender. Add orange pulp and raisins, cut in small pieces. Cook until thick—about 20 minutes. Add nuts and cook 5 minutes. Pour into pastry shells for tarts or serve as jam. This may be served as a dessert with whipped cream, if desired. If made in a large quantity it may be poured into sterilized glasses and sealed with paraffine.

Plum and Raisin Jam

6 cups pitted plums, 3 cups water, 2 cups Sun Maid seeded raisins, 4 cups sugar.

Cook plums in water until they begin to soften. Add raisins and sugar. Cook slowly, stirring occasionally, until mixture is thick—about 40 minutes. Pour into sterilized glasses and seal with paraffine. This makes about 6 glasses.

Oriental Marmalade

2 cups dried apricots, 1 cup dried figs, 1 cup dates, 2 cups Sun Maid seeded raisins, 4 cups cold water, 1½ cups brown sugar, 2 lemons.

Cut apricots, figs, dates and raisins in pieces. Cover with cold water and soak over night. Add sugar and juice from lemons and cook slowly until thick—about 40 minutes. Pour into sterilized glasses and seal with paraffine. This makes about six glasses.

Rhubarb Compote

6 dried figs, cut in pieces, 1 cup cold water, 6 cups sliced rhubarb, 3 cups chopped Sun Maid seeded raisins, 3 oranges, 1½ cups sugar, 3 bananas, sliced, 1½ cups broken walnut meats.

Soak figs over night in cold water. Add rhubarb and raisins and cook until thick—about 45 minutes. Add orange pulp, sugar and bananas and cook 10 minutes, stirring often. Add walnuts and cook 5 minutes. Pour into sterilized glasses and seal with paraffine. This will make about 6 glasses.

Prune and Raisin Conserve

1 cup prunes, 1 cup Sun Maid seeded raisins, 2 cups cold water, 1 cup brown sugar, 1-3 cup vinegar, 1 teaspoon cinnamon, ½ teaspoon clove, ½ teaspoon allspice, ½ cup chopped blanched almonds.

Soak prunes and raisins over night in cold water. In the morning cook in the same water until prunes are tender. Discard pits from prunes and cut in pieces. Add sugar, vinegar and spices. Cook until thick—about 45 minutes. Add almonds and cook 5 minutes. Pour into sterilized glasses and seal with paraffine. This makes about 6 glasses.

Raisin and Fig Conserve

3 cups dried figs, 3 cups water, 1 cup sugar, ½ cup orange juice, grated rind of 1 orange, ½ cup lemon juice, 3 cups chopped Sun Maid seeded raisins, 2 cups broken walnut meats.

Chop figs. Cover with water and soak over night. Add sugar, orange juice and rind, lemon juice and raisins and cook slowly until thick—about 1 hour. Add nuts and cook 5 minutes. Pour into sterilized glasses and seal with paraffine. This makes about 6 glasses.

HAD NOTHING ON HIM

She (with magazine)—This article says that the emperor of Japan has 10 men to carry his umbrella.

He—That's nothing. I'll bet 20 men have carried mine.—Enid (Okla.) Daily News.

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HEATING THE HOME

Heating the California home is not a very serious problem. However, occasionally one wants to know as to methods of maintaining a more equitable temperature during the months from December to March. Those who do not have sufficient eucalyptus trees to furnish a log for throwing into the fireplace on a rainy day or a cool evening may be interested in Farmers Bulletin 1174 of the United States Department of Agriculture, Washington, D. C., "One-register Furnaces."

This bulletin discusses the principles and the advantages and disadvantages of the one-register warm air house heating system. It is not the purpose to recommend this system in preference to others but to present the facts in order to assist the householder in selecting a heating system that will give the best service and most satisfaction for the money expended. The system of warm air heating treated in this bulletin is that in which all the heat is supplied through one register. It has come into much favor during the last few years. It is known by a variety of names, one-pipe, pipeless, one-heater, single-heater, one-register, or single-register, and not infrequently by the name of the manufacturer of the furnace. This bulletin explains the system, illustrates the circulation of cold and warm air in the rooms, and points out conditions under which satisfactory service can be expected.

ORANGE VINEGAR

Here are directions sent out by the California Fruit Growers Exchange for making orange vinegar:

Put the juice from six Sunkist oranges in a glass jar; also a cake of compressed yeast, dissolved in a little of the juice; cover with cheesecloth and let stand in a warm place about a month, or until sour enough to use in place of cider vinegar.

UNAPPRECIATED

"So that's the oldest inhabitant—104 years old?" said a tourist in a village. "No wonder you're proud of him." "I dunno about being proud of him," responded a native. "He ain't done nothin' in this yer place 'cept grow old, and it's took him a long time to do that!"

LIMERICK NO. 888

Once a young fellow named T8
Asked K8 if she'd be his m8.
"I'm sorry to st8
I'm married," said K8,
And such was the young fellow's f8.
—Riverside Press.

THE RACE

Griggs: I repeat, the race is not always to the swift!

Briggs: Righto! The hare gets in the soup as often as the turtle!—Cartoons Magazine.

PROMISES

"Have you kept all the promises you have made?"

"Kept 'em!" exclaimed Senator Sorghum. "I haven't even kept count."

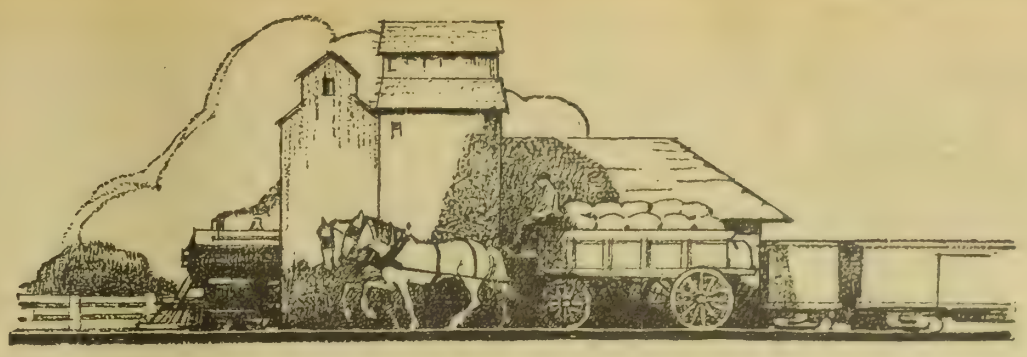
The time to fix yer tractor
Is 'afore she's on the bum,
But the feller that'll do it
I claims he's goin' some!
—Zeb Jones.

The time to lock yer barn
Is 'afore yer horse is stole.
The time to sell yer corn
Is 'afore ye've spent yer roll.

"If smoking of cigarettes on the part of women is especially obnoxious to men it will probably become a reminder of the fact that cigarette smoke is equally obnoxious to the average woman."

While the highways are getting terribly crowded with automobiles, yet the congestion is somewhat relieved by the large number being smashed up all the time.—Pajaronian.

Let scientists seek vitamines,
With Nature intervening.
Just eat eggs, butter, meat and greens,
You'll get the viti-meaning!



Has the Farmer a Real Grievance?

Yes, he has!

He has a real grievance because the prices he receives for his products have declined more than have the prices he must pay for almost everything he buys.

Because of these facts the farmers are not making as large profits as they believe they are entitled to make. Some blame their troubles largely on the railroads. "Freight rates," they say, "are the cause of low prices for grain and livestock."

The real cause lies much deeper. The decline in the prices of farm products began before freight rates were advanced, and would have occurred if freight rates never had been advanced. It is due to world-wide changes resulting from the transition from war to peace.

The Railways Have the Same Grievance as the Farmer

The rates the railways are getting, although they have been advanced, are much lower in proportion than the cost of almost everything the railways must buy.

The average passenger rate is about 50 per cent higher, and the average freight rate about 74 per cent higher, than five years ago—in 1916, before this country entered the war.

From these facts it might be thought that the railways should be making money.

BUT—the prices the railways are paying for

Materials and Supplies are now 65 per cent higher than in 1916;

Taxes are 90 per cent higher;

Coal per ton is 144 per cent higher; and

Wages of railway employees are still 124 per cent higher per hour.

In consequence of these things, while the total earnings of the railways are 60 per cent greater than in 1916, THEIR EXPENSES ARE 110 PER CENT GREATER and THEIR PROFITS, SINCE THE PRESENT FREIGHT AND PASSENGER RATES WERE MADE, HAVE BEEN LESS THAN ONE-HALF AS GREAT AS IN 1916.

What has happened to the Railroads since 1916:

Increase in Revenue [redacted] 60%

Increase in Expense [redacted] 110%

In 1916 railway wages were $1,469,000,000. After the Railroad Labor Board advanced them last year they were at the rate of $3,900,000,000, an increase of 165 per cent. The recent reduction ordered by the Labor Board was only 12 per cent, leaving wages about $2,000,000,000 greater than in 1916.

Coal cost $1.76 per ton in 1916, the total fuel bill being $250,000,000. In 1920 the average price was $4.20 per ton and the coal cost $673,000,000, or $423,000,000 more than in 1916. The average cost of railway coal is now $4.29 per ton.

With prices of materials and supplies still 65 per cent higher than in 1916, the materials and supplies which the railways bought for $447,000,000 in 1916 would now cost them $750,000,000, or over $300,000,000 more.

Present Railway Rates Chiefly Due to Labor Costs —Not to Return on Capital

Existing railway rates are higher not because railroad capital is receiving or seeking a larger return, but because railroad LABOR, and labor producing things the railroads must buy, is getting so much more than formerly.

EVERY INCREASE in rates since 1916 has been intended to meet—but has not met—these increased expenses, CHIEFLY LABOR, and NOT to increase profits.

Railway profits have GONE DOWN.

In 1916 the railroads earned 6 per cent. In 1921 they will be fortunate if, on present rates and present expenses, they earn 3 per cent.

A GENERAL reduction of rates now could not be made without BANKRUPTING most of the railways and making business of ALL KINDS much worse for everybody.

The managements of the railroads are making every effort to reduce expenses so that rates can be reduced later. Some reductions of rates already are being made.

There is NO OTHER WAY than by reductions in expenses to secure general reductions in rates that will not be ruinous to the railways and make them unable to render to the farmers the transportation service they need. Those who obstruct reduction of expenses not only hurt the RAILROADS but the FARMERS as well.

Association of Railway Executives

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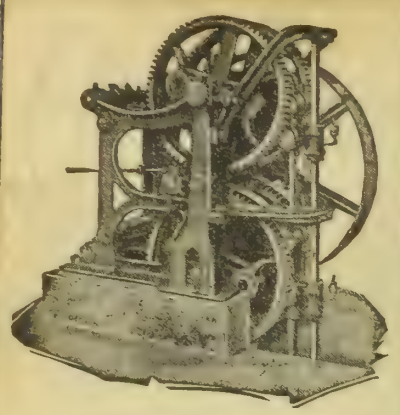
Those desiring further information on the railroad situation are requested to address the offices of the Association or the presidents of any of the individual railroads.



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Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins

October 4, S. O. Walker, Visalia.
October 5, Robt. T. Curtis and Son, Tulare.
October 6, Alex Whaley, Tulare.
October 12, John Saxer, Modesto.
October 21, Robt. N. Clapp, Nuevo.
November 3, A. W. Morris & Sons, Inc., Woodland.
November 9, Palo Alto Stock Farm, Palo Alto.

Herefords

October 19, W. J. Bemmerly, Woodland.
October 27, Pacific Coast Hereford Breeders' Association, California National Livestock Show, San Francisco.
November 1, J. H. Cazier and Sons, Sacramento.

Shorthorns

October 28, California Shorthorn Breeders' Association, California National Livestock Show, San Francisco.
November 2, W. M. Carruthers, Live Oak.

Guernseys

October 20, Walter H. Dupee, Rhoades & Rhoades Sales Pavilion, Hynes.

F. L. Washburn, for many years president and general manager of the Western Meat Co., has acquired an interest in the long established and growing business of Chas. S. Hardy at San Diego and will assume the active management of the business. The growth of Southern California, the development of the Imperial Valley and the improved conditions in the Republic of Mexico all help to give San Diego a commanding location for securing a continually increasing business.

Judges announced for stock classes at the Southern California Fair at Riverside, October 11-16: W. H. Standish, Lyons, Ohio, dairy cattle; Frank W. Van Natta, Ontario, beef cattle; Prof. E. H. Hughes, Davis, horses; Carl P. Thompson, Stillwater, Oklahoma, hogs.

A LIVESTOCK SHOW AT SAN FRANCISCO

After a lapse of a year a livestock show will again be held at San Francisco, and while it is recognized that the show this year will be held under circumstances that ordinarily would not be considered favorable, the fact that the California National Livestock Show is to be held at all indicates that there is a real need and a real place in this state for a big livestock exhibition at the close of the general fair season.

The initial show will be held in San Francisco, October 22-30, and will be housed in large tents to be erected at Twelfth and Market Streets. The premium list makes provision for cattle, horses, sheep, goats and pet stock and poultry. No swine will be shown for the reason that the health authorities refused to permit the exhibition of swine in that location. The money prizes offered for the above classes of livestock are very liberal and sufficient evidence has been manifested to assure a splendid showing. Plans are already under way looking to the financing of a permanent show beginning next year. The breeders of California are determined to have such a show and the city officials of San Francisco are entering into the project with enthusiasm.

The management of the show this year rests in the hands of the livestock interest of the state, which assures a business like exhibition. C. N. Hawkins, president of the show, is one of the best known livestock men of the West; C. R. Thomas, general manager, is well known through his connection with the Los Angeles shows, and John A. Bunting, secretary, is likewise secretary of the Pacific Coast Hereford Cattle Breeders Association. The directors are: Geo. V. Beckman, H. V. Bridgford, John A. Bunting, Owen Duffy, Ansel M. Easton, Sam H. Greene, C. N. Hawkins, Geo. H. Hecke, Frank E. Honeywell, Romie C. Jacks, H. A. Jastro, E. B. McFarland, R. P. Royce, T. H. Ramsay, B. F. Rush, Wm. H. Saylor, D. J. Stollery, W. T. Summers, J. I. Thompson, J. E. Thorp, Wm. A. Ward, Jno. P. Walker, Alex M. Wilson.

The California National Livestock Show is in every way worthy of the unstinted support of the livestock interests of the state and the entire West, and it is to be hoped that the initial show will be the forerunner of a permanent show such as will be a credit to the state.

YOUNG CALVES MUST HAVE CARE

The first important factor in raising good healthy calves is breeding, and the second is the care they receive before maturity.

The proper feeding of the calf begins before it is born. Cows in a poor condition give birth to weak calves that are difficult to raise. A cow should be dried off at least six weeks before calving. When about to freshen she should be given a clean stall to avoid danger of infection. If there has been any white scours on the place the navel should be disinfected with tincture of iodine immediately after birth.

The calf must have the first milk, or colostrum, but may be taken from its mother on the second or third day.

In case the cow should die in calving or develop disease, like garget or milk fever, whole milk from another cow should be substituted, and the calf given two or three tablespoonfuls of castor oil.

Whole milk should be fed until the calf is two or three weeks old. Skim milk may be gradually substituted. It is of the utmost importance that calves be fed the same amount of milk, at the same temperature, from clean buckets, at the same time each day. Never feed enough milk to quite satisfy hunger. Sterilize the milk buckets, which are used for feeding the calves, each day, the same as the milk cans.

You can't raise healthy calves by feeding several of them, of different sizes, in a trough. It is economy to feed calves in stanchions, asserts Geo. H. Glover of the Colorado agricultural college. They will spill less milk and cannot suck each others ears, which is detrimental. The fat that has been removed in skimming may in a measure be substituted by adding a handful of linseed or corn meal to each pail of milk. Calves will begin to eat hay and grain at an early age especially if they are in the same pen with older calves. The main thing in raising calves is cleanliness, regularity, and freedom from overfeeding.

HOW CHEESE GETS ITS FLAVOR

In perusal of standing literature by the division of animal industry, of the state department of agriculture, with regard to the production or development of the various flavors of cheese, the following reasons as gleaned from authorities on the subject may enable us to comprehend in a measure the causes of the characteristic tastes and odors of cheese.

The flavor of this product develops during the ripening process and is due to the splitting up of the casein, to the salt added to the curd, and, in some instances, to those bodies elaborated by molds which develop in the cheese. This cleavage, or splitting up, gives rise to the fatty acids and their compounds, as well as to the ammonia-like bodies of which a thoroughly ripened cheese contains a large amount.

The dissolving of the nitrogenous material of cheese and the other changes taking place are brought about mainly by the action of enzymes or micro-organisms originally present in the cheese. These changes are to be considered fermentative rather than putrefactive.

Mild cheeses are ripened in large bulk. Thus, a relatively small surface is exposed to the air, and in some cases, the rind is covered with a coat of paraffine. If, however, a strong taste is desired in cheese, it is ripened in small pieces, thus exposing more surface to the action of the air.

The preference for cheese of mild or strong flavor rests with the individual, and from the chemist's point of view there is no reason for stating that highly flavored cheeses with strong odors have undergone putrefactive decomposition.

FLY SPRAYS

Two gallons of kerosene, 1 quart of pine tar, ½ pint of crude carbolic acid. The addition of 1 quart of fish oil will improve the mixture.

Another spray consists of 1 gallon of kerosene, 5 oz. powdered napthaline, and 1 pound of laundry soap dissolved in hot water. Sufficient water is added to make 4 gallons of the mixture. It may be applied with a sponge or cloth.—Wisconsin College of Agriculture.

DONATION SALE

Following their usual custom the members of the Western Berkshire Congress will hold their annual sale of Berkshires at the California State Fair this year for the benefit of their publicity and promotion fund.

Some very high class animals are being consigned by prominent breeders of the various states on the Pacific coast and unusual interest is being manifested. The exact date of the sale has not yet been announced but will probably be held following the placing of awards in that division.

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Shire owners, record colts young, fees are double after one year old. Prepare Shires for fall shows, premiums are very liberal this year. For information on Shires write
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Fall and Winter 1921-22

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	Last year's prices	This year's prices
Sheep-Lined Coats	$ 12.95	$ 7.95
New Worsted Serge Suits	28.75	15.95
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S. O. Walker Herd

Visalia, Cal.

Thursday, October 4

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35 DAUGHTERS OF KING OF THE BLACK AND WHITES, many out of A. R. O. dams with records up to over 30 lbs. butter in 7 days, and most of them bred to a grandson of Sir Pietertje Ormsby Mercedes.

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55 Registered Holsteins 55

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Thursday, October 6

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20 DAUGHTERS OF SIR AAGGIE DE KOL ACME 2ND, five of whose seven nearest dams average 1154 lbs. butter in one year.

KING TOLA KORNDYKE PONTIAC, son of King Korndyke Pontiac 20th and K. P. Tola, the 36 lb. daughter of King of the Pontiacs.

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A SON OF KING KORNDYKE PONTIAC 20TH, with an average of 808.27 lbs. butter and 19,318.5 lbs. milk in one year for six of his seven nearest dams.

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When Writing Advertisers Mention California Cultivator.

Blood Weighs

By Howard W. Vaughn

A SHORT time ago the local butcher of a certain California town visited Mountain View Ranch with a farmer friend who was in search of a bull calf. As the herd sire, not yet three years old, was being inspected the butcher was asked to guess his weight. With a confidence born of daily experience in estimating cattle weights he promptly answered, "1,800 pounds." The bull had been weighed over certified scales the week before when he tipped the beam at 2,060 pounds.

This particular butcher was probably an example of many country butchers in California who have developed the very unpopular but workable system of converting five cent cattle into 35 cent meat, and the majority of their stock in trade when on foot is blessed with but two dimensions, length and height. Of width or depth or thickness there is often no suggestion. When the actual weight of our herd bull was announced to the visiting gentleman he spent some minutes fore and aft and meekly replied: "I had not noticed the width of the bull. He is deeper, too, than I had thought. We are not accustomed to seeing such cattle."

I am not surprised that the man missed the weight of the bull. The cattle in which he deals have been developed by the use of generations of inferior grade bulls. What wonder that he failed to note the difference when shown a beast whose ancestors for 20 generations or more have been selected by the best farmers of Scotland and America in an effort to produce the greatest quantity of high quality beef at the earliest age. The one type, like a home in a cave, just happened. The other, as much different as a millionaire's residence, represents the life work of the world's best livestock architects.

The cattle produced in California and intended to be sold for beef represent an extreme range in type. Watch the cattle as you ride along the road. There are herds where length of legs and horns and the "coat of many colors" indicate a mixture of breeding with no thought on the part of the owner to improve the type. "Any old bull" has been good enough on this ranch. But there are other herds to be seen where wide backs, deep bodies, short legs and short, graceful horns indicate the presence on that ranch of a man who thinks and cares—someone who buys a good bull and then takes care of him. To such a farmer I always count it an honor to sell a bull, for I am convinced that the requirement of the sale was the merit of the beast. Such men always buy pure bred bulls. There are many such herds in this state. These herds, together with the example of the state college in raising and exhibiting steers that became nationally famous as exponents of the most highly developed beef type should be practical evidence enough, first, that there is a distinct type to which the best beef cattle conform and second, that cattle of this type have been and can be raised successfully in this state, and if you ask the owners of the best herds you will be told that no other type will prove as profitable.

There is something in the pure bred animal that gives him the ability to transmit his type to his offspring. We call it prepotency. The sire which lacks prepotency is of but little value. Occasionally we may get desirable offspring from heterogeneous matings, but we must have something more than the occasional production of a good calf. Within reasonable bounds, our sire must be a sure and true breeder. The real farmer is content with nothing less.

The prepotency of a sire depends largely on the concentration of his blood. The skilled stock breeder often resorts to policies of line breeding or even inbreeding in order to produce the truest types. By so doing, he puts into one animal an extraordinary power to reproduce its own characteristics. We cannot all use these methods with safety, but we can follow their principle in the use of breeding animals whose pedigrees are filled with sires and dams of special merit and in which there are no violent outcrosses.

There is nothing which lowers the standard of livestock so much as the indiscriminate intermixing of breeds. We may get discouraged if marked improvement does not occur in our herd. We conclude that we are using sires of the wrong breed. We buy a sire of an entirely different breed. If it is a cross of two beef breeds the first cross may prove attractive, but subsequent generations betray the mixture of blood. The best of individual sires are then unable, without successive generations of use, to bring back the original state of perfection.

The immediate parents influence their offspring to the extent of 50 per cent, grandparents 25 per cent, great grandparents 12½ per cent, etc. It is because of this that the more we use of good pure bred sires the less improvement we note from one generation to the next. A pure bred sire has a marked influence on a mixed grade dam, but on a seven-eighths pure bred dam of his own breed his influence is not so evident. This does not mean that there is a lack of improvement. On the contrary, every pure bred cross adds that much more purity to the blood and insures a truer prepotency.

To grade up a herd, to gain more of the "blood that weighs" is not an expensive process. The purchase of many high priced females is not essential. Use care in the selection of the bull—that he be of right type himself and that he be from good ancestry. This is imperative. Blood weighs. As long as we sell cattle by weight at a price determined by their quality the best beast is found to be the most profitable.

W. TERKELSEN OF HUMBOLDT COUNTY WINS CULTIVATOR PRIZE FOR JULY

By F. W. WOLL

Five cows owned by W. Terkelsen of Ferndale, Humboldt County, had the highest average production of butter fat for five grades in the state dairy cow competition during the month of July, viz., 66.16 pounds butter fat, and the California Cultivator prize for that month was accordingly awarded to him. The production of the individual grades for the month was as follows:

	Days in Milk.	Milk Lbs.	Butter Fat Pct.	Butter Fat Lbs.
Dinah	42	1451	5.3	76.90
Christina	101	1293	5.1	65.94
Amy	113	989	6.5	64.29
Laura	111	1283	4.9	62.89
Annie	113	1085	5.6	60.76
	96	1220	5.42	66.16

These cows are all grade Jerseys, and all but two are mature animals. They stood first among similar groups of grades in twenty-three dairy herds in different parts of the state that competed for the Cultivator prize the past month. The average production of butter fat of all but seven of these groups came above 50 pounds. The lowest-producing grades averaged 19.96 pounds.

Five grades owned by the following dairy farmers produced an average of over 50 pounds of fat during the month, viz: W. Terkelsen, 66.16 lbs.; M. Pontoni, Arcata, 64.18 lbs.; J. A. Genzoli, Loleta, 63.45 lbs.; W. F. Early, Grizzly Bluff, 60.82 lbs.; E. Graham, Compton, 59.97 lbs.; N. Hauck, Alton, 58.58 lbs.; P. Iversen, Grizzly Bluff, 55.96 lbs.; Arden Certified Dairy, El Monte, 52.44 lbs.; Adohr Stock Farms, Van Nuys, 50.95 lbs.; H. L. Wakeham, Santa Ana, 50.53 lbs.; Giacomini & Pedrotti, Waddington, 50.56 lbs.; F. F. Pellissier, Whittier, 50.03 lbs.

This is the fourth time in succession that the Cultivator prize has been won by a Humboldt County farmer. Judging from the line-up during the last few months, it is likely to continue to go to this county for some months to come. The records of production during the past month by the prize winning grades, as well as by most of the cows entered in the state dairy cow competition, are lower than during the preceding months, owing to the advance in the lactation period

of cows and, in most cases, to less favorable feed conditions during the month. Still, these grades averaged an equivalent of over 2½ pounds commercial butter per head daily for the month, and all the cows in the competition averaged nearly 2 pounds of butter a day, which is an improvement of about 100 per cent over the production of ordinary "good" dairy cows.

FEEDING MILK GOATS

By G. E. Gordon

There seems to be a popular opinion that goats will do well on almost any kind of feed, but this is entirely erroneous. There are several principles to consider in making up a ration. In the first place it must be fairly bulky, at least bulky enough to satisfy and aid digestion. It must be palatable, that is, it must be made up of feed that the goat likes in order that the goat will eat a sufficient quantity to enable it to produce milk in quantity. It must be succulent. The natural feed for animals is the succulent grass and this must be as nearly replaced as possible. If some form of green feed is not available silage is good but can only be used where a reasonably large quantity is necessary, as it spoils readily when exposed to the air. Beet pulp fills in quite satisfactorily to replace succulent feed. Pumpkins, beets and mangels can be used in reasonable quantity. The ration must be balanced, that is, it must supply the proper nutrients and the proteins must be properly balanced against the carbohydrates and fats. The ration must be economical and should contain as large a quantity of home grown feeds as possible. Roughage feeds can best be fed in the rack in the corral. Concentrates can be fed to good advantage while the animal is being milked, as the animal then is in a mood to let her milk down readily when she can be milked more easily. The advantage of root crops can hardly be overemphasized. They provide succulence and in addition the dry matter contained in roots is about equal to the dry matter contained in grain. Some succulent feed, such as silage or roots or, if these are not obtainable, beet pulp makes a good substitute, and these should be fed with the more concentrated feeds and will tend to lighten the concentrates. Mix them up with these other feeds so that in the process of digestion more can be gotten from the concentrates. Alfalfa hay is a standard roughage feed. Sudan grass and grain hay can be fed to good advantage in smaller quantities. Barley is a standard grain and this can be mixed with other concentrates. Some of the feeds commonly used and which give good results are linseed oil meal, cottonseed meal, coconut meal, bran, middlings, corn. It is well to have as much variety as possible in the ration. Only very small amounts of linseed or cottonseed should be fed. A slightly greater amount of coconut meal can be fed than either of the above mentioned, while bran or middlings can be fed in larger quantities, as can barley. A reasonably good mixture can be made up of 1 part cottonseed meal, 2 parts coconut meal, 2 or 3 parts bran or middlings, and 2 parts barley, together with about 4 parts of beet pulp. The proportion of these feeds will depend somewhat on the amount of alfalfa hay or Sudan grass or silage that can be fed.

If the above mentioned rules are followed, good results will be obtained.

Milk Fever

By G. E. Gordon

MILK fever, or parturient paresis, is one of the common difficulties confronting dairymen. Unfortunately, this trouble is confined almost entirely to the best cows. This is a paralysis in cows just before or just after calving. It is most found in cows at third, fourth or fifth calving periods and usually follows calving. A symptom of milk fever is a staring eye. The animals show weakness, especially behind, and walk unsteadily, if they are able to stand at all. They have an excited appearance and continue to be excited after they are down. They may try to get up but in most cases are unable to do so. After the trouble is farther advanced they are in a sort of coma, or sleep, and usually lie out flat with head on the ground or with the neck cramped somewhat. In this stage they are usually motionless, and sometimes appear to be about dead. The eyes may be set and glazed if they are open. At a later stage the cow may go into convulsions. In this event the animal may raise up on her stern and then fall back and strike her head on the ground. This often causes bruising about the head. Following this the eyes are usually very dry and glassy. There is no high temperature with this trouble; in fact, the temperature is below normal.

There are several complications that may set in following milk fever. It is dangerous to attempt to administer any medicine in a case of milk fever, as the animal cannot be satisfactorily drenched because she is paralyzed and unconscious and the material given may go into the lungs and cause foreign body pneumonia. There have been very rare cases of cows having milk fever some time after calving, but this is quite unusual. This trouble also usually occurs with very high producing cows and especially when they are in good flesh.

It is sometimes difficult to prevent milk fever, but from the fact that it occurs with cows that are in good flesh it is sometimes desirable to put them on a diet for ten days or two weeks before calving and feed very carefully during this time. It is also sometimes desirable to administer a dose of Glauber salts a few days before calving which should be followed by laxative feeds. The condition of milk fever is probably due to the absorption of some product from the udder which is probably protein or proteic acid.

The best known treatment is inflation of the udder with air, forcing the milk from the absorbing tissues, allowing the animal to recover. This should be very carefully done, and if the dairyman is not fully conversant with this method it is best to call in a veterinarian. An outfit for the treatment of milk fever, however, should be kept at every dairy. In administering treatment the following recommendations should be observed:

First, place the udder on clean straw. Wash udder and teats with soap and water. Disinfect udder and teats and particularly the end of the teat with a two per cent solution of lysol or some other similar disinfectant.

Next, place a clean towel under udder and teats. Remove milk from udder. Udder is then ready to have the teat tube inserted.

The instruments should be sterilized during the primary operation. The teat tube should be boiled for five minutes and the tube with cotton in it should be heated in an oven for 20 minutes in order to make sure that it is sterile. The apparatus can then be connected and the teat tube inserted.

The air is then pumped into the udder through the tube containing the sterile cotton until the udder is completely distended. After the air is pumped in a strip of cloth a half inch or inch wide should be tied around the teat to hold the air in for up to three hours.

If the animal has not fully recovered within three hours, the air should be allowed to escape, the milk again be removed and the operation repeated. Usually, however, the animal will be fully recovered before the three hours are up.

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ONE WOMAN POULTRY PLANT

(Continued from Page 248.)

Lights for Eggs

The flock is not culled for early molting because experience has shown that the use of lights in winter is apt to bring on an earlier summer molt. Beginning the middle of November, lights are turned on in the morning 15 minutes before sunrise, and this time is increased by the use of an automatic clock, 15 minutes a week till by the middle of December the lights are on a full hour before sunrise and by the middle of January they are on at 3:30. From now on the time is gradually diminished till the middle of March, when the hens are again getting off the roost by daylight. When the change is made so gradually the hens quickly become accustomed to getting up by candle light, and by December the majority of the flock are already off the roosts when the lights come on. Breeders are kept in houses without lights.

Mash for Eggs

A commercial mash is always before the flock, and the proportion of scratch grain to mash is smaller than in many flocks. On the advice of the poultry division of the college of agriculture Mrs. Wise feeds from seven to eight pounds of grain, according to season, daily to 100 hens. This small grain ration compels them to eat more mash, and a better egg yield without any falling off in health is the result. Wheat, hulled barley and corn are the grains used, cracked corn being fed to the young stock and whole to the older hens. All grain is fed in six to eight inches of litter, and the hens are compelled to scratch for every morsel. The kale and alfalfa which are used for greens are fed without cutting, so that all uneaten stems may be added to the litter. Greens are fed always in the morning, and again at night if the caretaker is not too busy.

Mrs. Wise finds men's clothing absolutely indispensable in caring for her large flock. "I tried short skirts first, and then the overalls that are made for women," she said, "but I found there was always some loose corner to catch on nails or wire, and I hadn't time to be always pulling myself loose. I simply could not do the work I do in any other attire."

Poultry Queries

(Conducted by Jean A. Koethen.)

Sour Milk for Hens

Many poultry raisers advise sour milk instead of beef scrap for laying hens. I feed mine all the milk they will consume but do not get the results I got from beef scrap. Please tell me the best ration of other feed to use with sour milk and the amount by weight for 100 laying hens daily. —Subscriber, Napa.

I know the poultry division of the state college of agriculture and other authorities say you can omit beef scrap if your hens have all the milk they can consume, but I do not know of a single poultryman who trusts to milk alone. I met a man last week who was buying buttermilk at 5 cents a gallon for his young stock, and could no doubt have fed it to his layers if he had wished, but he was giving them a commercial egg mash and no buttermilk at all. It is a common practice to keep a dry mash—generally one of the commercial mashes—before the hens constantly, and, if sour milk is available or semi-solid buttermilk is not considered too expensive, to moisten the mash with it once a day and feed what the bird will clean up quickly as an appetizer. Theoretically sour milk is a splendid egg feed; in practice it seems difficult to make the hens consume a sufficient amount to take the place of meat. If you must use it instead of meat, try keeping it before the hens all day in pans and in addition feed a mash moistened with it about 2 o'clock. Keep a dry mash before them also. The formula used at the California farm bureau egg laying contest is probably as good as any. You could omit the 60 pounds beef scrap and 60 pounds fish meal, and make the mash 240 pounds bran, 180 pounds ground oats, 180 pounds middlings, 80 pounds soy bean meal, 30 pounds charcoal and four pounds salt. The scratch mixture used with this mash consists of equal parts by weight of wheat, cracked corn, milo maize and whole barley, fed at night in litter, 10 to 12 pounds daily per hundred hens.

Sick Ducks

Kindly advise me of the probable trouble with White Pekin ducks that seem unable to stand on their feet. Their eyes swell and discharge pus, but they are otherwise strong enough to eat heartily.—Subscriber, Los Angeles.

The ducks are taking cold, possibly from damp sleeping quarters. The

weakness in their legs may be rheumatic, and from the same cause, or it may be because they are in such close confinement that their bodies have grown more rapidly than their leg muscles have developed. The cure in either case is to remedy conditions.

Mating Ducks

How many drakes should I have for six ducks?—Subscriber, Nipomo.

One drake for four or five ducks is the rule followed by duck men. Possibly one to six will be sufficient. You can tell by trying. The age and vigor of the birds are to be considered. Drakes a little older than their mates are preferred.

Hatching Duck Eggs

Can you give me some information about hatching duck eggs by incubator?—Subscriber, Compton.

Duck eggs require 28 days to hatch and are readily hatched in any good standard incubator. The heat should be run at 102 degrees for two weeks and then kept steadily at 103 degrees. The eggs require more airing than hen's eggs and should be sprinkled every other day after the first week. Sprinkle while they are out of the incubator with water about the same temperature as the eggs. On the 26th day eggs and trays should be made quite wet with moderately warm water and the machine closed to remain so till the hatch is over. If your machine is of a type in which special provision is made for moisture you may not need to sprinkle. It is best to follow the directions which come with the machine. Duck eggs should be tested out after 70 hours of incubation when the clear eggs are still marketable, again on the tenth or twelfth and again the twenty-fourth day.

Electric Hatching

Where can I obtain an electric incubator? I wish to hatch by electricity because I believe it is less troublesome and more efficient.—Subscriber, Compton.

I am mailing you names of dealers who sell electric incubators. Electricity is less trouble than kerosene and there is less danger of fire, but you may find it more expensive. It is undoubtedly efficient, and some of the biggest hatcheries are being equipped with electric apparatus.

Feeding Pullets

When should I start feeding wet mash to pullets, and when should a laying mash be given? — Subscriber, Calpella.

It is not necessary to feed a wet mash at all, but many poultrymen do add a daily meal of mash moistened with sour milk to the regular ration of dry mash and scratch feed during the fall and winter months when the pullets are laying their heaviest. The best feeders give growing mash till the pullets are nearly ready to lay, then, when combs are reddening and an egg or two is found in the nests, change to a conditioning mash containing less beef scrap and more corn meal. This is used to delay production a little and keep the pullets from laying a clutch of little eggs and then going into the molt. When the pullets are from five to six months old and can no longer be held back from production the laying mash is placed before them. A good many successful poultrymen omit the conditioning mash and give pullets the laying mash at from three to four months of age.

Another Turkey Ration

A Vacaville subscriber who has had a good deal of experience with turkeys writes that she gets the best results when she feeds the following mash twice a week:

To a pint of bran and a pint of bread crumbs add enough boiling water to make a crumbly mash. Let this cool till it is only slightly warm and add 1 quart chopped greens (lettuce, kale, tender grass or alfalfa), 1 small chopped onion or onion tops, and 1 cup chick grit or sand. For each 10 turkeys to be fed add 3 drops turpentine and ¼ teaspoon ginger. This is fed twice a week in place of the regular mash and twice a day for three days if white spots on the back of the legs (a diarrhoea symptom) are noticed. The regular mash, which is fed in the morning until the poults are three months old, consists of 1 medium sized onion chopped fine and added to 1 quart chopped greens, 1 pint bran and 1 pint hulled barley or oats. This is made into a crumbly mash with sour milk, and ½ cup of chick grit added. The grain mixture contains 2 parts whole barley or oats and 1 part wheat. In starting the poults chick feed alone is used from the time they are 60 hours old till the end of the first week. Then wheat and barley are gradually added and amount of chick feed diminished till the birds are on wheat and barley alone. Mash feeding begins at the end of the first week and the ginger and turpentine mash is given in its place two mornings in the week. Baking soda is given in the drinking water twice a week, ¼ teaspoon soda to 1 pint water. If sour milk is used at first for moistening the mash sour milk must be used thereafter. Sweet milk is just as good, but there must be no change. The mash containing turpentine and ginger is believed to prevent diarrhoea.

INTERNATIONAL COOPERATION

The coming World's Poultry Congress, which is to be held at The Hague, Holland, September 5 to 10, by the International Association of Poultry Instructors and Investigators, will bring together poultry experts from all over the world, and it shows the growth of the cooperative idea in this industry.

California is to be represented by Dr. J. R. Beach of the University of California, who is to attend the conference in order to secure the latest information relative to means and methods of combating poultry pests and diseases. This has been made possible by the raising of a special fund of $1,000 for this purpose by Poultry Producers of Central California, Inc., Poultry Producers of San Diego, Inc., Hayward Poultry Producers Association, Poultry Keepers Association of Petaluma and the Poultry Producers of Southern California, Inc., Dr. C. M. Haring, head of the University of California experiment station. J. H. Barber, manager of Poultry Producers of Central California, Inc., who is now on his way to London to make a survey of the British egg market in the interests of his association, will also attend the World's Poultry Congress as a representative of the San Francisco organization.

ATTRACTIVE PREMIUM LIST FROM SOUTHERN CALIFORNIA FAIR

The premium list is out for the Southern California Fair which will be held at Riverside, October 11 to 16. This will be the ninth annual session of the fair and each year has worked a steady and consistent growth and development. This year the premiums in practically every department show marked increase over last year and in the important agricultural and livestock departments they rank with those of the state fair. An interesting feature is the special attention given to the boys' and girls' clubs and all forms of junior agricultural work. There has been great activity in the junior club work this year and it is estimated that 50 to 60 clubs from all parts of Southern California will contest for premiums at Riverside.

The livestock judging clubs from high school agricultural departments from all parts of the state will be judged at Riverside by a committee of judges selected by the state university. It is planned to send the winners in the contest to the National Livestock Exposition.

CALIFORNIA EFFICIENCY

(Continued from Cover Page)

the first paragraph above. In homes equipped with electric lights or gas there are three states which lead in actual numbers. These are in the natural gas sections and are Ohio, Iowa and Pennsylvania. California comes fourth with 30,519. New York, Illinois and Indiana follow with six to ten thousand fewer homes so equipped. We wish the census bureau had given us information as to homes equipped with electric lights only.

OUTWEIGH SCRUBS

"My steers as yearlings go over the scales at from 1,200 to 1,225. The ordinary scrub steers go out of here as three year olds weighing from eight to nine hundred." With this comment in a letter to the United States department of agriculture, a stockman in Elko County, Nevada, points out the benefits which he has derived from the use of pure bred sires.

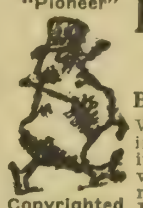
"In my opinion," he adds, "even in this country everyone should breed some pure bred strain. Nevertheless the scrub bull dominates even in the face of facts and figures. The average ranchman does not take into consideration that it costs no more to produce a good animal than it does to produce a scrub, and the pure bred is cheaper in the long run."

FAT HOG AUCTION DATES

The California Farm Bureau Marketing Association announces hog auction dates: Wasco, September 3; Modesto, 6; Tegner, 7; Chowchilla, 8; Fresno, 9.

San Fernando Valley Fair people are making final arrangements for the great tents and some of the special features to be noted at the fair which will be held September 19-24. Superintendent O'Neil of the tractor, implement and farm power section, is making final arrangements for the great combined demonstration and "still" exhibit of tractors and implements, and that stock judging arena, the largest ever, is made necessary because of the great number of livestock entries.

"Pioneer"



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American Poultry Association Show

This will be the only official American Poultry Association Show held in Southern California this year and on this account it is attracting poultry breeders from all parts of the state.

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Merry-Go-Round, Ferris Wheel, Side Shows, Chance Games, a wonderful Band and a Dance Pavilion with dances held each evening by the Inter-Post of the Valley Posts of the American Legion.

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Address all communications to E. R. Elkins, Fair Director, Chamber of Commerce Bldg., San Fernando, Calif.

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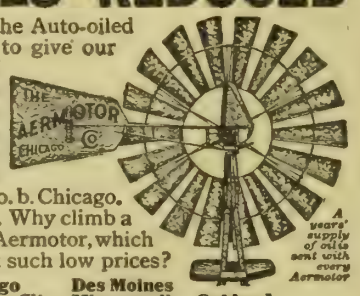

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A One-Woman Poultry Plant

By Jean A. Koethen

THE question, "Can a woman succeed in commercial poultry keeping?" has been answered more than once in these columns and always in the affirmative. A woman may lack the muscle of her husband or brother, but she is usually able to make her head save her heels, and if she likes chickens well enough to undertake their care on a large scale her sympathetic understanding of the temperamental biddy and her instinct for handling baby chicks more than make up for any lack of physical strength. Mrs. Rose Marie Wise, a clever little Alhambra woman, had always loved chickens, long before she ever thought of keeping more than a back yard dozen or two, and when she ventured into intensive poultry keeping as an outlet for her superabundant energy it was because her love for good fowls led her on. While I talked with Mrs. Wise in a corner of one of her 500-hen units a vivacious White Leghorn hen stood on a box beside us, entering into the conversation whenever there was a second's pause, and assuring me the little lady's love for her snow white pets was reciprocal.

"I can drive a nail with the best of them," declared the little lady, drawing her trousered figure to its full height. "This is a one-woman venture, and there is no place on my program for expensive hired help. Just now for the first time I have hired a boy to clean houses and carry feed. I cared for 2,000 hens by myself, but now I have 3,000 layers and pullets nearly ready to lay I find I must have a little help in the heaviest work."

Last spring Mrs. Wise brooded 3,000 chicks and raised 1,100 pullets, and this fall she plans to brood another 2,000 chicks and bring her flock up to 4,000 by next spring.

An Early Lunch

Mrs. Wise feeding one unit of her 3000 hen flock. The circular spots overhead are burlap sacks laid on the wire to give shade.

It was just two years ago, in August, 1919, that Mr. and Mrs. Wise, with 500 pullets of Mrs. Wise's own raising, moved from Los Angeles to their two acre ranch in Alhambra. These 500 pullets had been raised in a back yard and were the net result of a thousand chicks hatched and brooded the previous spring. As Mr. Wise has his own business in the city it was distinctly understood between them from the first that the chicken business was hers, not his, and must support itself. Mr. Wise agreed to do the carpenter work and give whatever help could be given out of business hours, but the business must stand on its own bottom, and it has done this from the first.

That year egg prices as well as feed prices were at the peak, and the 500 pullets did so well that Mrs. Wise felt justified in increasing her flock. In the spring of 1920 she brooded 5,000 chicks, besides caring for her 500 layers and helping Mr. Wise build the new houses, which were called for more rapidly than he could find time to finish them.

Culling the Young Stock

The chicks are culled with the greatest severity from the day they are hatched. No cripples are allowed to reach the brooder, and on the second day every unthrifty chick is killed. From the second day till the end of the eighth week every chick that lags behind the others for any reason whatever is promptly removed from the flock. After eight weeks, when cockerels and pullets are separated, every scrubby or backward bird is removed to a separate pen. These culls are fed up for a week or so, then either given away or sold for a song to people who like a few hens in the back yard and are not particular about vigor or high production. For the commercial plant Mrs. Wise believes only the very choicest stock is good enough, and only the birds which show every sign of vigor and have never lagged for a moment are allowed to remain. The pullets are culled again when they go into the laying house, and the flock that begins laying in September is as perfect as care and culling can make it.

(Continued on Page 246)

POULTRYMAN'S CALENDAR—SEPTEMBER, THE CULLING MONTH

While it is true that in a sense every month is a culling month, and while the use of lights during the long winter nights often causes a molt at the wrong time, nevertheless, September may be called the culling month. Now is the time to cull by color, separating the birds with yellow shanks and bright, glossy plumage from the ragged, faded layers which have not yet finished the year's work. The bird with shrunken comb and dull eyes may safely be removed from the flock, and those which show by their bright color that they have finished molting can be put in the doubtful pen and tested out.

September is also an excellent month for hatching if the spring hatch has been short or if market birds are desired. Reds, Rocks or Wyandottes hatched in September make wonderful growth and are ready for frying by Christmas or for roasting by February when they bring the year's best prices. They may be raised in fireless brooders or by hens, 25 chicks to a hen, and are raised with less effort than at any other season.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Moldy Hay

I ordered baled hay guaranteed to be first-class. Upon opening several bales I found that it was wet and blue with mold. The outside of the bales had dried so that there was no indication of the interior condition. I refused to accept the hay and have notified the seller to remove it but he has paid no attention. I again notified him, saying that I would have it hauled to the warehouse. Could he require the warehouse people to deliver the hay without paying charges? Could I collect storage for the time it has been in the barn? Are my proceedings lawful?—Subscriber, Hemet.

Even without the warranty that the hay was first-class the law requires a warranty in the case of provisions that the seller by the sale warrants that they are sound and wholesome. The buyer at all times has a right to inspect a thing sold and may rescind the contract for breach of warranty. By rescinding the contract the situation is as though no contract had been made. In an instance such as this where the property has been delivered the prospective purchaser would become a depositary and liable only for his negligence concerning such property. A depositor, that is to say, the seller of the hay, would be required to pay to you all expenses incurred, such as reasonable value of the storage in your place. If the hay comes in actual danger of perishing you may sell it for the best price obtainable and keep the proceeds in lieu of the deposit. Upon your giving reasonable notice to the owner to remove the hay and the owner failing to do so within a reasonable time you are entitled to sell the hay in order to satisfy your lien for storage. It will be unnecessary for you to haul the hay to a warehouse for storage, as in such instance as above it would doubtless be that the hay would not be worth the price.

Subdividing Property

If I subdivide a tract of land and cause streets to be graded and dedicated to the county, can I charge the purchaser for land to the centers of the road?—Subscriber, Walnut.

If the streets are in fact deeded to the county they cease to be the property of the owner. The usual method in such instances is, however, merely to grant a right of way. In such instance the original owner owns to the center of the street. However, when a person sells property he may, of course, put any price on the property he may see fit and can induce the purchaser to pay.

Water Company

I bought property, including water shares in a certain well. After the purchase a mutual water company notified me to pay charges. The lot had a two-inch outlet. Now the water company requires me to reduce it to a one-inch outlet. Can this be done? The agreement of sale provides that the source of water supply is a certain well located on a specified lot in the tract, to which the lot sold to me is entitled to one share, which share shall perpetually be appurtenant and shall remain as a part of the land when sold.—Subscriber, El Monte.

As regards the rights of the water company, it would seem that there necessarily would be a monthly charge for the upkeep of the water plant, which would be equitably divided among the parties obtaining water. You should know that it invariably costs something to operate a water plant, and no seller could reasonably sell and give water forever free of charge. As to the change of outlet, that would seem to be a different matter, but an examination would necessarily have to be made of the by-laws of the company in order to ascertain if there is any right to make this reduction. It may possibly be, upon examination of the whole transaction, that you have a right to rescind the contract of purchase.

Loses Citizenship

When an American woman marries a foreigner does she give up her citizenship?—Subscriber, Lodi.

Congress has enacted a statute which provides specifically that any American woman who marries a foreigner shall take the citizenship of her husband. At the termination of the marital bonds she may resume her citizenship. If abroad, she may resume her citizenship within one year by filing declaration to that effect with a consul of the United States or by returning to reside in the United States, or if residing in the United States at the termination of marital relation, by continuing to reside therein. This act has been held to be constitutional and a valid enactment by the supreme court.

PACIFIC COAST NURSERYMEN ELECT

At the Nineteenth Annual Convention of the Pacific Coast Association of Nurserymen held at Seattle these officers were selected:

President, Henry Evarts Weed, Beanerton, Oregon; vice presidents, F. W. May, Yakima, Washington; C. D. Hobbs, Milton, Oregon; Carl E. Wright, Kimberly, Idaho; A. W. Wagner, Pasadena; Frank Walton, Salt Lake City, Utah, and Richard Layritz, Victoria, B. C.; trustees, J. J. Brownell, Seattle, Washington; S. A. Miller, Milton, Oregon, and F. A. Wiggins, Yakima, Washington; executive secretary, C. A. Tonneson, Burton, Washington.

OREGON PRUNE PRICES

Opening prune prices of the Oregon Growers' Co-Operative Association for the 1921 prune crop, bulk basis, were announced last week at 10¾c for 30-40, 9¼c for 40-50 and 7¼c for 50-60, and 6¼c for 60-70.

The prices average about 5 cents lower than the opening quotations of last year. The association estimates the Northwestern crop at 22,000,000 pounds this year.

FESTIVAL OF DATES

J. Win. Wilson of the Coachella Valley is appealing for help in making known to the world the greatness of the date industry. To that end the people of the valley have staged a festival of dates to be held in the Coachella Valley, where dates grow, October 21-23.

A date growers' institute will be in daily session, cultural and harvesting questions will be discussed, and there will be opportunity to get complete information regarding the date industry in America. It is expected that 18 or 20 experts of the department of agriculture will be in attendance.

Southern Manitoba, in common with North Dakota, has suffered from extreme heat coupled with unusually dry weather in July. As one proceeds northward conditions improve, but entire southern section from Red River to western boundary, except some fortunate localities, must be satisfied with light wheat crop average, about ten bushels. Wheat cutting practically complete, threshing general. Support is lent to theory that corn belt is moving northward by many excellent fields of corn, and silos are making their appearance in what was once exclusively wheat country. Hay crops and rye good.

Tulare County's horticultural commission is keeping up its fight on squirrels.

FROM A KODAK NEGATIVE

They are *your* Pictures

It is when the picture shows something that *you* are interested in, that *to you*, it becomes worth while. You do not, perhaps, care anything about taking pictures (though many people think it great fun) but the pictures themselves you do care for when they are of people or places or things that are yours or that you are interested in.

There's a personal, human touch in pictures of your home, your children, your broad meadows and your fine cattle. There's interest to you in pictures that tell the story of your auto trip, your camping party or of the picnic where your children had so good a time.

It is because such pictures have the personal appeal that, in millions of homes, the snap-shot album has become the most thought of book in all the house.

Picture taking is very simple with a Kodak or Brownie, and less expensive than you think.

Ask your dealer or write us for the 1921 catalogue of Kodaks and Brownies. It's free.

Eastman Kodak Company Rochester, N. Y., *The Kodak City.*

Los Angeles Markets

Los Angeles, August 31, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price 49 cents.

Prices Creamery Extras last week:

Aug.	24	25	26	27	29	30
'21 ...	40	49	49	49	49	49

CHEESE

Brokers' prices:
California flats, 18@20.

EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 41; case count, 40; pullets, 35; pewee pullets, 24.

Extras last week and year ago:

Aug.	24	25	26	27	29	30
'21 ...	41	41	41	41	41	41

POULTRY

Price to producers: Hens, 22@30; colored, 33; broilers, 33; roasters, 32; old roosters, 18; fryers, 29; ducks, old, 12; ducklings, Pekin, 3½ up, 25; others, 25; geese, 25; turkeys, live, young tom, 50; dr., 55; old, live, 40; dr., 41; hens, live 40; dr., 44; squabs, 45@47.

Belgian hares, live, 11@14; old 8.

LIVESTOCK

Los Angeles, Aug. 30. — Weighed and delivered off cars without food or water:

Hogs (hard grain fed), 125 to 175 lbs., 11.25; 175 to 225 lbs., 12.00.

Cattle (on foot, gross weight): Steers, good, 6.50; medium, 6.00; cows, good, 5.00; medium, 4.50; bulls and stags, 2.00; calves, 125 to 150 lbs., 7.00; 175 to 225 lbs., 6.00.

Sheep: Ewes, 3.50@4.00; lambs, 8.50@9.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock August 30, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies heavy. Demand and movement light, market weak. New stock, mostly 85@1.00 per lug; White Rose, No. 1, sacked, per cwt., mostly 2.00@2.25. Stocktons: Burbanks, fancy, mostly 2.40@2.50; few 2.60; choice, 2.00@2.25. Sweet potatoes: Supplies light, movement slow, market weaker. Locals, No. 1, 1.25@1.50 per lug; No. 2, 50@75; No. 1, 4@5 lb.

Onions: Supplies liberal, movement slow, market steady. Stocktons: White Globes, sacked per cwt. mostly 2.75@3.00, Yellows, 2.50 cwt. Old stock: Browns 1.25. Locals: Browns 75@85, Whites 90@95 per lug.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock August 30, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Supplies light. Demand moderate, market seady. Per lb.: Kentucky Wonders mostly 4@5 per lb.; Green pods mostly 4. Limas: Supplies light, movement moderate, market steady, mostly 6; few 4.

Beets: Supplies moderate, market steady. Per dozen bunches mostly 35@40.

Cabbage: Supplies increasing. Market weaker. Per field crate 2.00@2.25.

Carrots: Supplies moderate, market steady, per dozen bunches mostly 35@40.

Celery: Supplies light, movement slow, market steady, per crate 5.50@6.00.

Corn: Supplies liberal, movement moderate, market weaker. Local: Per lug, wide range in price, 60@65; poorer, 50; few fy., 85.

Cucumbers: Supplies liberal, movement slow, market steady. Locals: Lugs mostly 35@40; pickles, 1.00@1.75 lug.

Eggplant: Supplies liberal, demand moderate, lb., 3@4.

Lettuce: Supplies light, market firm. Local: Field crates mostly 1.00@1.10, poorer 75@85 per crate; fancy 1.25.

Okra: Supplies light, market steady, large 7@10 per lb., fancy, small 12@14.

Peppers: Supplies heavy, market steady. Locals: Bells mostly 50@60 lug; poorer 40; mostly 3@4 per lb.

Radishes: Supplies light, market firm, mostly 20 per dozen bunches.

Squash: Supplies light, market steady. Summer mostly 50 per lug.

Tomatoes: Supplies moderate. Demand and movement slow, market steady. Locals: No. 1, per lug, mostly 60@75; few best 90@1.00; No. 2, 40@50.

Turnips: Supply moderate. Market steady. Per dozen bunches 35@40.

FRESH FRUITS

Apples: Supplies heavy. Demand and movement very slow, market weak. New stock: Mostly 40@50 per lug, few best 60. Sebastopol section: B grade Gravensteins, medium to large sizes mostly 2.00@2.25, small sizes 1.65@1.75, fancy Gravensteins, small 1.75@2.00. Watsonville: Fancy 4-tier Bellefleurs 1.65@1.80, mostly 1.75.

Cantaloupes: Supplies heavy. Demand and movement good, market stronger. Homegrowns: Tiptops, per crate, 50@75, mostly 65@75; Paul Rose, 50@75. Casabas: Supplies liberal, movement slow, 1@1½ per lb., according to quality.

Figs: Supplies liberal. Market weak. Locals: Per box 1.00@1.50; poorer 50@75.

Grapes: Supplies liberal, movement slow, market weak. Wide range in quality. Thompson Seedless 3@4; Muscats 4@5; black varieties, 5; fancy Hamburg, 5½@6; Tokay, 9@10.

Peaches: Supplies heavy. Demand moderate, market firm. Freestones mostly 90@1.10, few fancy 1.25@1.50, poorer 60@75, Clings 90@1.00, few best 1.10@1.25; poorer 50@60.

Pears: Demand and movement good, market firm, Bartletts mostly 5; few fancy 6; poorer 3@4 per lb.

Plums: Supplies light, market dull. Satsuma plums 4@5 lb.; Kelsey, 4@5; prunes, various varieties 3@5.

Quinces: Lug, 1.00@1.35.

Watermelons: Supplies very heavy. Demand slow, market weaker. Locals: Klondikes mostly 1 per lb., few 1¼; poorer ½@¾ per lb.

CITRUS FRUITS

Grapefruit: Supplies liberal, movement moderate, market firm. Local: Per box, market pack, 2.00@3.00, mostly 2.50@3.00.

Lemons: Supplies liberal. Demand moderate, market weaker. Local: Market pack mostly 3.00@3.50; loose box mostly 2.00@2.50; poorer, 1.50; lug 65@75.

Oranges: Supplies moderate. Demand moderate, market firm. Market pack 3.00@3.50, small sizes 2.25@2.75, loose pack 1.00@1.50, mostly 1.00@1.25.

GRAIN AND FEEDS

Grain Exch. price bid August 30:
Barley: 100 ton lots, 1.65.

HAY

Alfalfa Growers of California report:

Movement very light. Demand slow but steady and prices show hardening tendency.

Present prices are still so very unsatisfactory to growers that all those who are able to hold back are doing so, and the others do not market more than absolute necessity compels. Heavy production is about over; ordinarily this is also the period of stocking up by users and dealers, but this year very little of this has been done. This puts on the growers the burden of carrying their hay until it is needed for consumption, a task so far beyond their financial strength that it brought about the present ruinously low prices.

The situation is a good deal the same as prevails in other principal farm products, and to relieve this situation congress has now given to the war finance corporation authority to give to farming interests credits up to a total of a billion dollars for the moving of the crops. While these credits are for the present to be used only for the purpose of facilitating exports and therefore are not available to us, prospects are very favorable for prompt credit assistance also being extended to us through other channels.

Growers are paying power companies as high as $2.50 an acre for a single irrigation in many localities in the San Joaquin, an excess rate at the very time they are in the most unfavorable position for meeting it, and if they cannot meet it promptly, and the power is shut off, they loose the benefit of the later much lower rate and, of course, they also lose the later cuttings.

We have taken this matter up with the heads of one of the big power companies who explained that they are compelled to make the graduated charge as they would lose money if the charge to the growers of grain, etc., who use the power only for one or two irrigations in the early part of the season, were made at the same average rate as to the customers who use the power all through the irrigation season.

It would seem to us that this rate schedule could be changed so as to be more favorable to the alfalfa growers while at the same time protecting the interests of the power company, but for the time being we have to take the situation as it is. We therefore asked the companies to be more lenient with our members in enforcing the shutting off rules. They explained that their delinquencies are already increasing at a disquieting rate and would be bound to increase still more rapidly if they were to stop enforcing their rules with our growers generally. They are willing to consider individual applications for extension of payments, in special cases recommended by the association, with its assurance that the respective grower is able to and will soon pay the bill with the proceeds of his hay when sold. We have no doubt the power company will be as accommodating on this basis as it is possible for it to be under existing conditions, as it of course does not want to cut off any of its revenue that it can help.

There were 700 tons of grain and alfalfa hay received on the Los Angeles tracks the week ending August 27, with 240 tons held over.

Prevailing prices last week f. o. b. Los Angeles:

No. 1 Dairy	19.00
Standard Alfalfa	15.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats	18.00@26.00
Barley	16.00@24.00
Alfalfa, No. 1 Dairy	20.00@24.00
Standard	16.00
Straw	8.00

San Francisco Markets

San Francisco, August 30, 1921.

Quotations made daily by San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

BUTTER

Dairy Exchange quotations August 30:

Extra Choice	49

Dairy Exchange prices extras this week and year ago:

Aug.	24	25	26	29	30
'21	48½	49	49	49	49
'20	65	..	67	..	..

Rcts. four days ending August 29, 1,975 centals.

CHEESE

Dairy Exchange quotations:

Jack, full cream, street prices	14½@16
Oregon, Y. A.	26
Oregon Trips	22
Cal. Flats	21
Cal. Y. A.	25

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases, August 30:

Extras	46
Extra Firsts	44
Pullets, Extra Firsts	36½
Undersized	26½

Prices Extras last wk. & yr. ago:

Aug.	24	25	26	29	30
'21	43	42½	42½	44	46
'20	65	..	66½	..	..

Rcts. four days ending August 29, 225,678 dozen.

POULTRY

Wholesale prices are:

Young chickens: Leghorns, 1 to 1¼ lbs., 32@33 per lb.; 1½ to 1¾ lbs., 31@32; 2 lbs. and up, 31@32; heavy breeds, 1½ to 1¾ lbs., 32; 2 lbs., 32; 2½ lbs. and up, 35@38; staggy roosters, 20@25; old roosters, Leghorns, 15; heavy breeds, 18; hens, Leghorns, large 25@27; small to medium, 20@23; hens, heavy breeds, 35@38.

Ducks: 18 per lb., geese 25 per lb.; turkeys, live, 35; dressed, 45; Belgian hares, live, 15; dressed, 18@20; squabs, fancy, 35; do, common, 2.50 per dozen; old pigeons, 2.00.

LIVESTOCK

California Farm Bureau Marketing Association reports:

No. Hogs	Ave. Wt.	Dock	Price
Tulare, August 23			
44	166	...	$11.85
85	190	...	11.65
95	169	30	11.50
68	247	...	10.95
45	123	...	10.85
8	366	160	8.85

Four cars, 27 consignors, $7,329.00.

Visalia, August 24

83	174	...	11.55
34	216	...	10.50
20	133	...	10.00
2	280	...	10.00
14	287	320	8.00

Two cars, 13 consignors, $3,067.28.

Hanford, August 25

93	177	...	11.10
76	179	...	11.00
79	157	...	10.55
13	98	...	10.55
31	137	...	10.05
5	174	...	7.50
2	400	40	6.50

Four cars, 24 consignors, $5,349.29.

McFarland, August 26

90	183	...	11.00
70	169	...	10.50
27	120	...	9.05
3	340	30	8.00

Two cars, 18 consignors, $3,504.96.

Total for the week, 12 cars, 82 consignors, $19,250.53.

These prices are net to the farmer, while the prices of other markets, as quoted in the papers are f. o. b. the packing houses.

Western Meat Company quotes:

Cattle: Steers, No. 1, 5¼@5¾; do, second quality, 4¾@5¼.

Cows and heifers: No. 1, 4¼@4¾; do, second quality, 3½@4¼.

Calves: Light weight, 7@8; heavy, 5½@6½.

Sheep: Wethers, 3½@4; ewes, 2½@3.

Lambs: Milk, 6@6½.

Hogs: Hard, fat grain-fed, weighing 125 to 200 lbs., 11½; do, 200 to 250 lbs., 10½; do, 250 to 350 lbs., 9½; light sows, 9½; heavy, 8½.

POTATOES AND ONIONS

Street prices:

Potatoes: White, fy., per cwt., 2.15@2.25; Salinas, 3.00; Sweets, 3@4½ per lb.; Turlock Nancy Hall, 3@4 per lb.

Onions: New yellow, 2.00@2.10; brown, 2.25.

Green Onions: 1.50@2.00 per box.

Garlic: 3@5 per lb.

VEGETABLES

Wholesale selling price:

Beets: 1.75@2.00 per sack.

Beans: Blue Lake, 4@5; garden, 5@6 per lb.; Lima, southern, 7@8; river, 8 per lb.; Italian, 5@7.

Carrots: Sk., 1.00.

Celery: 4.00@5.00 cr.; 25 per bunch.

Corn: Alameda, 2.00@2.50; fy., 2.75; extra fy. ,3.00 per cr.

Cucumbers: Bay, 40@50; fy. River, 75@1.00.

Eggplant: Lb., 3@5; Livingston, 6@7.

Lettuce: Crate, 1.25.

Okra: 1.00@1.50 per box of about 10 lbs.

Peppers: Bells, 3@6 lb.; 75@1.00 lug; Spinach: Lb., 2@4.

Squash: Bay, 35@50 per 40 lb. lug; Italian, Peninsula, 1.25@1.50 lug; neck, 25@35 lug.

Tomatoes: Sacramento and Peninsula, 1.00@1.40; few 1.75 large lug; fy., 2.75 cr. 3.00 cr.

FRESH FRUITS

Apples: Gravensteins, 3½ tier, 2.50@2.75; 4 tier, 2.35@2.60; 4½ tier, 1.65@1.85; B grade, 3½ and 4 tier, 1.75@2.25; 4½ tier, 1.25@1.50; Alexanders, 3½ and 4 tier, 1.50@1.75; 4½ tier, 1.00@1.25. Crabapples, 1.50 per small lug, 75@1.25 per small box, 2.00@2.25 per apple box. Newtown Pippins, 2.10.

Avocados: California, doz., 3.00@5.00; Fla., 4.00@5.00.

Bananas: Eastern, 6@7; Hawaiian, 7@8.

Blackberries: 25@35 per drawer.

Cantaloupes: Turlock standards, 50@75; ponies, 50; flats, 30@50; orange flesh megs, 1.00 for standards, 50@60 for flats; do Sacramento, 75@85. Persian melons, 1.00@1.25 small crate; 1.50 large crate. Honeydew melons, 75@1.00 per standard crate. Casabas, 1.00@1.50 per dozen.

Figs: Black, single layer, 75@1.25; double, 1.25@1.50; White single, 65@75.

Gooseberries: 7@8 lb.; English, 15.

Grapes: Seedless, 75@1.25 per crate; Tokay, 1.75@2.00; do, small lugs, 2.00@2.25; black, 1.25@1.50; Malaga, 1.25@1.60; Muscat, 1.50@1.75 large lug; seedless, 1.75@2.00; White Cornichon, per crate, 2.25@2.50; Rose of Peru, 3.00 large lug; Tokay, 3.00 large lug.

Huckleberries: 12½@13; fancy, 17½.

Nectarines: Fancy, 2.00@2.25 per crate; 3.00 per large lug; 1.00@1.35 per small box.

Peaches: Large lugs, 1.25@1.50; fancy, 1.75@2.00; small boxes, 1.00@1.50; clings, 3.00.

Pineapples: 4.00@5.00 dozen.

Pears: Bartletts, No. 1, wrapped, 2.50 3.50 box; other grades, 1.50@2.25.

Plums: 75@1.25 cr.; small lug, 1.00@1.50; large lug, 2.00@2.25.

Prunes: Cr., 1.00@1.25.

Quinces: 1.00@1.50 lug.

Raspberries: 60@70 per drawer; few 75.

Strawberries: Salinas, cr., 1.00@1.30; drawer, 50@55; few 60; Watsonville, cr., 1.10@1.25.

Watermelons: ¾@1 per lb.

CITRUS FRUITS

Citrus Fruits: Valencias, 4.00@5.50 per box. Lemons: Fancy, 5.00@5.50 per box; choice, 4.00@4.50. Lemonettes: Choice, 2.00@2.50; fancy, 2.50@3.50 per box. Grapefruit: Choice, 4.00@4.50; fancy, 4.75@5.00.

DRIED FRUITS

Prunes, 1921 (Cal. Prune & Apricot Growers): Sunsweet Quality, bulk basis: 30-40s, 9¼; 40-50s, 8¼; 50-60s, 6¾, 60-70s, 6¼; 70-80s, 80-90s, 90-100s, 5½. Growers Brand ¼c less on all sizes. All prices subject to change at any time.

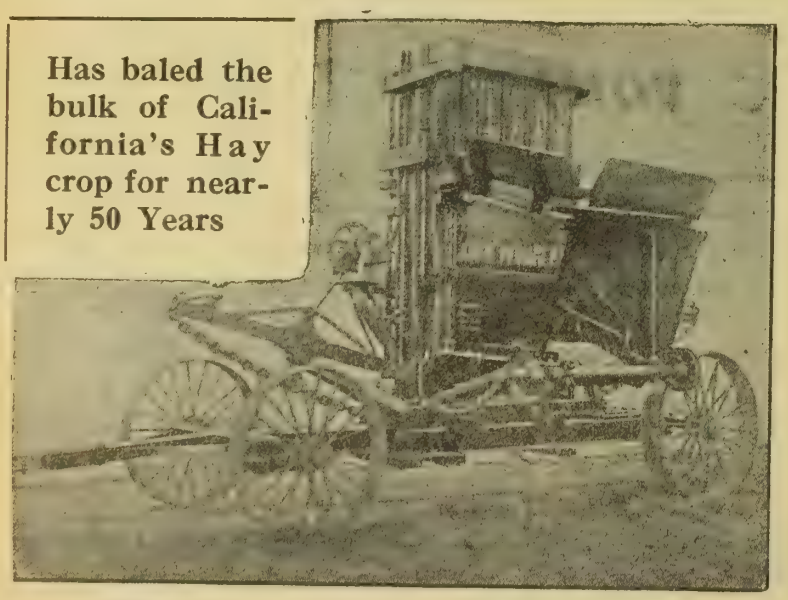
BEANS

Below California Bean Growers Association shippers prices choice recleaned:

Large Whites	5.15
Small Whites	4.70
Pinks	5.85

Jr. Monarch Hay Press

Has baled the bulk of California's Hay crop for nearly 50 Years



Belt or Horse Power

Guaranteed to excel any press built.
Capacity 50 to 100 tons per day.
BALES HAY, STRAW OR GRASSES
Write for Descriptive Circular

JR. MONARCH HAY PRESS CO.
SAN LEANDRO, CALIF.
See the Junior Monarch at the State Fair

Mexican Reds	5.30
Red Kidney	9.25
Henderson Bush	4.40
Cranberries	5.55
Bayos	7.50
Blackeyes	4.30

HOPS

From 14@23 per lb. for 1920 California crop; do, 1921 crop, 26@30½, according to quality and district in which grown.

HAY AND FEED

Alfalfa Growers of California state that prevailing prices f. o. b. S. F. are:

No. 1 Dairy	15.00
Standard	14.00

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers charges of switching, cartage, commission and handling expenses must be added according to conditions).

Wheat Hay No. 1	15.00@18.00
Wheat Hay, fair grade	13.00@15.00
Tame Oat Hay	12.00@15.00
Wild Oat Hay	10.00@12.00
Alfalfa Hay, later cuttings	12.00@14.00
Stock Hay	8.00@10.00
Barley, Ground	31.00@33.00
Rolled	29.00@30.00
Oats, Rolled Feed	30.00@32.00
Bran and Millrun	28.00@30.00
Middlings	40.00@43.00
Linseed Meal, Nominal	37.00@40.00
Cocoanut Meal	22.00@25.00
Alfalfa Meal	22.00@24.00
Cottonseed Meal	35.00@40.00
Sugar Beet Pulp	32.00
Molasses, Tank	21.00 Barr 25.00
Milo Maize	38.00@41.00
Corn Meal & Crkd Corn	38.00@41.00
Scratch Feed	45.00@48.00

GRAIN

Wheat: Milling, 1.90@2.00; feed, 1.90 @2.00.

Barley: Feed, 1.20@1.25; shipping, 1.25 @1.42½.

Oats: Red Feed, 1.30@1.50.

Corn: California yellow, 1.50@1.55; No. 2 Eastern, in bulk, 1.50@1.57; do, No. 3, 1.50@1.55; No. 2 kaffir, in bulk, 1.65@ 1.70; do No. 3, 1.65@1.70.

Citrus Markets

Los Angeles, August 31, 1921.

Many Valencia packing houses have finished on their season's output and are closed. They are still going out, however, around 100 carloads daily. Market conditions rather easy.

The lemon situation is very favorable to the grower though the season for spectacular sales seems to be over.

Shipments

Shipments of citrus fruits to date since November 1, 1920, Southern California, Oranges, 35,924 cars; lemons, 10,062; total, 45,986. To same date last season: Oranges, 27,809; lemons, 7,380; total 35,189. From Central California to date this season: Oranges, 6,644; lemons, 212; total, 6,856. To same date last season: Oranges, 5,377; lemons, 289; total, 5,666. From Northern California to date this season: Oranges, 305; lemons, 5; total, 310. To same date last season: Oranges, 261; lemons, 23; total, 284.

AT THE AUCTIONS

August 24

New York: 27 or., 3 lem. Val. 2.80-7.75, lem. 1.50-4.65.

Boston: 11 or., 1 grapefruit, 4 lem. Val. 3.00-6.05, lem. 1.00-3.95.

Cleveland: 5 or., 2 lem. Val. 2.15-5.80, lem. 3.30-4.00.

St. Louis: 4 or., 2 lem. Val. 3.80-4.85, lem. 4.10-4.90.

Philadelphia: 8 or., 2 lem. Val. 2.65-6.45, lem. 1.45-4.45.

Pittsburg: 4 or., 1 lem. Val. 2.95-4.60, lem. 2.30-2.90.

August 25

New York: 26 or., 1 mixed, 1 grapefruit, 3 lem. Val. 2.80-7.00, grapefruit 3.40, tangerines 65, lem. 1.80-4.20.

Boston: 11 Val. 3.20-5.70.

Philadelphia: 9 or., 1 lem. Val. 3.30-6.00, lem. 1.40-2.60.

St. Louis: 2 or., 1 lem. Val. 3.90-4.95, lem. 4.35.

August 26

New York: 20 or., 1 grapefruit, 2 lem. Val. 3.05-6.95, grapefruit halves 1.45-2.05, lem. 3.10-4.40.

Philadelphia: 5 or., 2 lem. Val. 3.60-6.30, lem. 1.75-2.30.

Cleveland: 2 or., 3 lem. Val. 2.20-3.80, lem. 1.45-3.00.

Cincinnati: 3 or., 2 lem. Val. 3.60-5.30, lem. 1.65-4.35.

August 29

New York: 32 or., 2 mixed, 3 lem. Val. 1.80-6.80, grapefruit 4.60, lem. 3.50-4.95.

Boston: 17 or., 2 lem. Val. 1.55-6.05, grapefruit 2.60, halves 95-2.30, seedless grapefruit halves 75@95, lem. 3.00-4.60.

Pittsburg: 6 or., 2 lem. Val. 3.35-5.30, lem. 1.60-4.20.

St. Louis: 2 or., 3 lem. Val. 3.85-4.90, lem. 3.85-5.05.

August 30

New York: 25 or., 1 mixed, 3 lem. Val. 2.50-6.40, lem. 2.55-5.25.

Boston: 9 or., 1 lem. Val. 2.50-5.90, lem. 4.30-4.75.

Pittsburg: 3 or. Val. 2.85-3.55.

St. Louis: 2 or., 1 lem. Val. 3.90-4.90, lem. 5.15-5.20.

Philadelphia: 11 or., 1 lem. Val. 3.10-6.10, lem. 2.90-3.50.

ORCHARD MANAGEMENT STUDIES IN TULARE COUNTY

(Continued from Page 231.)

of water applied at each application has been approximately the same on the two blocks). This is another example of the danger of growing summer covercrops where a thoroughly adequate water supply is not assured. Despite the need for organic material, it should not be grown in the orchard at the expense of the constant and liberal water supply for the trees.

Our work on the tillage of the adobe soils has been continued with some definite conclusions and other suggestive observations. Those who have followed this work realize that we have attempted to compare several radically different methods of culture in the hope that some one or more might prove particularly effective and practical. The first of these methods to be relegated to the discard is the growing of alfalfa on alternate middles between the trees. We had hoped that this deep rooted legume, grown on less than one-half the land at any one time, might prove of benefit in opening up the soil. The injurious effect on the trees was, however, so plainly shown in a dropping of foliage and general yellowing of the trees that, at the end of the second year, the treatment is to be discontinued. Numerous cases are on record where alfalfa grown in every middle in mature orchards has been injurious, but it had been thought that with alternate middles clean cultivated the competition, or the toxicity, or the whatnot, would not be too great. Such was not the case, however, and hereafter we will feel justified in condemning any practice of growing alfalfa in a mature orange orchard.

The plots upon which summer covercrops have been grown and the plots covered with a summer mulch of straw have no outstanding developments that warrant either rejection or advocacy of these treatments. They will, therefore, be continued until they give more positive account of themselves.

The surface soil on the plots tilled almost entirely with a plow has continued, throughout the two years, to maintain the best physical texture of any in the experiments. Our moisture determinations continue to show that there is a better penetration of irrigation water on the plots so handled which we believe has definitely been to the advantage of the trees. Certain it is that the trees on these plots are in splendid vigor, although the production has not yet increased as much as might be desired. It will take at least another season to demonstrate whether or not this practice is conducive to heavy fruiting. It may be, also, that the constant plowing will eventually form a serious plow-sole condition. This does not seem to have occurred as yet.

When the condition of the soil, the vigor of the trees, and the amount of fruit set are all considered it seems that nothing has yet clearly surpassed the standard treatment of fall planted covercrop with plowing in February or March, followed by deep summer cultivation. Very careful attention has been paid, however, both to the time and the depth of cultivation, and to this attention we lay the marked improvement both in tilth of soil and condition of trees on these plots as compared to two years ago. Certain growers have, in the past, cultivated their soil when it was too wet, which practice is particularly injurious to adobe soil in the hot summer. Also, much so-called cultivating has in reality been nothing more than surface tickling which tends rather to pack the soil than otherwise.

Just as deep and timely tillage is proving of advantage on the adobe soil, so we believe it will on the other types of citrus grove soils in Tulare County. Our observations convince us that there has been far too much shallow cultivating, too much wet cultivating, and even too much too dry cultivating on all soil types throughout the county.

In brief, then, the key-words to the successful care of orange groves in Tulare County would seem to be consistency and thoroughness. Consistency in fertilization, in pest control, in the application of water, and in tillage; thoroughness in tillage, in irrigation, in pest control, and in fertilization.

QUESTIONS AND ANSWERS

(Continued from Page 238.)

vator if enclosed leaves are Cory or Burbank blackberry. — Subscriber, Lankershim.

The leaves are from the Burbank. They are flat, fairly smooth, slightly notched on edges, not more than two inches long or more than an inch wide. But the most marked difference is that the Burbank leaf is almost white on under side while the Cory is a clear green beneath, but little paler than on the upper surface. The Cory leaves are much larger, coarser, larger notches in edge, ruffled, not flat, almost grape-like in general appearance and green on both sides.

In order to get an unbiased opinion we wrote to E. W. Jamison, Ontario, who grows, or has grown, heavily of Burbank, Cory, Mammoth and other berries. Mr. Jamison says: "The Burbank, if heavily pruned, will bear after the second year only. The berry is small and round and uncertain as to maturity. I would hesitate to recommend it as I do not think it would pay commercially. On a recent trip to and through San Diego County I found a great deal of complaint about it and can find none who say it does well or makes good berries. In Santa Barbara I recently saw vines which had been well pruned and taken care of, but the results were not very good, so I am satisfied it is time and money wasted to plant them in the south end of the state. They may do better in the north.

"The Cory is like the Mammoth in most respects, though it is a little larger around, a little firmer and a little more tart. It is, I believe, a little better in all respects than the Mammoth and if picked before getting too ripe is a good shipper for short distances. The only objection to the Cory is that an occasional shoot has thorns. I have three vines now with thorns on all canes, but only three in a one-acre patch. These I shall dig out and the occasional thorny shoots I prune off."

PLANTING AND CARE OF SUB-TROPICALS

"Citrus and Tropical Fruit Trees, a Monograph on Planting, Culture and Care," a book of nearly 70 pages and filled with color plates and half tone illustrations is the newest and most valuable addition to information on history and culture of sub-tropical fruits in California. The R. M. Teague Nurseries of San Dimas are the publishers of the book which treats on the principles and practices of citrus and tropical fruit culture from the nursery tree to the full bearing orchard, together with timely suggestions on harvesting, packing and marketing, based on 33 years' experience in California. In a way the book is an advance salesman for fruit trees but it is far more than that in the fund of information which it contains on production of nursery trees and more on planting and culture.

The color plates are excellent in showing form and color of Washington Navel, Valencia, Eureka lemon and Marsh Seedless pomelo. Also a new color plate giving the first look at avocados in natural color reproduction. This plate shows three varieties of avocados, the Puebla, Sharpless and Fuerte. That portion of the book given to sub-tropical fruits other than the citrus is mostly devoted to avocados but a bit of story and cultural information is given as to feijoa, cherimoya, sapote and different varieties of the guava. The book will be mailed by the Teague Nurseries, San Dimas, for 50 cents.

The Fall River and Hat Creek farm centers are sponsoring the third agricultural fair at McArthur, Shasta County, September 8-10.

WEATHER REPORT

San Francisco, August 27, 1921.

Stations	Rainfall Wk.	Season	Norm.	Temp. Max.	Min.
Eureka	.00	.01	.17	62	48
Red Bluff	.00	.00	.00	90	60
Sacramento	.00	.00	.00	88	54
San Francisco	.00	.00	.01	69	53
San Jose	.00	.00	.03	82	44
Fresno	.00	.00	.00	98	62
San Luis Obispo	.00	T	.03	84	48
Los Angeles	T	T	.00	86	60
San Diego	T	T	.00	76	62

Important to Bean Growers

The handling of beans with a side delivery rake is certainly the most practical and economical way to handle the crop provided the rake used is properly built and properly geared for the handling of beans.

In the ordinary side delivery hay rake the cylinder is speeded entirely too high for beans. When the cylinder runs at a high speed the beans are handled so roughly that a great many are threshed out of the pods and lost. The Thomas Side Delivery Bean Rake is especially geared for the handling of beans. The cylinder moves much more slowly than it does in a hay rake.

Dixon & Griswold at No. 130 North Los Angeles Street have in stock the Thomas Side Delivery Rakes geared especially for beans and also have them in stock geared for hay. They are offering them at a special price of $100.00 each f. o. b. any railroad point in California or Arizona. Your dealer can easily get a Thomas for you at this special price. If there is no dealer in your section you can order a rake yourself by 'phone. The telephone number is 62825 Los Angeles.

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Citrus

And Ornamental

Vines & Roses

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We desire the people of Southern California to become acquainted with the fact that we have the largest variety of fine ornamental and fruiting plants to be found within the borders of the State, and, we thoroughly believe, the United States.

REASON II

We have to make room for our large stock of fine plants now growing on RANCHO POMOFLORA and at Colorado St. and Hill Ave.

REASON III

We have the ambition to build up here in Pasadena one of the greatest nurseries in America and for our expansion we can use to advantage a few thousand dollars.

To convince you that we mean business we are going to offer, beginning September 1, any or all of the stock in our lath-houses on the south side of Colorado St. at Hill Ave., at just

HALF PRICE

Here are some of the bargains; all our fine 75c Roses, including such varieties as "Ophelia," "Hadley," "Sunburst," "Columbia" and many others at 40c for one, or two for 75c.

AVOCADOS

We have a fine stock of budded "Fuertes," "Spinks" and others. Any $5.00 tree at $2.50. We will have a nice lot of thrifty budded trees that will go at $1.50 each.

You will find our regular retail price marked on each block of stock, and 50c on the dollar takes any of it. In addition we will have a large block of stock somewhat overgrown that you can have at 25c on the dollar, or less.

This is strictly a Cash Sale and no deliveries will be made of orders under $10.00.

This sale price does not apply to our wholesale department on the north side of Colorado St., nor to any stock now growing in the field. The sale will continue for two weeks, or until we have realized what we have started out to do. Business hours 8 to 5. No orders at sale prices will be taken over the telephone and no replacements will be made.

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Uplands—J. Lynward Grahame.
Redlands—Home Oil Co.
San Bernardino—San Bernardino Rubber Works, 595 3rd St.
Riverside—Riverside Vulc. Works, 303 W. 8th St.
Indio—Indio Garage.
San Diego—Miller Motor Supply, 648 Market St.
Fullerton—Pitts & Wilkinson.
Torrance—Palmer & Stapelfeld.
Anaheim—F. W. James, 223 No. Los Angeles St.
Orange—E. G. Stinson.
Santa Ana—Santa Ana H. S. Tire Co., 417 No. Broadway.
Long Beach—Coombs & Tressler, 31 American Ave.; Jones Hardware Co., 1260 American Ave.
Gardena—E. A. Tepper
Pasadena—Pasadena H. S. Tire Co., 34 No. Union St.; H. W. Shafer, 30 W. Colorado St.
La Habra—Missouri Garage.
Brawley—Quick Service Vulc. Shop.
El Centro—Swinson Service Station.
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Westmoreland—L. W. Norman.
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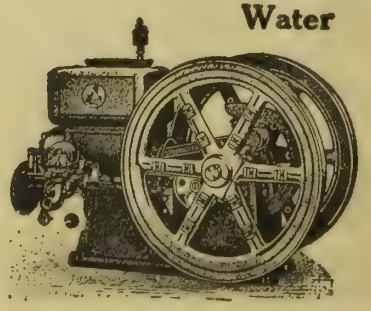

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LVII — September 10, 1921 — No. 11

Old Olive Trees at Mission San Diego

THE first olive trees planted in California were at the San Diego Mission. This photo, taken by R. R. McLean, gives a view of some of them. Mission is shown in the background.

Early historical records show that in 1769 Jose de Galvez, commander of the two ships bearing the colonists who founded the Mission San Diego de Alcala, imported various fruit and vegetable seeds from Mexico and planted them at the mission here. It is assumed that among these seeds were those of the olive, for olive trees grew up around the Mission, and in after years cuttings from them were secured by the padres and planted at the other missions as they were built, and in this manner the "Mission olive," as it is still known, became established all over California. In fact, until about 1880 this was the only variety with which Californians were familiar. A very strong proof of the origin of this variety from seeds lies in the fact that, like the Mission grape, the Mission olive has not been identified with any old world variety, although undoubtedly of European origin.

Among the olive trees at the Mission San Diego some of the old palms, presumably planted at the same time, are still flourishing.

Established 1877 Forty-fourth Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877

Combined with California Cultivator 1914 Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

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Saturday, Sept. 10, 1921

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

If among the more than 40,000 Cultivator's weekly circulation any fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

EDITORIALETTES

One of the best things apparent at the state fair is the interest in various county and other fairs. Many of the exhibitors, especially those of pure bred stock, are planning for the circuit as soon as their stock is released. In fact, several strings have come here from the Santa Rosa fair of last week.

* * *

O'Connor says regarding that North of Bay Counties Fair at Santa Rosa that it proved a distinct surprise to the home folks. They knew Sonoma County was able to produce fruits, vegetables, farm crops and pure bred livestock, but few realized that she has done it so perfectly as was shown at that exhibition.

* * *

One of the drawing cards at the fair is the Speedway. It's an honest-to-goodness "fastest on earth." Here's the proof: "110.84 miles per hour." This is nine miles better than previous records.

* * *

Nor was the racing confined to the realm of gas, for the ponies at the fair just ended hung up a record of 1:43, while the trotters fixed upon 2:14 as the right figure.

* * *

One of the most notable features at the state fair is the force of experts from the state university, ready to give information on carburetors, transmission, oiling and greasing, or any other problem of the power farmer. Tractor parts are there in all stages of tearing down. The inquirer is quickly shown the working mechanism of his type of tractor or of one so closely allied that it is exceedingly informative. The objection to this exhibit, or rather school, is that it is located in about the most remote part of the grounds.

* * *

Professor Fletcher is in charge of the school, and he suggested that: "The success of any machine depends to a very large extent upon the ability of the operator to properly care for it. With this in mind, we have arranged to demonstrate in this school tent the common repair operations on tractors and trucks, such as bearing fitting and adjusting, ring fitting and valve grinding, together with such other work as magneto care and timing, carburetor adjustment, lubrication information, etc. It is intended that those people desiring information concerning the repair or care of their automotive equipment ask the instructors to show them how these various jobs should be done. In other words, it is to be a 'cafeteria' school. Naturally, all instruction is free and there will be nothing for sale in this tent."

PRESIDENT HARDING COMPLIMENTS CALIFORNIA AS LEADER

A wire from the President to Director Hecke at State Fair, Sacramento, says:

"California has led not only the nation but the world in the highly valuable and important work of standardization and distribution of fruits and vegetables. There could be no better testimony than the California fruit and vegetable industry which is a monument in a broad way. The entire agricultural interests of the nation are certain to profit greatly whenever these methods can be extended throughout the world. This is the most perfect possible marketing."

SAVE TAHOE

Nevada is trying to get Lake Tahoe. California is saying quite loud: "NO!" Its waters are, of course, very valuable for Nevada lands, but California has proven the wonderful value of its greatest asset—beauty. And the idea of taking away this beautiful lake and leaving only a mud hole is almost sufficient to cause civil war. However, we think there is no occasion for being heated up at all, for Director of National Parks Mather is wise to the entire situation.

D. B. MACOUN

One of California's doers of things, D. B. Macoun, died recently at his home in Willows, Glenn County. Mr. Macoun was one of these hard working men who felt that duty called for his remaining at his post and working quietly, so that his circle of acquaintances may not be as large as some, yet he was loved because of his dependable work and whole-hearted friendliness.

He was a native of Canada, came to California in the early eighties, lived in Riverside as superintendent of the Arlington Heights Fruit Company's orchard properties. A dozen or more years ago he went with Mr. Mills to Glenn County to superintend the work in the Mills citrus orchards. His passing was as quiet as his life, and only by merest accident we learned of it a few days ago.

MORE COOPERATION

President Howard of the American Farm Bureau Federation has appointed a committee of 21 to serve as a Farmers Fruit Marketing Committee. This committee is to be instructed to evolve a plan whereby the fruit producers may establish and conduct cooperative fruit marketing organizations.

The committee will include the following: W. B. Armstrong, Yakima, president Washington Farm Bureau Federation; Sheridan W. Baker, Santa Rosa, chairman horticulture department of the California Farm Bureau Federation; A. E. Johnson, Grand Junction, Colorado, president Mesa County Farm Bureau; W. S. Keeline, Council Bluffs, Iowa, National Horticultural Congress; C. I. Lewis, Salem, Oregon, manager Oregon Growers Cooperative Association, and R. S. Peters, Devore.

Baker and Peters are live wire Californians. Something doing if the others are as well qualified.

GAMBLING

The country has been generally gratified by the fact that "the biggest gambling institution on earth," the pit at Chicago, has been brought under at least a measure of control by a recent action of congress. Thousands of other smaller institutions are maintained which unfortunately are giving to our children ideas which may lead to bigger gambling institutions in the future. We refer to the fortune wheels, dice, and a thousand and one other features in our parks and at various pleasure resorts. We had occasion nearly a year ago to refer to a similar state of affairs at the state fair that year—nearly 100 of these institutions were given a most prominent place on the grounds and were surrounded almost continually by crowds of men, women and children, gambling for kewpies, Teddy bears, hams, canary birds, in fact every form of merchandise, and especially attractive playthings which caught the eye of children. We believed the tendency entirely wrong for an educational institution, and the state fair is an educational institution.

The conditions were appreciated by the people of Sacramento, and this year the city council made enactment, putting an embargo on all wheels of fortune and purely chance gambling schemes. This has greatly reduced the number of these institutions, but there are still a score or more operating under the guise of "Games in which Skill is Required." Instead of simply watching the wheel of fortune stop on the lucky number, or usually the reverse, now either Dad or Mother must throw a baseball and strike the nigger baby or toss a ring over the knives or knock down a certain number of ninepins, or perform other "skillful" operation. Slightly less objectionable, but teaching the same lesson.

With the host of high school clubs and school children from every section of the state invited, and attending, the state fair, let us give to them the most wholesome lessons. It can't be done with these loud barkers calling their wares, to secure which involves a lesson in gambling.

MOVE THE CROPS

The other day we stood on the wharf in San Francisco and saw coming from the hold of a vessel just in from Hong Kong and Yokohama many an eight bale derrick load of raw silk. We were told those eight packages contained somewhat over $8,000 worth of material, each bale weighing 133 pounds, and the entire shipment was valued at over four millions of dollars.

The steamer was a fast one, chosen by the shipper because of that fact, and alongside it had been run the express cars which were to convey the raw product to the eastern manufacturer. It was to remain on the San Francisco wharf but an hour or two and was to go through to New York on express time, which it was hoped would not exceed five or six days. It required many cars to handle the entire shipment.

The occasion for the haste was simply the saving of time and money. Owing to the great value of the shipment, insurance rates and interest on investment were of greater import than express charges. The sooner delivered, the sooner the handlers were released from responsibility.

It occurred to us that therein was a lesson to the farmer in handling his crops. We have known of farmers who never seemed to consider marketing or disposal of the crops until harvest time. In fact, many seem to plan purposely to delay marketing. Many such farmers are paying large sums in interest and sometimes in storage, besides losing in shrinkage, and, if wise, are keeping their products insured. These expenses eat bigger holes than one realizes and they should expedite marketing operations.

SAVE THE WATER AND POWER

A very active campaign has just been started to further California's water and power act. The act is a proposed constitutional amendment to make possible the use of state credit in order to supply power and water to ourselves at cost. The committee organized to advance the interests of the state through this measure is composed of:

William Kent, Kentfield, chairman; Dr. John R. Haynes, Los Angeles, vice-chairman; Rudolph Spreckels, San Francisco, executive director and treasurer; Dr. Horace Porter, mayor of Riverside, secretary; Clyde L. Seavey, city manager of Sacramento and former manager of the state board of control; L. L. Dennett, state senator from Modesto; William Mulholland, Los Angeles, builder of the Los Angeles aqueduct; William J. Locke, secretary of the League of California Municipalities, and city attorney of Alameda; Esto Broughton, assemblywoman from Modesto; Mrs. Anna L. Saylor, assemblywoman from Berkeley; J. L. Matthews of Los Angeles, member of the state water commission; Louis Bartlett, mayor of Berkeley; Franklin Hichborn, publicist, Santa Clara; Mrs. Herbert A. Cable, deputy labor commissioner, of Los Angeles; C. W. Koiner, city manager of Pasadena.

Headquarters will be opened in San Francisco; other offices in Sacramento, Los Angeles and Riverside.

This certainly is far more patriotic—likewise sensible—than to join in the campaign made by large hydro-electric interests to prevent communities from securing these power and water rights. Apparently the present effort will lead to various communities of the state uniting in securing use of the power and water at cost of providing them.

One of the forces combating this effort to secure power and water at cost—in order to finance its campaign—is offering exceptionally long interest rates on stock sold to its patrons, ourselves. Payment of this high interest rate outwardly comes from the company doing the developing; we all know that it comes from the consumer.

California Cultivator

Vol. LVII, No. 11 Los Angeles, September 10, 1921 One Dollar Yearly

Sixty-Seventh Annual State Fair

Editorial Correspondence

IT'S a boys and girls fair, that is, it's educational, and some of us must confess that boys and girls are more eager to take advantage of these opportunities than we who may be a bit older. Today, Opening Day, high school clubs have been contesting in judging of cows and of calves, and girls have been showing their handiwork in almost every conceivable way in the educational building. Educators have been meeting at the University of California headquarters and discussing how they can keep up with the demands of these bright youngsters. Besides the Boy Scouts have drilled, have saved one of their own number from drowning, have taken poles which, with their coats, have made stretchers, and carried off the "dead," and all round it has been a girls' and boys' day.

And this is all occurring on the river of the Holy Sacrament, the river which pours out its wonderful blessings on a large portion of the great central valley. It is the state fair, the sixty-seventh since the one which was first held in 1851. I cannot say, yet, as to how great will be the observation of the anniversary of the state's birth, which will be on Friday, the 9th, when we are promised fine attendance. It is thought, however, that Monday next, or Labor Day, will be the banner day in attendance.

Charlie Paine is somewhat of a pessimistic optimist. I asked him this morning as to his hopes of attendance, and he seemed rather blue and remarked: "Well, I am $90,000 in the hole now; I don't know where I will be by the end of next week." But the crowds are coming very satisfactorily, and Monday's and Friday's attendance will go a long way toward pulling him out of that hole.

It is hardly probable that last year's big record will be equaled. That was the biggest ever and may stand for some time as the top notcher.

President Jastro, and Directors Borden, Bull, Delorey, Dudley, Franklin, Harvey, Mitchell, Perry, Pierce, Ramsey and Roeding are all on the ground, and with coats off. However, let me say right here that Sacramento climate is outdoing itself this year, the weather is simply perfect, and of course the Sacramentans are saying, "This is just as we always have it," to which we all agree.

As to the exhibits the headlines of the local papers are using largely of superlatives. We note: "California's Wonder Pageant," "Gifts of Nature to a Wonderful State," "Great Abundance of Natural Wealth," "Amazement at the Wonderful Exhibits." And I believe I may say that the arrangement and the wealth of the products as shown in the main or Horticultural Building have not been excelled at former fairs.

Turning to the right as we enter the Agricultural Building, we find Yolo County in her old time location with, of course, Fred Shaffer in charge. Fred vouches for there being 80 varieties of grapes in his exhibit, and we confess Yolo is some grape county. Besides, of other fresh fruits there are 75 varieties, and I may add that a whole lot of them are plums, for there certainly is a magnificent showing of plums. Of pears there are some 21 or 22 varieties, and 16 of peaches. There is an exhibit of Eureka rice, said to ripen three weeks or more sooner than the ordinary early variety. Then there is ramie and a still larger exhibit of hemp. Hemp is but little planted in California but an experiment farm in Yolo County is proving its worth and possibilities under irrigation, and the time may come when California will consider this humble member of the nettle family one of its great assets. Not only is the plant shown in all stages from the green and immature plant, but some of its products are shown, and in addition a bulletin issued by G. William Schlichten is freely distributed, giving the results of Mr. Schlichten's many years' experience in growing this fiber. A striking feature of Yolo County's exhibit is a monster safe lettered "Yolo is a Safe County."

Alameda County is next. Alameda has a novelty in a great book, the leaves of which are of monster cardboards on which the sign painter has written in some of the great productions and things accomplished by that county. Ed Stearns is one enthusiastic believer in that county and he has a mass of information regarding Alameda's diversified crops, two great cornucopias pouring out a wealth of, may I say hundreds, of products, and I say correctly, for there are by actual count 244 varieties of fruits and vegetables. Of the summer squash there are some specimens that will provide meals for a family for weeks. Immensity is not the only qualification, for Mr. Stearns assures me their quality is in every way equal to their size. The biggest exhibit of chestnuts on the grounds is in this exhibit.

Calaveras exhibits little of interest to agriculture, though there are a number of fine apples and vegetables. Her great showing is of minerals. Calaveras is one of the greatest gold producing counties in the state, but she is featuring more particularly asbestos. Within her borders are some eight million tons of asbestos rock, and a company is now opening up the veins and contemplates adding to California's productions one which is produced nowhere else in the United States. Our principal supply now comes from Canada.

Occupying its usual place at the far southern end of the building is the California state department of agriculture. This is too important an exhibit to attempt to describe after the once over, so we will speak of that more at length in another issue.

Down through the center of the great building are exhibits by the U. S. bureau of public roads, the division of forestry and many counties. The division of forestry has one of the most artistic and realistic exhibits in the building. It's a combination of fine art in the background, with real animals and the greenery of the mountains. At least one-half of the picture is of green growth while the other half represents only the sere and brown of trees and plants devastated by fire.

Next comes the Almond Growers' exhibit, artistic, exquisite and, I may add, decidedly appetizing. The usual plate glass cases and cut glass jars are filled with almonds in shells and in almost every conceivable manufactured form, but there is one glass case by which we all stood and looked longingly. It is filled with almonds in the form of all kinds of confections, made from almond paste, from broken nuts, from chopped nuts. There are creams, there are hard candies, there are fancy pastries, there is even an almond pie, a monster 16 or 18 inches in diameter and said to be a particularly choice edible in southern France. This exhibit is under direction of David Bailey.

Next door is Riverside County, G. A. Packard in charge, with Mr. Baxter featuring the Sunni-Hunni exhibit. Raymond Cree is in charge of the dates, and that date tree is perhaps the most prominent exhibit in the whole building. It is an 18 year old Coachella Valley seedling with 15 monster clusters of ripening dates. The tree was taken up bodily, and these great clusters of dates strapped to braces fastened to the tree, and the tree, perhaps 20 feet in height, set on flat car and shipped nearly 600 miles. The clusters of dates are estimated to weigh about 120 pounds, and valuing them at $1 per 12 ounce carton, which some of Coachella Valley's finest dates are sold for, one gets an idea of the sacrifice made by Coachella Valley people in sending this one plant as an educational feature to this state fair.

Fresno always puts up one magnificent exhibit. 1921 exhibit is no exception. Naturally raisins make the greater portion of it, although the real raisin exhibit is in an entirely different section, up in the gallery, featured by the California Associated Raisin Company. But of peaches and table grapes she certainly makes magnificent showing. These, likewise, are given the advantage of an additional showing in the California Raisin & Fig Growers' exhibit, also in the gallery.

Then comes San Joaquin with a decidedly marine look to her exhibit. From the background is emerging a monster ship's prow, her decks laden with wool and other San Joaquin products. In front are great barges loaded to water's edge with products, principally fresh grapes. This is to feature particularly San Joaquin's shipping facilities—"We are on tidewater," and her great commercial advantages. This exhibit is in charge of C. C. Jensen.

Then comes the rotunda, and after that the exhibit of Placer County. Placer County has no old Spanish Missions, but she has a fine new one in this exhibit. She has appreciated the beauty of mission architecture and has worked it into her exhibit scheme perfectly. The center piece is a beautiful bird fountain, product of one of her clay products companies. In addition, there are large jars for plants, jardinieres and various glazed and unglazed clay vessels. Citrus fruits also enter largely into her exhibit, and the county claims greatest diversity in fruit production of any in California.

Next come the huckleberries. They are in the Mendocino County exhibit and are fresh, just from the bush. Everyone who has ever eaten huckleberry pie is likely to migrate to Mendocino County when he learns of her huckleberry possibilities. They are not cultivated in that county; they just naturally grow, and one little community known as Albion is the huckleberry center. While these huckleberries are growing wild either on public lands or lands which will not for a long time be brought under cultivation, they are known as huckleberry ranches, and by common consent of the huckleberry pickers the hillsides are apportioned by some sort of unwritten law to the different families, and every family recognizes and respects the rights of the neighbors to their particular "ranch." The automobilist passing through and gathering his "mess" for his own use is good naturedly tolerated, but should he locate and proceed to make permanent claim to that which for many years has been regarded as the "property" of another, he is soon made aware that he is incurring the displeasure of the entire community. The huckleberries are shipped by parcel post, some days two great auto truck loads of parcels being required to carry the mail to the nearest railway point. Then Mendocino shows 40 varieties of apples and innumerable other exhibits, most attractive of which are sections cut from great redwood trees. They are worth a story another day. The exhibit is in charge of Robert Austin of Ukiah.

Kings County shows monster dining room table. How many it will seat I don't know, but say 100, and it is loaded to capacity with peaches, apples, figs, apricots, grapes—but why mention all of California's products; they are all there. A back-east Thanksgiving time look is given to this exhibit by liberal use of corn and pumpkins.

Stanislaus County is featured by a beautiful grape arbor with pergola approach. Monster grape bunches hang in profusion and the background is sheaths of dozens of varieties of grains, with spuds, squash (one a yard long), melons, in fact, truck loads of all kinds of farm products.

Los Angeles County shows diversity of products, but the one central and big feature is a striking exhibit of her hydro-electric power system. Los Angeles carries her domestic water about 250 miles, or, say, as far as it is from San Francisco to Reno, Ne-

(Continued on Page 270)

Agricultural News Notes of the Pacific Coast

Northern California

The rice mill at Colusa is working day and night on last year's crop.

Several carload shipments of cattle were made from Livermore last week.

The territory about Oroville, Butte County, has 500 acres in bearing olive trees.

The wild plum crop of Sierra County is very light this season due to severe April frosts.

Tehama County hog auction at Red Bluff, October 21; Butte County, October 19.

A bulk rice and grain elevator is to be built two and one-half miles south of Willows.

The Almond Growers Exchange closed its membership roll for the 1921 crop on September 3.

An egg laying contest is to be a feature of the Tehama County fair to be held at Red Bluff October 3-8.

The Sonoma County fair held last week at Cotati was a thorough-going success especially in fruit display.

Russel T. Robinson of Marin County has been named farm adviser of Alameda County to succeed Mark Lee.

Shipment of 27,000 bags of paddy rice was made last week from the Sperry mills at Biggs, Butte County.

Napa County schools will have no "prune vacation" this year because there is ample supply of other labor.

Short courses in land colonization and settlement are announced by the University of California September 5-7.

County Horticultural Commissicner Flournoy of Tehama County says that he has found a way of controlling citrus blast.

A brisk demand for rice is reported from Willows, Glenn County. "After-rain" rice is being sold at 75 cents a sack; "pre-rain," $2.10.

The Sutter County farm bureau will hold a hog auction at Yuba City, October 18, in which it is expected that Yuba County will join.

Several shipments of eggs have been made from Petaluma to New York by way of the canal by the Poultry Producers of Central California.

The Pacific Rice Growers Association held get-together meetings August 15, Biggs; 16, Franklin Corners, Sutter County; 17, Willows, Glenn County; 18, Colusa.

The Eden Township Farm Products show at Hayward recorded an attendance of 30,000 for the four days of the show. The management is planning to make it a county fair next year and claim state aid.

Local meetings of the Tehama County farm bureau: Squaw Hill, September 12; Dairyville, 14; Corning, 15; Bend, 16; Liberal, 22; Bowman, 24; Los Molinos, 26. Directors meeting, Red Bluff, 24, 10:30 a. m.

At the recent annual meeting of the Pacific Coast Association of Nurserymen at Seattle H. E. Weed of Beaverton, Washington, was elected president. C. A. Tonneson of Burton, Washington, is executive secretary.

Browns Valley farm bureau fair, Yuba County, was held the last of August in a grove on Dry Creek. No buildings were provided to house exhibits but none were needed say the visitors as the grove was ample shade and shelter.

Central California

Kings County fair receives $817.50 from the state.

San Joaquin County fair will be held at Stockton, September 12-17.

Tulare Livestock and Agricultural Show, Tulare, September 13-17.

The Associated Raisin Company has announced prices on the new crop.

Hog auction sales in Kern County at Wasco, September 3; Bakersfield, 17; McFarland, 30.

Calf club exhibitors at the Patterson fair received awards of $10, $8 and $7 from the American Jersey Cattle Club.

Donald M. Smith has been appointed assistant county agent in Stanislaus. He will have special charge of livestock work.

A correspondence course on peach culture will soon be ready for sending out from the college of agriculture at Berkeley.

Prices for figs delivered at the Peach Growers Cannery at Turlock have been raised to six cents for first quality and four cents for seconds.

Many Turlock growers who are discouraged with this season's returns from cantaloupes are talking of putting in cucumbers next year.

Export to English markets of Fresno raisins has recommenced, more than 1,200 tons of Thompson Seedless being shipped in the last month.

Santa Cruz supervisors are taking up the case of fruit truckmen who are hauling heavy loads to Watsonville warehouses to the damage of the roads.

The Associated Raisin Company estimates that the raisin crop of the state will fall 40 per cent short of normal production. Severe April frosts are chiefly responsible.

Two of the large pumping plants of the Lindsay-Strathmore district north of Exeter, Tulare County, were burned last week. One hundred acres of pasture was destroyed in the fire.

Saturday, August 27, was Governor's Day at the annual Patterson fair, Stanislaus County, and the biggest day in point of attendance of all the fair days. The livestock parade was the main feature of the day.

Season tickets costing $2.50 and entitling the holder to admission every day are an innovation of this year's Fresno district fair, September 26 to October 1. These tickets will admit to the 150 mile auto classic race on Saturday with the additional payment only of the war tax.

Farm center meetings in Stanislaus County at Wood Colony, September 19; Keyes, 19; Sylvan-Claus, 28; Patterson, 22; Ceres, 22; Fairview, 16; Laurel Lodge, 26; Mt. View, 2; Hughson, 5; Jennings, 7; Tegner, 9; Denair, 12; Mitchell, 13; Valley Home, 14; Hickman-Waterford, 21.

The cut of one-third in raisin prices effective October 1, has resulted in sales of 16,000 tons, valued at approximately $3,000,000. Shipment of these will be made by 11 special trains, five of which have left Fresno for eastern points. This takes care of one-third of the 1920 holdover crop, while the success of the five cent package campaign is expected to make a considerable hole in the remainder.

Southern California

Carpinteria bean growers have commenced harvesting.

The Yucaipa Apple Growers Association expects to pack over 100,000 boxes of apples.

The park board of Pasadena has appropriated $250 for poisoning ants in the city parks.

The Ventura County chamber of commerce is embarking on an extensive publicity program.

Walnut orchards at Goleta, Santa Barbara County, have been in serious danger from forest fires.

The dove season opened the first of the month. Hunters are allowed 15 birds for one day's shoot.

The opening of the new highway has made the Salton Sea accessible to bathers who are enjoying salty dips.

The La Habra farm bureau held a meeting the first day of September to discuss possibilities of securing an insectary.

A recent meeting of the Associated Chambers of Commerce at Santa Ana, Orange County, criticised the county supervisors because of road work.

The Associated Chambers of Commerce of Imperial Valley are planning to attend Coachella Valley's date festival in an "automobile caravan."

The Festival of the Moon held by the Tejunga Valley in Los Angeles County was held the first five days of September with a big attendance.

The Anaheim Citrus Fruit Association will hold a meeting September 16 to act upon proposal to increase its capital stock from $50,000 to $200,000.

Six carloads of Muscat grapes were shipped from Rialto vineyards one day last week. It is expected that 150 carloads will be shipped out this season.

The El Cajon district of San Diego County shipped its first grapes east on August 16. The crop will be about 60 per cent of last year's crop of 154 cars.

Horticultural Inspector Hodges of Covina is experimenting in excluding ants from citrus trees in order to protect parasites brought in to subdue scale.

The San Bernardino County farm bureau has been working to secure reduction in power rates for growers and packing houses. The entire county will be canvassed.

It is proposed to open up the Santa Barbara national forest as a resort to be known as Frazier Mountain Summer Recreation Ground. The proposed park will take in 25 square miles.

Because of some complaints of increase in rates and discontinuance of service the railroad commission has ordered investigation of service of the Whittier Water Company, California Domestic Water Company and La Habra Water Company.

The fall semester of the southern branch of the University of California at Los Angeles opens September 13; registration of new students, September 8 and 10; former students, September 12. In addition to the work of the junior college and the course leading to elementary teachers' and special certificates four year courses for teachers are now being established.

The Coast and General

Washington's peach crop is estimated at 25,000 tons; pears, 30,000.

A good roads association has been formed in Coos County, Oregon.

The annual hog and dairy show at Banks, Oregon, will be held, October 6-8.

Colorado reports demand for feeder lambs from Eastern states.

Grain sorghums in Arizona have been greatly benefited by recent rains.

Wireless telephones are used by the United States forest service in Idaho reserves.

The station of the weather bureau at Phoenix reports abundance of water on ranges.

The Oregon prune growers are placing on the market a prune bar similar to the fig bar.

Spokane, Washington, Valley orchardists expect to ship about 1,400 carloads of apples.

Sunflowers are popular for silage with dairy farmers of Wallowa County, Oregon. A thousand acres have been planted to this crop this year.

Recent heavy showers in Arizona have removed fears of grass shortage. It is said that the range in many open sections resembles a meadow.

Clarke County, Washington, potato growers have formed a cooperative association and will market through the Washington Growers' Packing Corporation at Seattle.

More than 100 Lake County, Oregon, ranchers and stockmen attended the second annual field demonstration recently. Twenty-eight cars made tour of fields examined.

The largest prune crop in years is predicted for the Walla Walla Valley of Washington, approximately 1,500 carloads. Many growers have contracted to sell at $50 a ton.

Nut bearing trees for highway planting are recommended by the Good Roads Association of Michigan, especially the black walnut because of its timber value and rapid growth.

Apple growers of the Wenatchee Valley, Washington, have a cooperative organization with a membership of 500 growers controlling 4,000 to 5,000 carloads of fruit. It markets under the "Jim Hill" brand.

J. M. Rodgers of Wellington, Colorado, has been elected president of the state farm bureau to succeed W. G. Jamison, whose duties as member of the legislative committee of the American Federation require his presence in Washington, D. C.

Director Fawcett of the wool marketing department of the American Farm Bureau says that 2,000,000 pounds of pooled wool moved the last two weeks of August. Fine and medium staple brought 28-30 cents; half-blood staple, 26-28 cents; three-eighths staple, 23-25 cents; quarter-blood staple, 21-23 cents; low quarter, 16-18 cents; braid, 12-14 cents.

According to a recent decision of the Washington Growers' Packing Corporation, an organization which represents 90 per cent of the Clarke County prune acreage, pickers will be paid 6 cents per box, with a 2-cent bonus for staying through the picking season. Kiln keepers will be paid $5 a day while common labor will receive $3 per day. Ten dollars will be charged for drying, which is just half of what it was last year.

Pruning Citrus

By R. W. Hodgson

THERE is probably no horticultural operation about which more dogmatic advice has been given than pruning. Among growers as well as investigators there is still much diversity of opinion, and every degree of severity in pruning practice from no pruning whatever to absolute butchery is still to be found in the citrus orchards of California. This situation is due primarily to the fact that fundamental investigations of pruning have only been undertaken during recent years and the principles involved are not yet sufficiently clear with most fruits, and particularly the evergreens, to make it possible to codify them, much less to originate systems of pruning based upon them. It is also attributable to the rule-of-thumb methods which have been used so largely during the past half century in the pruning of all classes of fruits, without any inquiry as to the reasons why various cuts were made and the responses which followed the treatments given. There are a few general principles which the grower would do well to bear in mind in regulating pruning practice. These are principles of plant physiology and apply to all trees and plants. The details of application naturally vary for different plants and with evergreens, such as citrus, are not the same as with deciduous.

General Considerations

The greater part of the plant is composed of carbon which is secured from the carbon dioxide of the atmosphere taken in through the leaves, where in combination with water absorbed by the roots, in the presence of sunlight, starches and sugars are formed, these furnishing the main source of food for the elaboration of the living substance. If the plant is to grow normally and vigorously there must be a large actively functioning leaf surface. This is the reason why severe pruning, which accomplishes too great a reduction of leaf surface, is especially objectionable to evergreen trees. The result is starvation. Citrus growers are now generally agreed that it is easier to starve a tree by severe pruning than by failure to furnish fertilizers.

The most recent researches on plant nutrition indicate that there is an important relationship between nitrogen intake through the root system and carbon intake through the leaves, in the determination of the amount of fruit borne by the trees. If the nitrogen intake is below the normal the trees will be found to be unhealthy and unfruitful. If the nitrogen intake is abnormally large, vegetative growth and again unfruitfulness is the result. If the carbon intake is low vegetative growth and unfruitfulness result, while if the carbon intake is large, other things being equal, the plant is found to be healthy and fruitful. Pruning therefore partakes of the nature of a change of environment insofar as it regulates the carbon-nitrogen ratio.

The present attitude of the best growers toward the pruning of citrus trees may be expressed in the statement recently made by one of our most prominent citrus experts, "I prune my trees with hesitancy and regret." This should not be construed, however, to mean that citrus trees do not profit from pruning. We hear little of the "Let Nature have her way" sentiment in these days of scientific horticulture. While our old sweet seedlings may have developed into fairly satisfactory trees with but little attention, our budded varieties most certainly require pruning for the production of maximum crops.

In California fruit trees are naturally fruitful, due to the large amount of sunlight which they receive, tending to the production of abnormally large quantities of carbohydrates. The unusual prevalence of bright sunshine, with our tropical evergreens is not an unmixed blessing. In an effort to protect themselves our trees have a tendency to grow very thick and dense. In so doing they exclude sunlight from the interior at the expense of fruit bearing. It must be remembered that the leaves manufacture carbohydrates only in the presence of sunshine.

Pruning for Production

Upper: Upright shoots on good branch, "riders;" mechanically weak and undesirable. Navel orange.
Middle: This vigorous upright has the key to the pantry. It should be taken out bodily. Navel orange.
Lower: Headed back lemon tree one year from pruning.

Practical citrus growers agree on about three reasons why citrus trees require pruning. Under favorable soil conditions, with adequate irrigation, citrus trees if unpruned are likely to grow too large for economical orchard handling. Fumigation costs are among the most important factors in costs of producing citrus fruits. It costs a great deal more to fumigate a large tree than a small one. And by proper pruning it is possible for the medium sized pruned tree to carry as much fruit as the large unpruned tree. The same applies to spraying. In practically all citrus districts the trees require frequent spraying and annual or semi-annual fumigation. It should also be borne in mind that the picking of citrus fruits is an expensive operation since the fruit must be clipped, in the case of lemons using a ring. It is therefore desirable to grow trees from which the fruit can be harvested without too great expense. All of which renders it desirable to have medium sized rather than large trees.

If citrus trees are unpruned it is well known that they become so dense as to cease carrying fruit on the interior. Interior fruit is usually of better quality than exterior fruit so that it is of importance to secure as large a crop on interior fruiting wood as possible. The growth of healthy fruiting wood in the interior of citrus trees may be secured only by judicious pruning whereby the trees are opened up sufficiently to permit light to enter.

Normal citrus trees may and frequently do produce vegetative and fruiting growth. In the former class are sucker wood, white wood, etc., vigorous and sometimes not very fruitful, almost certain to gain the ascendancy in competition with the slower growing true fruit wood. They are weak mechanically since they are of rapid growth, long and spindling, and made up of large cells with thin cell walls. Altogether these types of growth must be considered as undesirable.

The injurious results of severe pruning of citrus trees have been emphasized by a number of our best informed growers and have been mentioned previously. It has been rather conclusively shown that severe pruning of normal, healthy citrus trees is repressive, resulting in less fruit and smaller and weaker trees than where the trees are not pruned severely. There are instances, however, where the wood is old and decadent, where severe pruning is not without its beneficial effects. Such cases, however, are for the expert to judge and are by no means the rule.

One other practice, more or less common in the pruning of citrus trees in the past, and which has been shown to be injurious, is the heading back or "stubbing." Heading back results in accentuating length growth, the three or four buds below the cut being forced into very vigorous vegetative growth. This is wasteful of the energies of the trees and results in growth which is mechanically weak and has to be cut out later.

The object, then, in pruning citrus trees should be to prevent them from becoming unduly large, to keep out all undesirable vegetative and mechanically weak types of growth, and to maintain the trees in a reasonably open condition so as to encourage interior fruiting.

The Young Tree

The first requirement is to head the trees correctly. Unfortunately, the grower usually has little to say in regard to this matter, since the trees come from the nursery with the heads already established. In all too many instances but little attention has been given to the formation of the main framework. Usually the scaffold branches are allowed to come out at approximately the same point. When trees of this sort reach mature age some of the branches are certain to be caused to decline on account of crowding. The usual height to which citrus trees are headed is from 28 to 32 inches. It is desirable to have the main framework branches distributed over the upper 12 to 15 inches. Whenever two branches grow out from one bud one of them should always be removed. All shoots which put out from the lower 15 or 20 inches should also be removed.

After planting the main object is to encourage the young tree to take hold quickly and to develop a large bearing surface as quickly as possible To accomplish this end it is necessary to have a large leaf surface, for the trunk and root system are nourished by the leaves. It is therefore clearly inadvisable to severely prune young citrus trees and ordinarily the only treatment necessary is that of rubbing off suckers or water sprouts from the trunks of the trees and cutting out specially vigorous upright shoots which seem likely to dominate the rest of the branches. It is best to take such branches out before they have reached large size, so that during the first year or two it is desirable to go over the trees at least every two months.

All the pruning the trees require during the first few years may be done with the thumb and first finger. If this system is followed the trees should have reached good size and be ready to come into fairly good bearing by the fourth year. From this time on a little more pruning is required since the trees have now reached sufficient size to have considerable interior bearing surface which must be kept fruiting by opening up the outer shell of foliage.

The Bearing Tree

The navel orange and grapefruit are similar in their habits of growth and require about the same pruning treatment. They are inclined to be ball shaped and very dense in growth. At least once a year they should be gone over and the outer shell of foliage either thinned uniformly throughout its entire surface or holes made here and there.

Growers vary in their opinions concerning the proper method of permitting light to enter but all agree that light must enter if fruit is to be borne there. All specially vigorous upright shoots should be carefully removed as these are undesirable and for the first few months of their life are truly parasitic.

The Valencia orange and lemon are somewhat different in habit of growth from the navel orange and grapefruit. They are much more upright and of a more vigorous nature, hence they require somewhat more pruning in order to keep in shape. The Valencia is so vigorous a grower that unless

(Continued on Page 258.)

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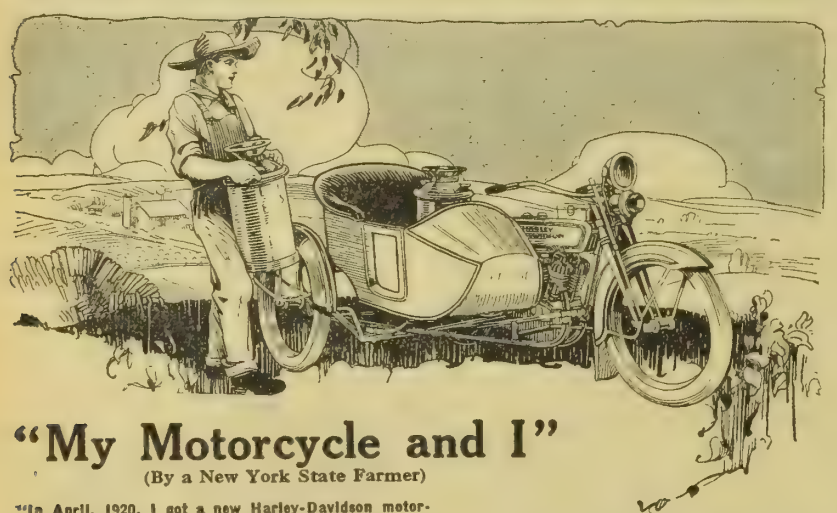

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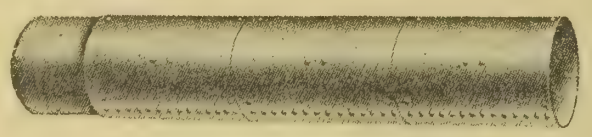

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PRUNING CITRUS

(Continued from Page 257)

carefully watched during the first few years it is almost certain to develop a framework which is decidedly weak and which under the heavy fruiting which is characteristic of this variety requires either propping or bracing by wires. The prevalent mistake made in handling the Valencia is in permitting too many framework branches to develop, the result being crowding and long weak shoots which, after they elongate and carry fruit on the ends, are subject to much breakage. Not more than six main framework branches should be allowed to develop the head of the trees. To secure this result rigorous thinning will be necessary during the early years.

This same situation obtains with the lemon. In the past it has been the custom to prune lemons much more severely than other citrus trees and there have grown up a large number of so-called methods of lemon pruning all of which may be reduced to about three systems.

The first, and now the most common and also the most in accord with our knowledge of the physiology of the citrus trees, is the so-called Englehart system. In this system all vigorous types of growth are eliminated and the tree formed of the slow growing, rather pendant, small leaved fruiting wood. This system requires a minimum of pruning and since the leaf surface is not reduced to any appreciable extent it encourages maximum fruiting. It is essentially the system outlined above under general principles.

Another system much used in the past but now losing ground is the so-called Fleet system. This is a combination of heading back vigorous upright growth for the formation of framework branches, together with selection of the best type of growth produced as a result of the heading back. This system, if rigidly followed, will produce good trees which bear satisfactory crops. It is a costly system to practice, however, as it requires that the trees be pruned regularly twice a year. It is also wasteful of the energies of the trees since vigorous upright growth is encouraged only to be cut off at the next pruning.

The third system has no particular name but in reality consists of no pruning at all except cutting off low hanging branches when they begin to get in the way in cultivation. As mentioned above this system produces very large trees of very loose and weak framework formation, and is not a reasonable system for California horticulturists to follow in the light of our information concerning the needs for pruning citrus trees.

It formerly was the custom of many lemon growers to arbitrarily decide upon a certain height above which the tops of the trees were sheared off exactly as a hedge is trimmed. This system, being a purely mechanical one, as might be expected proved unsatisfactory. It is now practically abandoned in all districts. The result of this system was to encourage a very vigorous, dense growth on the tops of the trees at the expense of fruit farther down.

Bud Selection and Pruning

In a very important sense the pruning of citrus trees should begin with the selection of buds for propagation. It is well recognized that the best strains of our standard varieties are those which require the least pruning. It will undoubtedly be true that as our orchards are topworked to the better strains and as the new orchards planted with trees propagated from selected buds come into bearing, the pruning problem will decrease in importance.

These selected strains do not have so great a tendency to produce coarse, vegetative growths as do the poorer strains which are now all too prevalent. It is therefore of the utmost importance, not only from the standpoint of yield, but as well from the point of view of reducing pruning to a minimum, for growers to insist on the planting of trees propagated from the very best selected buds.

Disposition of Prunings

If prunings are to be hauled out and burned they should be removed to some distance. Citrus trees are extremely susceptible to injury from the heat of fires. In a country such as California, where humus forming materials are scarce, it is wasteful to burn prunings. They should by all means be chopped up fine and plowed in. On many of the large ranches power choppers run by gasoline engines are drawn through the orchards, the prunings being chopped up where they are, followed by plowing under.

Pruning Tools

The saw in most general use by citrus pruners is one which originated in Japan and is a pull saw with a blade 8 to 12 inches long, the cutting edge of which has a decided curve to it. There are many types of this saw on the market at the present time, of which the Tyler and Bonita are perhaps the best. One of the best saws for use in citrus orchards is known as the California Pruning Saw with reversible blade.

A satisfactory outfit for the citrus tree pruner may be enumerated as follows:

1. A short, light stepladder.
2. One pair strong leather gloves.
3. One pair hand shears (Reiser pattern preferred).
4. One Tyler pruning saw.
5. One California pruning saw (six extra blades).
6. One pair lopping shears with riveted wooden handles.
7. Bucket of wound compound with brush for dressing large wounds.

Wounds and Dressings

All large limbs should be sawed off close to the trunk of the mother limb in such a way that new bark will grow over the cut surface from all directions. Stubs are a source of danger to the tree and reflect discredit upon the orchardist. In moist regions near the coast germs of decay are apt to gain entrance through wounds incident to pruning, and such decay extending into the heart of the tree soon brings about its decline. In the dry interior valleys the danger of decay is not so great, but wounds tend to dry out with constant checking of the wood. It is therefore wise, in order to encourage rapid healing over of the wounds, to protect all cut surfaces greater than two inches in diameter with some antiseptic dressing which will not only prevent decay but keep the wood from drying out.

The requirements for a satisfactory dressing are several. It must be comparatively cheap. It must also be rather permanent, at least not losing its effectiveness within a few weeks or months. Such a dressing must remain on the surface and not penetrate to any marked extent, and under our particular climatic conditions must have considerable elasticity in order to take care of large fluctuations in atmospheric temperature. Such substances as whitewash, lead paints, and varnishes or shellacs do not satisfactorily meet these requirements, since they soon dry out and lose their protective qualities. Grafting wax, while excellent in many respects, at present prices for beeswax is expensive.

Probably the most promising class of available materials is of those with asphaltum base. Asphaltum roof paint has been used by some with good results. Grade D asphaltum, which is a liquid form, is popular among some growers. A liquid preparation made by dissolving asphaltum in gasoline or distillate is recommended by certain authorities. Boiled coal tar has been used somewhat in the past and there are a number of commercial preparations on the market used to a certain extent. Probably the best dressing for the purpose is still to be worked out. There is much need of further study along this line.

The important thing, however, is for citrus growers to recognize the importance of treating all wounds of an inch or more in diameter and to make certain that all such wounds are well coated with some dressing which is renewed occasionally as needed, as determined by frequent inspection.

Railroad men have estimated that it will require 30,000 cars to handle crops of the Walla Walla Valley this season. 27,000 cars will be required for the wheat crop; 1,600 for the apples.

The pear crop of the Hood River district of Washington is estimated at 110 to 120 cars.

FRESH FIG SHIPMENT

Fig growers are much encouraged over successful shipment and sale of fresh figs in Eastern cities. The Fig and Olive Journal comments: "It is a little early yet to attempt to measure the effect of these first tests on the fig industry. It would appear at this time as though the fresh shipping of figs might rapidly develop into an important branch of the fig business, in which event the grower will have a much wider outlet for his fruit than before and correspondingly a more profitable market. With the fresh fig eagerly sought after in the East at remunerative prices to the grower, the great plantings of figs made in the past four years in the San Joaquin Valley will quickly come to have an established value, and a high one at that."

The new Sykes paper pack has been a very important factor in the success of the shipments and the California Peach and Fig Growers has this season held a number of demonstrations of the new pack.

VEGETABLE AND FRUIT SHIPPING SCHEDULES

Of general interest to all shippers of perishable products are the following schedules of fast fruit trains on the Southern Pacific to eastern markets:

Vegetable and green fruit trains from Roseville to Chicago through Ogden, 154 hours; Brawley melon trains, 153 hours to Chicago, 50 to El Paso; Colton vegetables, deciduous fruits from Southern California, 154 hours to Chicago, 53 hours to El Paso; Turlock melons, 166 hours to Chicago; Yuma vegetables to Chicago 141 hours (handling Imperial Valley and Coachella Valley vegetables and fruit from the San Diego district); Oregon fruit from Roseburg to Roseville, California, 48 hours. (Oregon cars re-iced at Roseville and placed in the fruit block which moves every few hours.)

PROFIT MAKING GRAPES

The Coachella Valley is each year adding fresh proof that she produces early table grapes of exceptionally fine quality and profit. Amongst the favorites are the Malaga and Dattier. One of the small vineyards on the place of Messrs. Cardwell and Petty, southeast of Coachella, made sales from July 11 to July 18. On July 11, 91 crates of Malagas were sold in New York, bringing to the grower $473.50. Freight, packing house charges and commissions amounted to $207.47, leaving net $266.03. On the 12th shipments of Dattiers and Malagas totaling 50 crates netted $115.16. A 94 crate shipment on July 18 netted above all packing and shipping expense $174.02. Another shipment of Dattier netted $60.05 for 36 crates.

Mr. Petty summarizes some of the facts connected with these shipments, which were made through cooperative marketing associations, as follows: 237 crates marketed through association, average $2.35 per crate, net returns 9.8 cents per pound (24 pounds in crate. 237 crates shipped east, 5,688 pounds, cost for packing, freight, refrigeration and commissions $510.72, nearly 9 cents per pound. 273 crates grown on 790 vines, five years old. Vines set 8 by 12, 453 vines per acre. 790 vines is almost 1¾ acres. $618.93 net return from 1¾ acres is $353 per acre.

TULARE CITRUS PROBLEMS DISCUSSED

Friday, August 26, was a very profitable day for the citrus growers of Tulare County. The many problems incident to producing fruit on the so-called "dry bog" adobe soils were discussed from every angle by the two men who know most regarding these problems. Prof. R. S. Vaile, of the citrus experiment station at Riverside, and Gordon Surr, who has spent the past two years in Tulare County studying conditions there first hand. The meeting took the form of a traveling conference, the growers first meeting the university men and County Farm Adviser Connor at Lemon Cove where fertilization and irrigation experiments have been under way for two seasons. Practically every feasible method of handling a grove has been tried out on this block of trees, and some of the results were readily apparent to every one present.

After covering each of the plots of this grove carefully the party journeyed to the Captain Anderson grove east of Lindsay where Mr. Surr has been making careful moisture determinations in cover cropped and clean cultivated blocks of the same grove.

In the afternon the party again met, this time in the Plano district south of Porterville, and heard an interesting field talk on the work of covering trees with muslin to determine effect on the June drop. It is interesting to note that the covering apparently had no effect on June drop but did practically eliminate thrips injury. On the same grove careful irrigation records have been kept and various methods of fertilization tried out. At eight o'clock a meeting was held in the new Strathmore union high school. This meeting was so well attended that the regular assembly hall was crowded and it was found necessary to adjourn to the school auditorium.

Two papers were given at this meeting, one by Mr. Surr which discussed the question of excessive lime in the "dry bog" soils of Tulare County and its effect on citrus trees. Professor Vaile's paper covered in detail the work of the two seasons in Tulare County, giving valuable suggestions to growers as to how they might get their soils in such shape that they will permit normal moisture penetration and aeration.

SULPHUR TO SAVE RAIN DAMAGED PRUNES

Professors Cruess and Christie of the state college of agriculture are continuing this season their experiments to determine the best methods of preventing rain damage of prunes. They have found that partially dried prunes can be saved by being placed in fumes of burning sulphur in ordinary sulphuring boxes for about one hour while freshly dipped prunes require only one-half hour of sulphuring to prevent moulding during the rainy weather.

CORRESPONDENCE COURSES

Correspondence courses on citrus fruits, semi-tropical fruits and others are now being offered by the college of agriculture. All these courses are described in Circular No. 113, which may be obtained from Division of Agricultural Education, College of Agriculture, Berkeley.

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Deciduous

Citrus

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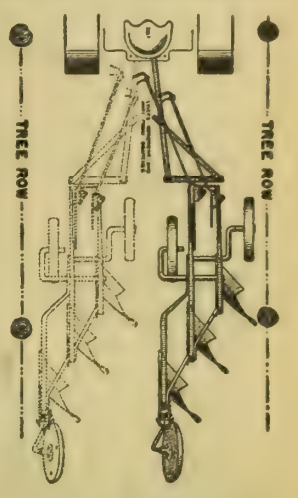

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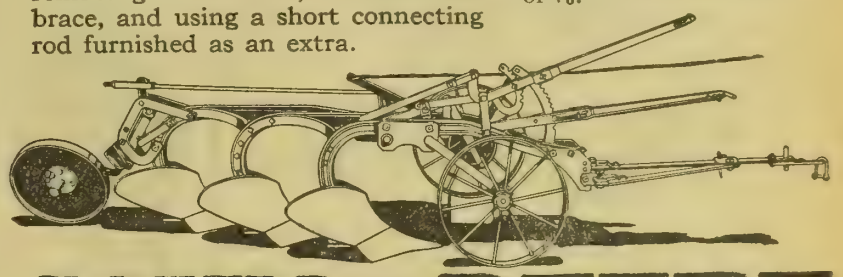

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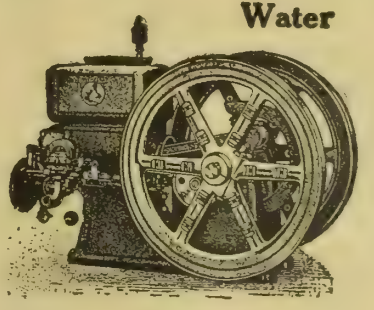

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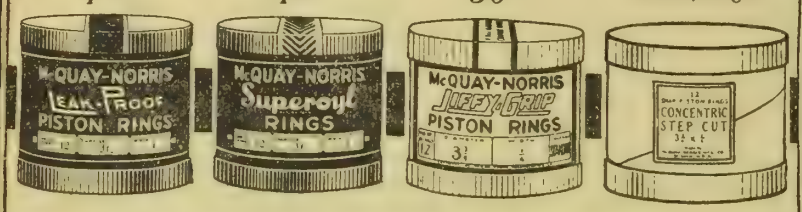

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have saved crops all over the United States. Temperatures of 16° successfully raised above danger point. "Outside temperature was 26°, with Scheu Heaters raised to 40°. Crop saved, 100%," says Ernest A. Tonk, apple grower of Cashmere, Washington.

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Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Property Restrictions

The deed to my property contains restrictions that if a building is erected within ten feet of the boundary or liquor sold on the property it will revert to the grantor. Is this binding and can I sell property without such clause in the deed?—Subscriber, Live Oak.

Such restrictions are entirely valid if coupled with the proper provisions made in the deed as to time of duration and provisions for the re-entry of the grantor. They constitute an encumbrance upon the property, but a deed of the grantee holding under such restrictions may merely recite that property is subject to restrictions and reservations of record.

Release from Trust

A conveyance contains a statement that the described real property is released from the terms of the trust deed made by first party to second party for a third party and that said property is reconveyed to first party, release being without prejudice to the security afforded by the real property described by the trust deed and on the release. What does this mean?—Subscriber, Live Oak.

The method of securing indebtedness by means of a trust deed is somewhat different from that of mortgage; in a trust deed the real property is deeded or conveyed to a trustee to hold in trust for the performance of the matters recited in the deed of trust by the party who conveys the property, who is termed the trustor. In case the party does not perform his agreements, such as in the usual case, the payment of the moneys recited in the note, for which the trust deed is secured, then the trustee executes the trust by making sale of the property. If the trustor does perform, then the trustee conveys the property described in the trust deed back to the trustor. In the above stated case, evidently a portion of the property conveyed was reconveyed under a provision that upon the payment of a certain amount some particular described lot would be reconveyed, leaving other property subject to the trust deed.

Hen House Near Dwelling

How near a dwelling house may one build a hen house? How many feet from the road is he required to build it?—Subscriber, San Gabriel.

There is no general law covering the above matters. They may, however, he controlled by city ordinances.

Wife's Checking Account

If a wife has no checking account in her own name, should she have the privilege of signing her husband's name to checks?—Subscriber.

A question such as the above is not within the province of this department as there is no law concerning such matters of domestic arrangement.

Wife Liable

In 1905 I gave a note for two years with my husband. He represented to me that the money was to be used for the purchase of a home and the property purchased was to secure payment of the note. He signed a paper to this effect to the lender. He never purchased the lot and took the money thus obtained, together with other moneys, and went away. Later I secured a divorce. I have been lately notified that suit will be brought against me on the note. Can collection be made?—Subscriber, San Jose.

Whatever the fraud from a legal standpoint it would be available only to the lender, and it undoubtedly would be true that the wife in the above case would be obligated to pay the note. However, it appears that the note matured in 1907. The statute of limitations would run out in 1911 so that the note is undoubtedly barred, and if action was commenced and the statute of limitations were pleaded, you would be exempted from any payment.

Support of Step Children

I was a widower with two children and married a widow with two children. Since marriage my wife's two children have inherited an income of $44 each per month. Can I be forced to pay for the support of these children?—Subscriber, Live Oak.

You are not legally liable for the support of these children even if they had no separate income. Having such income, it would seem that you are neither legally nor morally liable to them.

Farm Name

What is necessary to do to secure the exclusive use of a fictitious farm name? If, having obtained such name, I should use this fictitious farm name in making out checks, would it be construed to be doing business under fictitious name?—Subscriber, Los Angeles.

There are several means for the registration of such names, one of the least expensive of which is that provision set forth for the registration of farm, ranch and villa names. Under the act any farm, ranch or villa owner may upon payment of one dollar to the secretary of state have the name of his farm, ranch or villa registered in the register which the secretary of state shall keep for such purpose and shall be furnished with a certificate, setting forth the name and location of the farm and name of the owner. Any other person who shall use such registered name is guilty of a misdemeanor. This act is probably in the nature of a trade-mark, which can be placed upon the products of the ranch. It hardly seems that it would entitle a person to actually conduct business under the fictitious farm name. In order to conduct business under the fictitious farm name, a party must file with the county clerk a certificate, stating his name in full and place of residence and publish said certificate once a week for four weeks in a newspaper published in the county. The only penalty for failing to file and publish this certificate is that any person doing business under such fictitious farm name who has not filed the certificate can maintain no action upon the contract made or transaction had under the fictitious name. Any party desiring to avail himself of the registration of the secretary of state in making any contract or transaction could make such in his own name. He could then bring action upon the contract. Thus it has been held that a party who made a contract in a fictitious name, signing his own name as proprietor, was entitled to maintain action.

FAIRY TALES

I smiled at little Johnny,
Who fairy tales believes,
And at his childish fancy
Which such a tale deceives.

And then an oil stock salesman
Came 'round the other day,
And when he was departing
He had my six months' pay.

—A. F. C.

Experience keeps a dear school, but fools will learn in no other.—Poor Richard's Almanac.

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Dividing Lilacs

When is the best time to separate lilac shoots from the main stalk for transplanting? Can a five year old rose bush be moved successfully? When is the best time?—Subscriber, Burbank.

Midwinter, or any time after lilac bush has become thoroughly dormant, will do to divide. Do not leave the job too late for sap begins to run very early in lilacs and bleeding should be avoided. A five year old rose bush may easily be balled and moved at any time except during the hottest weather or period of active growth. Stop watering it the first of August and move immediately after the first rain of autumn.

Cherries at Sunland

Kindly advise me through the Cultivator if Royal Anne and Black Tartarian cherries will grow in Sunland or Tejunga which is located about 15 or 17 miles from Los Angeles.—Subscriber, Yucaipa.

They will grow and make beautiful trees but we question very much as to any crop. Cherries are, as a rule, not a success under conditions which obtain in that portion of Los Angeles County.

Time of Freshening

We have a heifer that was bred March 27, 1921, and we would like to know when she will drop the calf.—Subscriber, Riverside.

The period with the cow is 283 days, which in this case would make the date of the cow's freshening January 3 Of course there may be slight variation.

Spotted Alfalfa Field

I have a field of young alfalfa that has large spots in it where the soil seems to run together and pack and consequently will not take enough water when irrigated to make it grow. There is very little humus in the soil and of course under these conditions the plants root down very slowly. I would like to know if liming these spots during the winter will tend to open the pores of the soil and relieve this condition without injuring the alfalfa in any way. If so, what kind of lime would be best to apply and how much would be a reasonable amount to use? — Subscriber, San Jacinto.

Here is opportunity to test out the value of dynamite or of subsoiling in opening up these hard spots. Under such conditions a subsoiler would call for a good big tractor or a half dozen draft horses, but we believe the plowing of this soil to a great depth is the only salvation. Then there could be worked into the soil coarse strawy manure through liberal use of disk harrows. Reseeding, say early in October, should be done, and then if March does not show a good stand, disking and giving another good seeding at that time should prove beneficial. Again, it is possible these are alkali spots, but if not too strongly impregnated with alkali the subsoiling will perhaps admit of sufficient drainage that heavy irrigation may carry down the alkali and you may get a good stand. Positive answer can be given in this case only after personal examination of the soil. If it is a case of hard adobe then the application of lime would prove beneficial. It would lighten up the surface soil, but even this may well be used with the heavy application of manure. We would prefer an application of finely pulverized limestone or the decomposed marine lime. An excellent article in both of these forms is now available. In case the spots are impregnated with black alkali an application of half a ton or even a ton per acre of gypsum would prove beneficial.

Garget

What is the cure for garget in a cow's udder?—Subscriber, Ferndale.

When cows are fed highly about calving time the blood is apt to be too thick and rich and that causes congestion of the udder. A week or two before calving a cow should be fed very sparingly and about that time given a dose of salts; that will thin the blood and they very seldom have any udder trouble. When the udder becomes very full of milk even before calving it should be milked out to relieve the pressure and this also will help to prevent congestion or inflammation. Congestion causes the milk to coagulate and come in lumps until the inflammation subsides. This is apt to recur at intervals. The remedy is to thoroughly rub the udder and milk it out clean regularly, also give salts in her feed to thin the blood. Mix three pounds of epsom salts with two pounds of common salt and give her a handful in the feed once a day for a week or two. If the trouble returns give her more salts.

Sunflower Seeds

We have nine acres of sunflowers and would like to know when they should be threshed to get the seeds. Should they be allowed to ripen on the stalk or be cut before ripe and dried?—Old Subscriber, Santa Ana.

Cut just before ripe or the seeds will begin to fall out. Dry for about one week, or until seeds are loose, and then thresh.

Planting Strawberries

I would like to know at what time of year it is best to plant strawberries to be able to get a crop next year. I would also like to know how many crops can be taken profitably from them.—Subscriber, Santa Maria.

If planted in February strawberries will yield a crop the first year from May to July. In frostless sections a few growers withhold water supply in late summer and get a winter crop, a crop wholly dependent upon water supply. Other growers in the same sections report planting in November and getting a light crop in March, this continuing into a normal May-July crop. But early February planting gives a crop as above, May-July. We presume your second question is in regard to years of bearing. This depends almost wholly on treatment given and is largely in the control of the grower.

Avocado Leaves

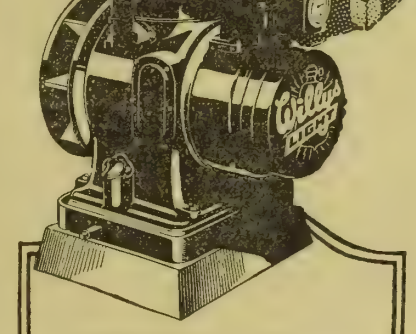
Enclosed are avocado leaves from seedlings eight months old, grown in hothouse and planted out two weeks ago. Please tell me trouble and remedy.—P. W. P., Los Angeles.

A close examination under a microscope failed to reveal anything organic the matter with the leaves. We must conclude the injury was due to sunburn or something wrong in care of plants.

Budding and Grafting

Please tell me when to bud and graft; I know how, but am a recent arrival from Ohio.—F. S. Los Angeles.

Grafting is usually best done in early spring, but in this sub-tropic clime there are many plants and trees that may be grafted at almost any time with a reasonable assurance of success. Budding is done from early spring to June. The latter is a favorite month for spring budding of



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The Willys Light battery is of large capacity (240 ampere hours) assuring long life and abundance of power and light. It consists of sixteen cells of the sealed glass jar type and is ready for use when you receive it.

The air-cooled Willys-Knight engine burns kerosene, gasoline, gas, distillate or alcohol. There are no belts, no chains, no magneto, no radiator, no geared fan, no water pipes, no switchboard, no exposed terminals, no carburetor, no grease cups, no springs, no valves. The Willys Light is semi-automatic—is self-cranking and self-stopping. Has only one place to oil and can be operated by a woman or child.

In all, the Willys Light can be depended upon to furnish constant, ever-ready, efficient power and light service for your farm—any hour or all of the twenty-four in a day.

There is a size to fit your needs—as much or as little power as you may require.

California Farmers, Listen! Willys Light Pays Its Own Way

Time has given the **proof.** Every farm can now have all the advantages of electric light and power, because every farm can now afford Willys Light.

Take the word of men who **know**—who live right in your own state—who speak from **experience.**

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Drums	½ Drums	¼ Drums
90c. Gal.	92c. Gal.	95c. Gal.

Drums Extra

Ask the Nearest Ford Dealer

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citrus trees. October and November is the favored time for fall budding. The buds lie dormant through the rainy season and develop in spring. Again, some trees are budded at almost any time except during the three or four coldest months.

Strawberry Troubles

I am sending specimen of diseased strawberry plant and with it sample of surrounding soil. The plant comes from a field set in March. Until several weeks ago all were in a healthy condition, but then in different parts of the fields plants began to wilt in the crown and dry up. The roots also decayed. I water them twice a month. Could that be too much for them at this time of the year? Or is it the soil condition? — Subscriber, Riverside.

No fungus or other disease is apparent. We believe your plants may be getting too much water, but not often enough, especially if they were planted on ridges. Strawberries need frequent light irrigations. Heavier and less frequent waterings will not suffice. You may have alternate stagnation of water and drouth. Your soil shows considerable alkali and this may be a contributing factor, though strawberries are quite tolerant of alkali. Heavy irrigations but twice a month may bring alkali to the surface each time and allow it to dry about stem of plants.

Quinces

Would you kindly advise me as to cultural requirements of the quince, soil and climatic, and as to its use as root stock for Bartlett pear? Any suggestions would be appreciated.—Subscriber, Mountain View.

Quinces need rich soils, but not wet soils. The trees are known as shallow rooters, therefore cultivate lightly but frequently. Climate is not a serious factor. As the trees are dwarf, 15 feet apart is a good planting distance. The roots are used for dwarfing pears and for this use the Angiers stock is best, though any will do. Quinces are notoriously slow-growing, gnarly trees and one must be patient in caring for them.

Himalaya Blackberry

Regarding the following description of my Himalya berry plants can you inform me why they are not producing satisfactory results? The plants are about seven years old, have been pruned each year at correct time and also have been irrigated sufficiently Up until last year and this season they have had a good crop of berries, and have yet, but the present crop only ripens half way, leaving the top of the berries a bright red, which never ripens, and of course this condition keeps us from being able to sell any of them.—Subscriber, Sunnyvale.

It is quite possible for your berries to come to normal production yet. They should fruit from now to Christmas, or until frosts catch them. We know of nothing that would cause such conditions as you describe. However, as you have had present vines for seven years it may be necessary to root new ones and reset. This we certainly would do if fruit continues to remain immature.

Worms in Cat

Please inform me how to get rid of worms in cats. The worms are a flat white worm about an inch long, and seem to cause the cat considerable annoyance.—Subscriber, Van Nuys.

Have your druggist prepare the following: Pulverized areca nut, 2 drams, made into 12 powders. Give one powder in a little milk every morning. Also get ten 3 grain tablets of santonin and give one every night.

Tb. Testing

To whom shall I apply to have my cow tested for tuberculosis?—Subscriber, Porterville.

Apply to your county veterinarian at Visalia.

Potatoes in the Moon

Is there any truth in the old theory of planting potatoes in the light or dark of the moon?—Subscriber, Porterville.

The department of agriculture has made most careful trials with planting various crops in both the light and dark of the moon and has announced it can determine no material influence of the different phases of the moon on plant life.

Ant Powder Kills Diabrotica

Sometime ago I read a rather despairing reply to some subscriber about killing diabrotica. I've tried lead arsenate, blackleaf 40, etc., with no appreciable results. Only recently they have been swarming to the electric lights and I've used ant powder, and it surely does the work.—Subscriber.

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Yuma . . . Arizona

Household Department

THE FEW

The easy roads are crowded;
And the level roads are jammed;
The pleasant little rivers
With the drifting folk are crammed.
But off yonder where it's rocky,
Where you get a better view,
You will find the ranks are thinning
And the travelers are few.

Where the going's smooth and pleasant
You will always find the throng,
For the many, more's the pity,
Seem to like to drift along.
But the steeps that call for courage
And the task that's hard to do
In the end result in glory
For the never-wavering few.
—Edgar A. Guest.

LUCY BARNHILL'S GARDEN

By J. Grace Walker in Youth's Companion

ABOVE the continuous din of half a dozen sewing machines and the accompanying clatter of tongues a single sentence reached Mrs. Wiersema's ears where she sat making row upon row of beautiful buttonholes—her stint in the day's work of the Ladies' Aid society.

"It seems as if some of us ought to go down there 'fore she goes, and give her a piece of our mind!"

The speaker was Mrs. Ezra Shoemaker in the full tide of righteous indignation. Mrs Wiersema hitched her chair round until she could touch Mrs. Bailey on the shoulder with her thimble.

"Who they talking about, Mary? Who's going, and where they going to?"

"Why, that Lakin girl that lives kitty-corner from you. She's going to leave her father and them two little half brothers and go back to clerk in the store at King's Mills where she was before they come here," explained her friend.

"All 'tis, she hates to do housework," Mrs. Shoemaker went on. "She don't like to scrub floors and such, and she's going to keep her hands out the wash water if she has to leave that poor helpless family to starve to death. I say it's a burnin' shame and ought to not be passed over without her knowing how respectable people feel about it."

"Some folks hates housework worse than others," little Mrs. Thoms admitted. "Now I love it, scrubbin' and all, but I've got a cousin—"

"She'd ought to do her duty by her fam'ly regardless," put in Julia Butler. "Nobody could hate to scrub worse than I do—seems to me I never get done—when 'tain't the kitchen floor it's the baseboard in the dining room or the pantry ceiling—but I'll say this for myself, I do my duty by that house if I am skin and bone in consequence."

"Yes, you do, Julia," half a dozen assured her.

"Course Rhoda Lakin ain't but 17," Mrs. Thoms added after a moment of silence.

Mrs. Shoemaker turned on her a reproving face. "Candace Thoms," she inquired in a loud, scandalized voice, "do you mean to say you think 17's too young to know right from wrong and do it? Why, every lady of us here was a member of the church before we was 16—"

"What I want to know is, who'd she tell?" Mrs. Wiersema put in unexpectedly. "Sounds to me like hearsay. To my knowledge there ain't a soul ever goes there, and she ain't a girl, from her face, to talk much to folks she don't know. I think she's lonesome, that's what I think."

"She's likely to be lonesome the best part of her life if she leaves her plain duty," Mrs. Shoemaker said severely.

"It seems she was next to Elvira Shoemaker in the bank this morning," Mrs. Bailey explained in an undertone to Mrs. Wiersema. "Elvira noticed she'd drawn out all she had in,—$12,—and said, 'You must be goin' into the city to shop with all that.' You know how young folks will speak, even when they don't know each other. And this Rhoda, it seems she threw back her head and says, 'Yes, I am; I'm going away from this town tonight, back to King's Mills. And I wouldn't come back here to live if I was to be drawn by wild horses!' Course Elvira flew home and told her mother, and she thinks the girl ought to be spoken to by a committee."

Mrs. Wiersema's face settled into lines of grim amusement.

"I'm not one to want to serve on that committee," she asserted.

A stir among the ladies round the dining-room door announced the coming of refreshments. Ravelings were brushed to the floor and laps smoothed, preparatory to the passing of napkins and plates. Mrs. Wiersema was thoughtful while she stirred her coffee; she gave but slight attention to the sandwiches and scarcely noticed when she began on Mrs. Postle's velvety angel cake. Mrs. Bailey undertook to rally her and received only a blank eye in return. Finally Mrs. Wiersema glanced down at her plate. "Goodness me, have I eaten my cake?" I've a mind to ask for another piece."

Ten minutes later she made a glass of water an excuse to follow her hostess into the kitchen.

"I know it ain't manners to eat and run, Mrs. Postle," she explained behind the door, "but I've just recollected something I got to tend to, so I'll have to leave early. I'm taking a bundle of work along, and I'll turn it in tomorrow. Can't I go upstairs the back way to get my things? If one goes early, it always sets the rest of 'em off, and it appears to me there's lots of work yet to be done."

"Take buttonholes!" Mrs. Postle urged.

Mrs. Wiersema looked through the trees to the town clock before she turned in at her own back gate. It was barely half past three. In the house she stayed only long enough to search out a seed catalogue that had come the day before. After that she locked the door behind her, stiffened her shoulders and made straight for the Lakin house across the street and up to its screened front door.

Her knock resounded through the house. In the silence that followed she could hear the drip-drip of water from a loose kitchen faucet; but there was no answer. The two little boys were still at school, and if their sister was at home she made no move. But Mrs. Wiersema kept on knocking, and after a while there was the quick sound of an impatient step, and Rhoda Lakin came out of the front bedroom and stood looking through the screen at Mrs. Wiersema out of dark, hostile eyes. The room behind her was spick and span, but in the bedroom beyond dresses hung over a chair, and a suitcase lay in plain sight, spread out on the bed. This Mrs. Wiersema took in with a quick glance before she said:

"I know you're Rhoda Lakin, but I don't suppose you have the ghost of an idea who I am."

The girl only looked coldly at her visitor and said, "No, I don't know you."

"The more shame to me then," said Mrs. Wiersema briskly. "I'm your neighbor across the street in the house with the blinds. Your little brothers play with my Jimmy—Jimmy Wiersema."

The girl continued to look at her with tightened lips.

Mrs. Wiersema's eyes twinkled. "There's one thing I'm not," she declared whimsically. "That's a book agent."

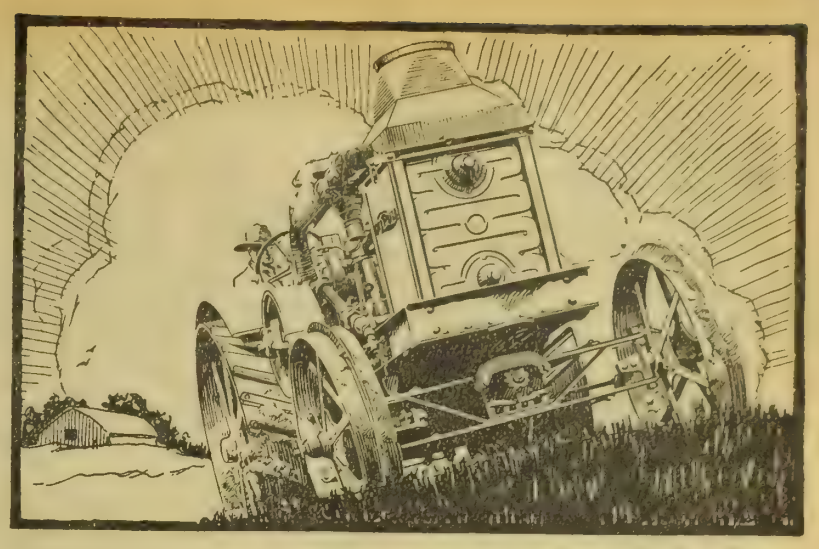
A glimmer passed over the girl's face. "I beg your pardon!" she said dryly. "Of course—come in. I'm rather busy just now, but if there's anything —" She led the way into the front parlor and with an ungracious hand indicated a chair.

"I'm not one to beat about the bush," Mrs. Wiersema began briskly; "so I'll say right out I've come to ask you something and to tell you something. And the first is, Did you ever raise flowers?"

"Not any to speak of," the girl replied coldly. She cast a disinterested eye on the seed catalogue in Mrs. Wiersema's hand. "There's some people flowers won't grow for," she added. Her face fell into bitter lines.

(Continued next week)

"The kiss of the sun for pardon,
The song of the birds for mirth;
One is nearer God's heart in a garden
Than anywhere else on earth."



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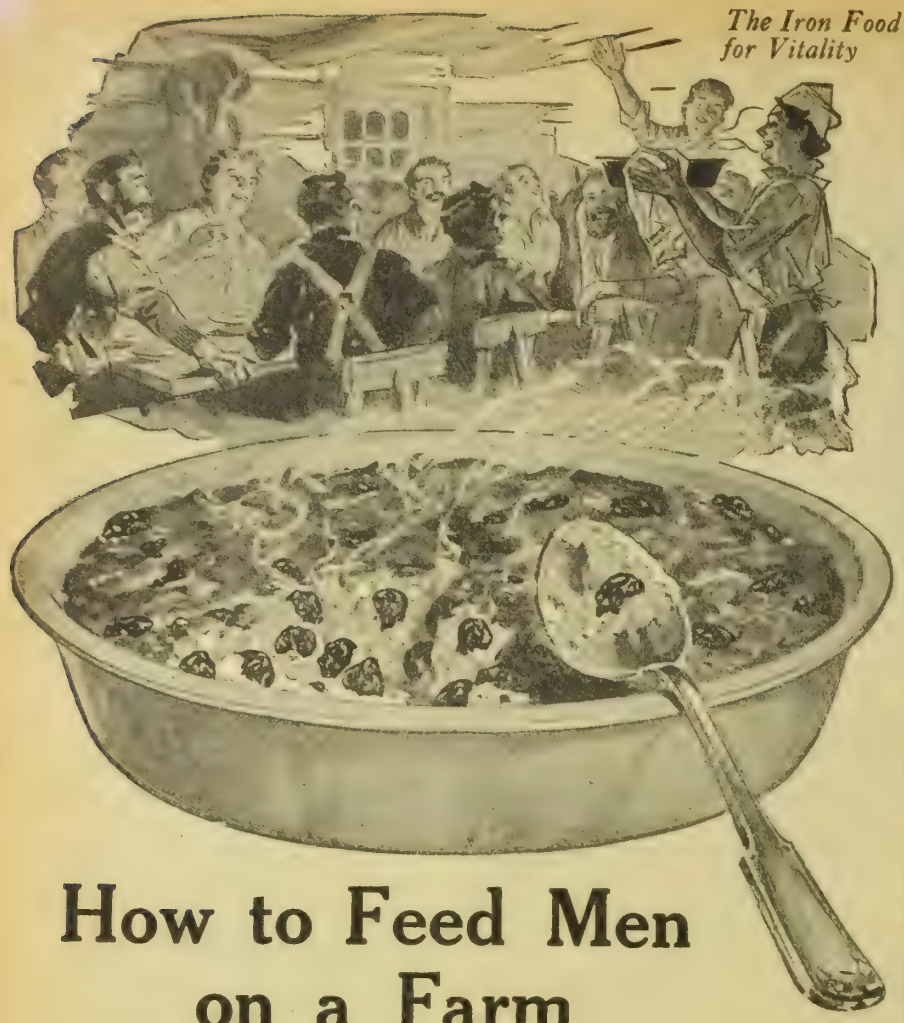

The Iron Food for Vitality

How to Feed Men on a Farm

—*what a cook found out*

A COOK had a problem in left-over bread (as you have, no doubt). This is how he solved it.

He made *raisin*-bread pudding — not plain *bread* pudding, for his men had frowned on that. The raisins made the dish *new* with new appetite appeal. The men ate all and asked for more. Next day they asked for it again. Soon he had to make it *twice a week*. He had to bake bread *extra* for that pudding!

All the men did *better work*. It became less trouble to get help. The outfit was soon *famous* for its food. Men *wanted* to work there. There was *more* efficiency, *greater* output, *less* expense.

All started by a simple recipe for *raisin*-bread pudding!

Sun-Maid Bread Pudding

To a pint of bread crumbs add a well-beaten egg, a cupful of milk, one-third cupful of molasses and 1 cupful of Sun-Maid Seeded Raisins cut in halves. Mix well together, then stir in ½ teaspoon each of cinnamon, salt and soda. Turn into a buttered pudding boiler and cook two hours. Serve with the following sauce: Beat to a cream ½ cupful of butter and gradually beat into it a cupful of sugar. Add any preferred flavoring. When it is smooth and creamy pile it roughly on a pretty dish, place it where it will get cold, and before serving grate over it a little nutmeg.

Raisins are cheaper by 30% than formerly—see that you get plenty in your food.

Try It With Your Men

Try with *your* men. Note the recipe for the pudding printed here. See how quickly you use up left-over bread. Serve it twice a week *beginning now*. See how many ask for second helpings. Learn what this delicious dish can save you in time, trouble and cost.

Raisins add *nutrition* as well as luscious *flavor*—1560 calories of energizing nutriment per pound. So they're food for men who *work* hard—food that *satisfies*.

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Clip the coupon and send to us for our "best hundred raisin recipes" in a valuable FREE BOOK. **Every farm wife needs a book like this.** Shows how to make plain, inexpensive food attractive. The book is free, send for it now.

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Please send me copy of your free book, "Sun-Maid Recipes."

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HOME ECONOMICS FOR A COMMUNITY

By Jean A. Koethen

THE sight of a hundred or more women gathering month after month just to learn more economical ways of running their homes and dressing themselves and their children is one so rare that it is outside the experience of most of us. "The best of it is," declared Mrs. E. E. Dotson, secretary of the home department of the Escondido farm bureau, who told me the story, "that it is all done without tea and wafers. There are no eats in it at all. If it is necessary for us to have an all day meeting we bring our own sandwiches and cookies and put them all together. There are no cliques, no exclusive circles of lunchers. We are all sisters, though not all farmers' wives, and each is for all and all for each. If some woman who is down and out comes with her children to learn to make them dresses and waists out of flour sacks and hats for a few cents apiece we all take hold and don't let go till they are outfitted. The woman who has all the clothes she needs is glad and happy to give her day a month or more to help in the general work, whether it be dressforms or hats."

Sounds Utopian, doesn't it? But it is just what has been happening in Escondido for three years. I heard of it as soon as I got into town, where I had gone to look up poultry matters, and I kept on hearing of it. They are mighty proud of their home department there at Escondido, and no wonder, for it bears the distinction of being the biggest organization of its kind in the United States.

The French have a motto, "Look for the woman" (Cherchez la femme), which they use when anything out of the ordinary happens. As might be expected, there is a woman behind this remarkable home department. "It is simply tragedy," declared Mrs. Dotson, "that Mrs. Matzen is out of town today. She has been president for three years, and it is her vision, her push and energy that are in the main responsible for what has been done. She is tireless in her efforts to bring every woman into the organization and to bring to its monthly meetings the best instruction that can be obtained. A busy woman, running a farm and helping often in her dentist husband's office, she still finds time to give the best of herself to the women of her community."

After meeting Mrs. Dotson I feel sure Mrs. Matzen is not the only enthusiast on community home economics. The willingness with which officers and leaders in the department give their time for being instructed and then passing on the instruction they have reecived to others shows that there are many earnest spirits among them. "We never dare stay away from a meeting," the secretary assured me, "because we know we will miss something good if we do." This is the secret, in part, at least, of the remarkable attendance Mrs. Matzen, Mrs. Dotson and their helpers have been able to secure.

Last year the department had 130 members. This year, because it has been more difficult to secure instruction from outside, little effort has been made to bring in new members, but the attendance at the millinery meeting in March was 65 the first day, 81 the second day and 78 the third. And to have 100 women present at the regular monthly meeting at the Woman's Club house is by no means uncommon.

Hats and Dress Forms

At the October meeting last year 100 hats were made, and at the March meeting this year a still larger number. A specialist from the home economics department of the University of California, Mrs. Powell, was at these meetings with buckram frames which she sold to the women at cost. The women were urged to bring old pieces of silk, ribbons, any old scrap that could be worked into a hat, and the result was a marvelous collection of inexpensive and beautiful hats. Mrs. Dotson said she made an elegant one out of an old silk skirt, and she showed me one her little daughter made out of braid. The average cost of these hats was not over $2.50, and 104 of them were made at the March meeting. Think what a saving to the community!

Dress Form Meeting of Escondido Farm Bureau Home Department

Even more interesting from the Cultivator standpoint was the dressform meeting last May. Following directions published in the Cultivator of May 28, 1921, 130 dress forms were made of paper and shellac, and 130 women rejoice in dress forms that would cost $15 if bought at retail, for the trifling expenditure of about $1.50. Strips of gummed paper are pasted over a knit undervest on the body of the woman who is to use it, covered with shellac and then allowed to dry before it is cut off. When this is mounted on a wooden pedestal which brings it to just the right height it makes a dress form equal to any.

Miss Theda Smith, San Diego County farm bureau demonstrator, has been the greatest possible help to the Escondido women. She is present at nearly every meeting, bringing either a specialist or some new idea which she demonstrates, first to a chosen committee, and then with them to the others. At the June meeting the subject was interior decoration, and Miss Smith brought a specialist who lectured on draperies and furnishings. At another meeting instruction was given in making men's ties out of ribbon, a yard and a half of ribbon making a $1.50 tie.

How to make a nice dress out of an old coat suit, to make pretty wash dresses out of dyed sugar sacks, to draft patterns and change old patterns to suit modern styles; to take dresses by measurement; to clean and press their own and their husbands' suits—these are just a few of the useful things these women learn at their meetings. And not only is instruction brought by outside specialists. Every woman who comes into the valley with any special gift or knowledge is straightway brought to the meeting and required to impart it to the department. And every woman who picks up anything new in the course of her reading or travels is expected to pass it on. This home department is a real clearing house for useful household information, and the best of it is that the women who need the help most are those who get most of it. "Uplifting" themselves and everyone they can reach is an art these San Diego County women are learning through their home department.

The Cultivator Patterns

3699-3698. Ladies' Costume.—Waist 3699 cut in six sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Skirt 3698 cut in six sizes: 24, 26, 28, 30, 32 and 34 inches waist measure. To make the dress for a medium size will require 8¾ yards of 32 inch material. The width of the skirt at the foot is 2½ yards. TWO separate patterns 10 cents FOR EACH pattern.

3688. Girls' Dress.—Cut in four sizes: 6, 8, 10, and 12 years. A 10 year size will require 3¼ yards of 38 inch material. Price 10 cents.

3706. Ladies' Apron.—Cut in four sizes: Small, medium, large and extra large. A medium size will require 2⅝ yards of 36 inch material. Price 10 cents.

3711. Boy's Suit.—Cut in four sizes: 3, 4, 5 and 6 years. A 6 year size requires 3⅜ yards of 27 inch material. If made as illustrated trousers and collar will require 1⅞ yard of material and blouse 1½ yard. Price 10 cents.

3471. A Pretty Dress.—Cut in six sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. The width of the skirt at lower edge is 2 yards. A 38 inch size will require 4⅝ yards of 44 inch material. Price 10 cents.

3703. Junior's Dress.—Cut in three sizes: 12, 14 and 16 years. A 14 year size requires 3¼ yards of 40 inch material. Price 10 cents.

3517. Work or Morning Dress.—Cut in seven sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. For a medium size six yards of 36 inch material will be required. The width at the foot is 2¼ yards. Price 10 cents.

3506. Girl's Dress.—Cut in four sizes: 6, 8, 10, and 12 years. An 8 year size will require 1⅝ yard of 36 inch material for the guimpe, and 2½ yards for the dress. Price 10 cents.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH

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Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cents) stamps for each number. In order to furnish our readers with the very best NEW YORK styles, all patterns ordered are filled in NEW YORK. Therefore, we promise to deliver all patterns ordered within TWO WEEKS; we guarantee safe delivery of all patterns.

CATALOGUE NOTICE

Send 15c in silver or stamps for our Up To Date Fall and Winter 1921 Catalogue, containing over 500 designs of Ladies', Misses' and Children's Patterns, a concise and comprehensive article on dressmaking, also some points for the needle (illustrating 30 of the various simple stitches) all valuable to the home dressmaker.

PATTERN DEPARTMENT
California Cultivator
Los Angeles

RANCH DESSERTS—WITH CREAM

By Mrs. G. W. Squire

I am sending four recipes for ranch desserts which I claim to be more or less original. I have never seen exact duplicates, and I warrant them to please the farmer—and his cook, if she has plenty of cream.

The many good recipes have increased the interest of the Household Page; we shall soon have a complete Cultivator Cook Book. I like to see the stories. My four year old always asks if there is a "little" story this time.

Farmer's Dumplings

Put through the food chopper one cup walnuts. Into simmering, sweetened stewed apples put these drop dumplings: Two cups flour sifted with half teaspoon salt, four tablespoons sugar and a sprinkling of cinnamon; moisten with one teaspoon melted shortening in two-thirds cup of water. Drop by tablespoons. Boil gently 20 minutes without removing lid. Serve with fruit around the dumpling, thick cream drowning it, and ground walnuts on top.

Rosy Love Pudding

Into three cups of boiling Satsuma plum juice stir three tablespoons of instantaneous tapioca and half cup of sugar. Cook smooth and serve hot or cold in thick or whipped cream.

Honey-Boy Peach Rolls

Make paste of one-half cup cooking oil, two cups flour, pinch soda, one level teaspoon salt and about one-half cup water. Roll into rounds the size of a saucer. Put stoned peach with sugar in each round and roll up into a boat shape. Rub over with sweet cream to give gloss and flakiness. When baked, serve hot with cream around it and a little honey or syrup in the boat-like hollow.

Sundae Cream Puffs

Two cups chopped apples, one cup ground walnuts, one pint whipped cream. Puffs: Put two cups water with one-half cup butter in kettle and bring to a boil. Stir in one cup flour, dry, stirring fast till smooth. When cool enough not to cook egg, beat in gradually three unbeaten eggs. Put one teaspoon of the batter in each gem pan and bake. Slit puffs and fill with nuts and apples folded into the whipped cream. Sprinkle with powdered sugar. Apples or nuts can be omitted if you flavor the cream with vanilla. These puffs never fail if oven is hot.

HINTS FROM HOUSEKEEPERS

Preserved Figs

Wash and weigh figs. To each pound add ½ pound of sugar and enough water to make the figs float and vinegar to make it a little tart. Five pounds figs 2½ pounds sugar, 1½ quarts water, 1 cup vinegar, 1 tablespoon whole cloves, 1 stick cinnamon. Cook one hour and let stand until next day. Turn figs well and cook one hour the second day. Third day cook until the syrup is thick. They can stand until cold and if syrup is not thick enough, cook again. Take out cinnamon and put in fresh pieces top and bottom of jar.

These I have used as Christmas gifts to friends in the East, wrapping jars in corrugated paper, then putting in breakfast food boxes. They went through the mails without breakage and seem to have been heartily appreciated.—E. L. B., Los Angeles.

The worst incompetent in any business is the person who is so cocksure he knows everything that he doesn't take the time to learn anything. This applies to employer as well as employee.

"The meek shall inherit the earth—but they must not grow impatient about it."

Formaldehyde, one to nine of water, is excellent fly poison. An inverted glass on a blotter makes an effective self-feeder to kill the pests.

A little flour dusted over top of the cake before it is iced will prevent the icing running off.

If you think you are bright, keep it dark.—Boston Transcript.

RONDEAU OF A HOT STOVE

"When winter comes," says Ma, "I go
To where the summer's overflow
Of all the things our garden grew;
Our berry patch; our orchard, too;
Stand waiting in a shining row

"Atop my pantry shelves. You know,
They're pretty, even as they grow,
But prettier, I'm telling you,
When winter comes!

"But stoves are hot in summer, so
There's many hunts the portico,
And fans themselves, and takes the view;
(I understand their feelings, too!)
The same hot stove's a blessing, though,
When winter comes!"
—Ohio Agricultural College.

THE HOUSEHOLD BUDGET

Much of the financial difficulty in a great many American homes, the advocates of the household budget assert, is due to the lack of some system suitably apportioning the family income to cover the cost of food, shelter, savings, clothing, and the other things which must be provided for decent and comfortable living, not forgetting provision for education and wholesome recreation. The problem cannot be solved by merely living within the family income.

PROVIDED HOUSEHOLD SUPPLY

The problem of having running water in the house, as well as on the farm, is one which farmers everywhere are struggling to meet. The county agent of Cabarrus County, North Carolina, employed by the United States department of agriculture and the state agricultural college, was able to persuade one of his demonstrators to dig out a basin on the side of a hill near his house and line it with cement instead of building a tower. The elevation was about 20 feet above the top of his house, which gave sufficient pressure. The outlay for placing water in both his and his brother's house was $400. The basin holds about 2,000 gallons and keeps the water at a more uniform temperature than would a tank in a tower, which would have cost twice as much.

WEARING ON BANKROLL

"Are you saving for the proverbial rainy day?"

"No. It's all I can do to keep up with the present dry spell.'—New York Sun.

Advice to parents: Pass the buck to the schools and then wonder why your children laugh at your advice and follow your example.— Kansas Industrialist.

The lime requirement of growing children is relatively very high on account of the growth of bone and other tissues which is taking place. A pint of milk a day in the diet of every person insures safety against a possible deficiency of lime, which might result in lowered vitality and disease.

When the City of Happiness is placed on the map, it will be found in the State of Mind.—Southern Pacific Bulletin.

"Feed me," cries the Bolshevik Russion, "that I may renew my strength to tell the world the blessings of communism."

As mortals go, how few possess,
Of courage, trust and faithfulness,
Enough from which to undertake,
Without some borrowed traits to make,
A decent dog.—Joe Anderson.

It is not always easy to keep out of the rut, but the fellow who does gets a lot of joy out of life.—The Retail Baker.

Wisdom is knowing what to do next. Skill is knowing how to do it, and Virtue is doing it. — David Starr Jordan.

THE STENOG'S VACATION

My tYpust is on her vacation,
My trpist's awau fpr a week
My typudt us in hwr vscarion
Wgile thse danm keys plsy hude and seej.

Cjoras:
Oy, breng boxk, bting bxck,
Brung becj mu b'Onnie ti my, tp mr;
B(&ng b$xj, b-6ng bicx,
Bjing bozk m% belnio -o mz, oh, helk¾
—Syracuse Post-Standard.

Save $60 a Year with a Sechrist Pressure Cooker

$1 *Delivers Your Sechrist*

The Sechrist Pressure Cooker saves a woman more in labor and time than can be estimated. Besides that—a Sechrist saves about SIXTY DOLLARS in fuel and food in one year's time.

Use the "cool-pack method" and your Sechrist for your canning. You will realize its great helpfulness only when you see how much time and fuel you have saved.

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Save 1-2 on Fuel

CHEAPEST HEAT YOU CAN BUY

The Sievert Oil Burner burns either distillate or kerosene oil in cook stoves, heaters, furnaces, pasteurizers, boilers, prune dippers, dairy sterilizers, etc. Absolutely safe, odorless, very convenient and low priced. MAKES HEAT AT HALF WHAT WOOD AND COAL COSTS. Install it yourself. Write for circular and prices on different sizes. Address Sievert Oil Burner Co., 710 North Main St., Los Angeles.

$35 to $600
2 and 4 Wheeled

Auto Trailer Co.
1320 Central Ave., Los Angeles

Keep your hogs free from lice

Keep their sleeping quarters, the feeding grounds, pure and healthful. Use the sprinkling can. Add four tablespoonfuls of Dr. Hess Dip and Disinfectant to each gallon of water. Sprinkle the animal body to kill the lice, the sleeping quarters and feeding grounds to destroy the disease germs. Or provide a wallow, to which add about one gallon D and D to every 70 gallons of water. Disinfect the barns, the poultry house.

Also use it about the home, in the sick room, sink and cesspools, to establish better health conditions.

DR. HESS & CLARK Ashland, Ohio

DR. HESS DIP and DISINFECTANT

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Expert Livestock Auctioneers
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Satisfaction guaranteed.
Write for dates and terms.

DON'T CUT OUT A Shoe Boil, Capped Hock or Bursitis FOR ABSORBINE

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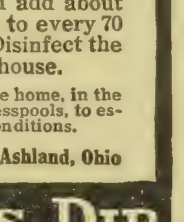

will reduce them and leave no blemishes. Stops lameness promptly. Does not blister or remove the hair, and horse can be worked. $2.50 a bottle delivered. Book 6 R free.

ABSORBINE, JR., for mankind, the antiseptic liniment for Boils, Bruises, Sores, Swellings, Varicose Veins. Allays Pain and Inflammation. Price $1.25 a bottle at druggists or delivered. Will tell you more if you write.

W. F. YOUNG, Inc., 244 Temple St., Springfield, Mass.

FOR SALE---Dish Face Berkshire Sow
RIVALS QUEEN 51ST

Has had one litter of pigs; is in good breeding condition; is from Big Bone prize stock and a very fine animal. Price reasonable.

Route No. 1, Box 174, or Phone 175
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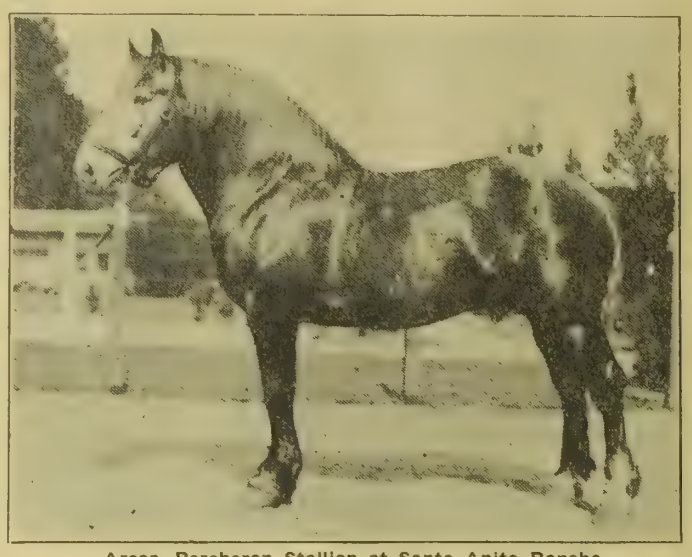
Res. 6946 No. Sherman Way

California Breeding Farms

By Jack Klein

SANTA ANITA RANCHO

FOUNDED in 1873 by the late Elias J. (Lucky) Baldwin, the Santa Anita Rancho has always stood for the best in everything pertaining to livestock. The original ranch contained 8,500 acres, but these were augmented by other purchases until at one time 54,000 acres of the most fertile land on the Pacific coast were included in the domain. It was imperative that this great tract, which included the entire San Gabriel Valley be subdivided and colonized by thousands instead of remaining in the hands of one family, so from time to time portions were sold, and the Santa Anita Rancho of today contains about 3,500 acres of the most fertile land which surrounds the old Baldwin home.



Arsar, Percheron Stallion at Santa Anita Rancho

From its earliest day the ranch brought honor to its owner and to California through the Thoroughbred horses which were bred and trained there. In 1885 the great colt, Volante, won the American Derby at Chicago, the greatest three-year-old race in America. Three times after that the black shirt with the red Maltese cross of the Santa Anita Rancho flashed under the wire in this race ahead of all other entries. No other breeder nor owner was ever able to capture this event more than once.

The present owner is Mrs. Anita M. Baldwin, the younger daughter of the founder. Mrs. Baldwin inherited all of her father's love for livestock and under her direction the Santa Anita Rancho has progressed very rapidly in other lines as well as in the horses. Given a perfect site, with countless great live oaks, fertile land and an abundance of water, she has created a ranch which is at once the joy and envy of all who visit it.

The Thoroughbreds are still a very considerable portion of the ranch's activities and the descendants of the great sire, Emperor of Norfolk, who won the American Derby in 1888, are in constant demand by the men who follow "the sport of kings." At the head of the stud is the well known stallion, Adalid, who is assisted by the youngster, Lantados. The mares are beautiful creatures and include Reina De Santa Anita who was junior champion Thoroughbred mare at the P. P. I. E. and a most wonderful filly named Cruzada.

Along with the runners we find an excellent stud of Arabians headed by Ibn Mahruss who was presented to the cartoonist Homer Davenport by the Shah of Persia. This horse is said to be one of the greatest Arabian stallions in the world. The mares are of the highest type and are capable of sustaining the reputation of their consort.

Another part of the ranch is set aside for the use of the Percheron stud, and here are many of the great individuals of the breed. The young stallion, Arsar, who was grand champion at Los Angeles and Riverside last year, heads this department. Sired by Imp. Jusque, the great prize wining iron gray who so long headed the stud, he is out of Oaklawn Queen who has been pronounced the greatest American bred Percheron mare. Arsar has proven himself to be a horse of the highest type, and his colts follow him very closely in type and conformation. The mares have been great prize winners wherever shown and the youngsters have all done their bit to keep the name of the rancho in the front ranks. The care given the young stallions when they are growing and being schooled is a very valuable asset as they are always gentle, and perfect strangers are as safe in the stalls with them as they would be with an ordinary gelding. It is the owner's wish that they be treated as gentlemen, and a whip is a thing unknown to any of them, so that even in the breeding yard they can be relied upon to behave themselves. Young stallions which have gone out from this ranch have always proven to be all that is desired in every way.

In the draft division there is a large stud of Mammoth jacks and jennets. When the stud was established the foundation stock was all brought from the prominent farms of the Blue Grass state, and King Bersheba, who won sweepstakes for jacks of all ages at the Lexington, Kentucky, Blue Grass State Fair in 1914 was placed at its head. He is one of the largest jacks in service, standing 15⅝ hands high with a girth of 66 inches, and has a 9 inch bone. As an individual he is a wonder and his get follow him very closely. He is of the type that shows great strength and early maturity, and a mule colt sired by him, shown last fall, was the joy of all who saw him. At one year of age this colt weighed nearly 1,700 pounds and was as big as the ordinary mule when full grown.

One of the best known activities of the ranch is the herd of Holstein cattle. Numerous purchases of the best animals to be found have provided an excellent foundation. The best known individual of the herd is the bull, King Korndyke Pontiac Acme, who was purchased from A. W. Morris and Sons at the National Sale in St. Paul for $41,000. This bull combines the greatest families that have ever been developed in the state. His sire, King Korndyke Pontiac 20th, was dropped on this ranch and sold as a calf for $6,500 to W. J. Higdon of Tulare. He was sold in Mr. Higdon's sale last

Blackleg

MAY BE PREVENTED BY USING PARKE, DAVIS & CO.'S SCIENTIFICALLY PREPARED

Blackleg Vaccines

BLACKLEG VACCINE (BLACKLEGOIDS)
THE OLD RELIABLE BLACKLEG VACCINE IN PILL FORM

BLACKLEG AGGRESSIN
(GERM-FREE BLACKLEG VACCINE)
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Shorthorns
Herd Sires:
California Model 635776
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Poland China Swine
Big—Prolific—Easy Feeders—
The Farmers' Kind.
Prices Reasonable

Hampshire Sheep
The top and the high average at the 1921 Davis sale. The kind that sire early market topping lambs. We have what you want at prices you can afford to pay.

Visit the farm at any time.

J. I. Thompson, Manager — C. Harold Hopkins, Owner

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Blackhawk Ranch Shorthorn Cattle
One of the most select herds in America. Only Scotch females of the best families headed by
ROAN RADIUM
COLLYNIE PRINCE LAVENDER
Imported direct from the famous Duthie herd.
SHIRE HORSES
A great opportunity for interested parties to buy a stallion at the San Francisco show. For prices and particulars see E. LOVELL, Mgr.
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For Profitable Durocs
As we have sold out of bred sows and gilts, we are now offering big growthy fall pigs, either sex, at attractive prices.
D. G. Cummins & Son
Route 1 Visalia, Cal.

King Segis Pontiac Jannek
A proven sire of show winners and high producers is available for service to high class Holstein cows.
SANTA MONICA DAIRY CO.
Farm Is on Washington Blvd. 2 miles east of Venice.
Santa Monica

Yes! We Have It
A fine young bull out of an advanced registry dam for your next herd sire. Write us about him.
Elkhorn Ayrshire Farm Watsonville, Cal.

year to Burr Farm of Los Angeles for $12,000. The sire's dam, Miss Valley Mead De Kol Walker, is one of the greatest cows of the state and has twice made over 1,000 pounds of butter in ten months, as well as making 36.81 pounds of butter in seven days. She holds the world's eight-months-after-calving record for the class, 25.15 pounds of butter when three years old. She is a daughter of Prince Gelsche Walker.

The dam of King Korndyke Pontiac Acme is the remarkable heifer, Miss Aaggie Acme Burke, who made 1,034.44 pounds of butter from 24,338.8 pounds of milk as a two year old. Her milk record was a world's record for a time. It was beaten by a cow in Washington who has since died. On test at four years of age she made 35.38 pounds of butter in seven days and has made 825.68 pounds from 18,393.1 pounds of milk in seven months.

This bull has a very enviable record behind him. His six nearest dams average 1,113.58 pounds of butter for the year and five of them have made world's records. His seven nearest dams average 1,058.16 pounds of butter in 365 days and some of the records were made by young cows. He has quite a show record and his calves are of the type that please the breeders. He is being given heavy service to some very wonderful cows and promises to make a name for himself. The rancho gives every cow an official test and usually runs her for the year. Conditions for testing are ideal, with wonderful equipment, and some very fine records have been made there. At present the herd numbers nearly a hundred head, with some very excellent heifers due to freshen soon from service to the great young herd bull.

The rancho also maintains a fine herd of Poland China hogs in which are many prize winners. The two young boars, Santa Anita Orange 2nd and 3rd, by Orange Boy and out of Santa Anita Orange Bud, who was grand champion at Los Angeles and Riverside, are being used as herd headers. These junior yearlings were winners in the shows last fall and are proving themselves great sires. Santa Anita Rancho has always been a winner in the Poland China classes and the present herd is far above any they have had previously. Every animal is big type from the beginning and is just what the public demands in both pork and breeding hogs.

Mrs. Baldwin has been very fortunate in securing the services of Chas. MacDonald, formerly of Toyon Farm, as manager of her great estate. Mr. MacDonald is a thorough livestock man as well as farmer and is well fitted for the varying duties he is called upon to perform. Under his direction the Santa Anita Rancho cannot help but come to the front even faster than before and be able to hold its place as one of the really great breeding establishments of the entire country.

ARIZONA RANGES WELCOME RAINS

The U. S. weather bureau station at Phoenix, Arizona, reports:

"Too much water on the range is a statement difficult to believe in the light of many months' drouth, yet that is the report from the observer on the northeastern plateau with headquarters at Pinto. That section continues to report heavy showers and there is an unusual amount of water standing in tanks and water holes. At Pinedale immediately north of the Mogollon rim heavy rains have continued and range and water are 200 per cent compared with normal and cattle are excellent. Moderate to heavy showers continue on the drainage basin of the Roosevelt reservoir and the run-off is considerable; range conditions and stock are excellent. Rainfall was lightest in the southeastern section of the district but range and stock are reported good. Owing to the local character of showers at Williams the town reservoir is dry while range in that vicinity is good and the water supply plentiful. Moderate rainfall occurred in the vicinity of Grand Canyon and over the Prescott national forest and the range and stock are in good condition. Wild grass has been cut for hay to a considerable extent during the week for which purpose the weather has been fairly good.

"While the atmosphere has been fairly moist during the week it was somewhat drier than the week preceding and cotton made fair progress. Oranges are doing well and sizing up nicely in both the Salt River and Yuma Valleys. Potatoes continue in good condition in the northern counties and a good crop is in prospect. Dates from local trees are in market and are of attractive appearance."

BULLETIN ON MILK GOAT

A bulletin, "The Milk Goat in California" has just been issued by the experiment station of the state college of agriculture. It is written by E. C. Voorhies of the animal husbandry department and gives general information regarding milk goats and the products obtained from goat milk. It also records results of experiment work in this field by the station from 1914 to 1916.

This bulletin may be secured free by any Californian on request to Agricultural Experiment Station, College of Agriculture, Berkeley.

CATTLE SLAUGHTERED IN CALIFORNIA

Figures compiled and sent out by office of cattle protection, state department of agriculture. These figures cover the first six months of 1921:

Cows, 127,584; calves, 96,403; steers, 142,906; bulls and stags, 4,437; total slaughtered, 371,330.

Number of cattle shipped from counties in state for slaughter at larger slaughtering centers in California, January 1, 1921, to June 30, 1921: Cows, 49,488; calves, 50,833; steers, 85,599; bulls and stags, 1,696; total, 187,616.

Number cattle shipped from California to adjoining states for slaughter January 1, 1921, to June 30, 1921: Cows, 1,414; calves, 495; steers, 2,615; bulls and stags, 66; total, 4,590.

Number of cattle shipped into California for immediate slaughter from adjoining states and Canada January 1, 1921, to June 30, 1921: Utah, 627 cows, 1,459 steers, 1 calf, 176 bulls and stags, total 2,263; Oregon, 280 cows, 2,077 steers, 12 calves, 1 bull or stag, total 2,370; Idaho, 82 cows, 904 steers, 140 bulls and stags, total 1,126; Texas, 100 cows, 865 steers, total 965; Arizona, 62 cows, 298 steers, 1 calf, total 361; Nebraska, 157 steers; Nevada, 1,299 cows, 1,547 steers, 92 calves, 110 bulls and stags, total 3,048; New Mexico, 11 cows; Canada, 49 cows. Total, 2,510 cows, 7,307 steers, 106 calves, 427 bulls and stags. Grand total 10,350.

Number cattle slaughtered in state under meat inspection ordinances and regulations January 1, 1921, to June 30, 1921, 241,598. Number cattle slaughtered without meat inspection, 127,827.

LIVESTOCK AT SAN FERNANDO FAIR

Hamilton (Horse) Bassett, who is managing the $1,000 a Night Horse Show to be held in connection with the Los Angeles County Fair at San Fernando September 19 to 24, has just returned from a trip through Northern California where he has visited owners of famous horses in that section. His first act upon arriving home was to order two more rows of box stalls built, in addition to the 116 box stalls and 50 plain stalls that were already ordered. When finished, the huge arena will be flooded with a beautiful soft white light and will be decorated in the liveliest fashion to furnish a proper background to the 200 or more wonderful horses that will be seen at this show.

The horse show and the livestock show will be the two premier events of the big county fair, although the power farming machinery department and the tractor demonstration, the national poultry show for California for 1921 and the agricultural and industrial departments are all organized on a tremendous basis that will be a credit to the county.

M. H. Adamson and E. J. Sturgis, chairman and vice chairman of the livestock show, are in San Diego at the present time and they send word that Dr. A. B. Wessells and Walter Dupee will both be here to show a herd of animals. There will also be two carloads of Ayrshires from A. MacMinn, Phoenix, Arizona.

SONOMA COUNTY FAIR

Sonoma County has a just pride in the results of the fair ending last week. It is already shouting: "Bigger and better next year. It will be a real fair."

One of the leading exhibits at the fair was the "Egg to Egg" exhibit. Practically the whole of the poultry industry was shown in this feature, and the whole of the poultry industry, from Sonoma County's standpoint, is some story. Besides poultry, livestock, especially dairy cattle and Berkshire hogs, made a showing which was really a wonder. The Guernseys and Jerseys were strong. In livestock there were exhibits from Thorp, Humphrey, London, O'Connor, and others, but these names are given in the list of awards.

The association now owns about 160 acres. It is erecting permanent buildings to the value of nearly $150,000.

Appointment of Milo D. Campbell of Coldwater, Michigan, president of the National Milk Producers Federation, to fill a vacancy on the federal trade commission on expiration in September of Commissioner Pollard's term, is being urged by many strong national farm organizations.

A score or more of the state's most famous pedigreed horses will be seen out in the trotting and pacing events at the Fresno district fair, September 26 to October 1. There will be keen rivalry between some of last year's eastern and other winners and seconds at Fresno.

172 Registered Holsteins
AT PUBLIC AUCTION

Tuesday
OCTOBER 4
70 REGISTERED HOLSTEINS
Complete Dispersal
S. O. Walker Herd
Visalia, Cal.

KING OF THE BLACK AND WHITES will be sold. He was the first bull whose seven nearest dams averaged over 30 lbs. butter in seven days.

35 DAUGHTERS OF KING OF THE BLACK AND WHITES, some out of dams with over 30 lbs. butter in seven days.

MANY A. R. O. COWS with records up to over 26 lbs. butter in seven days.

YOUNG BULLS of choice breeding, including two grandsons of Sir Pietertje Ormsby Mercedes.

Every animal guaranteed a breeder; no tuberculin test certificates.

PLACE OF SALE: S. O. Walker Ranch, 3½ miles east of Visalia on Mineral King Avenue.

Wednesday
OCTOBER 5
47 REGISTERED HOLSTEINS
From the Herd of
Robt. T. Curtis & Son
Exeter, Cal.
Selling at Tulare Sale Pavilion
Tulare, Cal.

Including:
COLOMA BEAUTY BUTTER MAID, 34.72 lbs. butter in 7 days as a junior 4 year old.

THREE DAUGHTERS OF KING KORNDYKE PONTIAC 20TH, the $12,000.00 son of Miss Valley Mead De Kol Walker.

13 GRANDDAUGHTERS OF KING DOLLAR, the 38 lb. son of Spring Farm Pontiac Cornucopia.

GRANDDAUGHTERS of Pontiac Korndyke, Pontiac Aaggie Korndyke, King of the Pontiacs, and other famous sires.

A SON OF KING KORNDYKE PONTIAC 20TH, with an average of 808.27 lbs. butter in one year for six of his 7 nearest dams.

Guaranteed breeders; tuberculin tested and subject to retest.

Thursday
OCTOBER 6
55 REGISTERED HOLSTEINS
Complete Dispersal of
Eldorado Herd
Owned by
Alex. Whaley, Tulare, Cal.
Selling at Tulare Sale Pavilion
Tulare, Cal.

Including:
20 DAUGHTERS OF SIR AAGGIE DE KOL ACME 2ND, five of whose 7 nearest dams average 1,154 lbs. butter in one year.

MELBA HENGERVELD, the noted 30 lb. cow, and her daughter and granddaughter.

MANY A. R. O. COWS, of choice breeding.

THIS IS A TOP NOTCH HERD of young cattle, only one animal over 5 years old.

KING TOLA KORNDYKE PONTIAC will be sold. He is by King Korndyke Pontiac 20th and out of K. P. Tola, 36 lb. daughter of King of the Pontiacs.

CHOICE YOUNG BULLS that will no doubt sell at dairymen's prices.

Guaranteed breeders; tuberculin tested and subject to retest.

TERMS OF ALL THREE SALES: Cash unless arrangements for credit are made with California Breeders Sales and Pedigree Company before sale. Responsible parties may secure terms of one-third cash, balance in 3, 6, and 9 months on approved notes.

Auctioneers:
Col. Ben A. Rhoades, Los Angeles
Geo. W. Bell, Tulare

Management
California Breeders Sales and Pedigree Company
C. L. Hughes, Sales Manager, Sacramento, Calif.

MASTERPIECE
OF EDGEMOOR

The Greatest of All Guernsey Bulls

Sired by **Royal Rose King of Edgemoor** who was by **Imp. Itchen May King**, grand champion of the P. P. I. E. in 1915 and grand champion of the 1920 National Dairy show. **Imp. Itchen May King** also sired **Dauntless of Edgemoor**, grand champion of the 1919 National Dairy show and **Vedas May King** who won championship honors atPortland last year.

Royal Rose King of Edgemoor was out of **Belladia**, the highest record Guernsey in California, who made 934 lbs. of butter fat in 365 days in a certified milking barn.

Masterpiece of Edgemoor

is out of **Jesebel of Edgemoor** the highest record daughter of the great **Ne Plus Ultra.** She is the State Champion in her class and stands 4th in her class for the U. S. with12,434.9 lbs. of milk and 748.3 lbs. of butter fat at 2½ years of age.

Edgemoor Farms will sell 40 young Guernsey Cows and Heifers, mostly bred to Masterpiece of Edgemoor—and 10 young Bulls at

Public Auction
Thursday, October 20
Rhoades and Rhoades Sale Pavilion
at Hynes, California
Sale in Charge of California Breeders Sales and Pedigree Co.
All Animals Free From Tuberculosis and Guaranteed Breeders
Write for Information

EDGEMOOR FARMS
W. H. Dupee, Owner
Santee, San Diego Co., Cal.

Santa Anita Rancho
Pure Bred Registered Percheron, Arabian and Thoroughbred Horses, Holstein-Friesian Cattle, Southdown Sheep, Big Type Poland China Swine, Mammoth Jacks and Jennets.
Young Breeding Stock of All Kinds
Every Animal Guaranteed

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and Anoakia Breeding Farm
SANTA ANITA Anita M. Baldwin, Owner CALIFORNIA

A HOLSTEIN BULL
from the Maxwell Farms must carry a big percentage of the highly popular Ormsby blood. The blood of Sir Pietertje Ormsby Mercedes, Sir Ormsby Hengerveld De Kol, Pietertje Maid Ormsby and Sir Ormsby Skylark has produced many of the greatest animals of the breed.

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Every animal guaranteed free from tuberculosis and a breeder.
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MAXWELL FARMS
Hollywood **California**
We Will Show at San Fernando, Ventura and Riverside

Tosantos Walker Mead
Born December 9, 1919
Exceptional Yearly Record Backing

His five nearest dams average over 1,000 lbs. butter in a year. He is out of a wonderful daughter of Prince Gelsche Walker and Sir Aaggie Mead De Kol. He is a show bull and is priced for immediate sale.

E. D. BARRY, JR. **Workman and Azusa Ave., Covina, Cal.**

HOLSTEIN Fred Hartsook RANCH CATTLE
We have assembled an excellent foundation herd of females and will be glad to have breeders call. **Fred Hartsook, Lankershim, California.**

GUASTI BERKSHIRES
The Big Modern Type
Weanling Trios a specialty: two gilts and unrelated boar. Specials for farmers and pig club boys. Herd tuberculin tested and cholera immune. Breeding stock of all ages.

ITALIAN VINEYARD CO.
Alex. M. Wilson, Supt. Guasti, Cal.

Report of State Dairy Cow Competition, July, 1921

By Prof. F. W. Woll

List of cows producing 50 pounds of butter fat or over during the month:

Adohr Stock Farms, Guernseys and grades: C-115, 1,535 lbs. milk, 66.01 lbs. fat; C-310, 1,314, 55.19; C-319, 1,066, 53.30; C-269, 1,231, 51.70; Daisy of Sunny View, 1,023, 51.15.

Arden Dairy, grade Holsteins: 982, 1,500 lbs. milk, 66.00 lbs. fat; 58, 1,429, 51.44; 188, 1,175, 50.53.

Anita M. Baldwin, Holsteins: Lady Lilith Walker DeKol, 2,193 lbs. milk, 79.81 lbs. fat; Thelma Riverside Walker, 1,943, 60.63; Ellen Walker Hartog, 1,678, 57.73.

Dean Beeman, Holsteins: Jacobina, 2,166 lbs. milk, 63.69 lbs. fat; Capunista, 1,918, 59.45; Bernice NaDean DeKol, 1,709, 58.62.

Berylwood Stock Farm, Holsteins: Fay Tritomia H. W., 1,949 lbs. milk, 65.08 lbs. fat; Douwe Pontiac, 1,530, 56.93; Romeana Douwe, 1,733, 56.14; Holland Pietertje H. II, 2,107, 55.62.

E. Biondini, grade Jerseys: Rachel, 1,469 lbs. milk, 71.98 lbs. fat; Midget, 1,469, 70.51; Twinnie, 1,246, 64.79; Brownie, 1,234, 64.17; Shortie's Best, 1.060, 63.60; Hannah, 1,048, 59.74; 1910, 1,389, 59.73; 62, 952, 57.12; Judy, 1,197, 53.87; Rosalie, 809, 50.97; Dottie, 1,097, 50.46.

N. L. Browning, Holsteins: Segis DeKol Bess, 1,805 lbs. milk, 56.85 lbs. fat.

Leo Christen, grades: Mama Jersey, 1,333 lbs. milk, 65.32 lbs. fat; Newberg, 1,683, 58.91; Buttercup, 967, 56.09; Black Beauty, 1,358, 54.32; Mousie, 1,082, 54.10; Blue, 1,460, 52.56; Lily, 1,169, 51.44; Young Lumpjaw, 1,646, 51.05.

M. P. Christensen, Holsteins: Marken Louise, 1,491 lbs. milk, 58.15 lbs. fat.

D. F. Conant, Jerseys: Lady Kate's R. of R. S. M., 1,020 lbs. milk, 50.57 lbs. fat.

J. W. Coppini, Jerseys and grades: Noble's Sayda Polo, 878 lbs. milk, 64.08 lbs. fat; Olga Fern's Olga, 1,026, 59.49; Lady Mc., 1,370, 57.81; Hazel Marigold of F., 961, 51.20.

W. F. Early, grades: Little Darling, 1,156 lbs. milk, 64.74 lbs. fat; Rosy, 1,299, 63.65; Pencil, 1,321, 59.45; Roany, 1,500, 58.50; Butterfly, 1,256, 57.78; Creamcup, 995, 55.72; Black Ward, 1,026, 55.40; Darky, 1,339, 54.90, Lineback, 1,061, 54.21; Granny, 1,290, 54.18; Humboldt Maid, 973, 53.52; Novene, 1,032, 50.57; Jack Rabbit, 884, 50.39.

El Mirador Dairy, grade Holsteins: Belle, 1,504 lbs. milk, 60.16 lbs. fat; 53, 1,259, 50.36.

J. A. Genzoli, grades: Dollie, 1,627 lbs. milk, 86.23 lbs. fat; Sarah, 1,423, 78.27; Jill, 1,103, 67.28; Blue Spot, 1,481, 66.65; Brownie, 1,047, 60.73; Pansy, 1,091, 58.91; Princess, 939, 57.28; Fannie, 1,119, 55.95; Baby, 1,202, 54.09.

Earl Graham, Holsteins and grades: Princess Maida V., 2,355 lbs. milk, 75.61 lbs. fat; Gamma Sarcastic of L., 1,964, 67.17; Hauser, 1,758, 66.80; Pansy, 1,575, 64.58; Pinkie, 1,531, 62.77; Montana, 1,447, 57.88; Cora Jarie P., 1,385, 57.75; May Walker G. K., 1,576, 55.01, Niger, 1,448, 53.58; Peg, 1,100, 52.80; Black Emma, 1,448, 52.13; Tomie, 1,358, 51.60; Miss Segis P. W., 1,287, 50.82.

W. B. Gries, grade Jerseys: Nig, 964 lbs. milk, 55.91 lbs. fat; Brindle, 1,125, 54.00; Bessie, 778, 52.13.

H. G. Gross, Jerseys: Lydia's Valentine, 957 lbs. milk, 55.98 lbs. fat; Cynthia of B. V., 1,086, 52.13.

J. B. Harbers, grade Jerseys: Bertha, 1,032 lbs. milk, 54.70 lbs. fat; Polly, 939, 54.46; Clara, 828, 52.16.

Fred Hartsook, Holsteins: Bessie Snowball DeKol, 2,297 lbs. milk, 77.42 lbs. fat; Parthenia Paul S., 2,266, 75.44; Miss Aaggie DeKol M., 2,095, 75.21; Segis Tubie Col., 2,134, 74.25; Parthenia Champion, 1,945, 73.52; Junette Heng. Cloth., 2,413, 71.67; Athenia Rod. Luecke, 2,541, 69.63; May Altoona P., 2,052, 68.14; Fascination DeKol II, 2,106, 67.82; Beryl Mortum L. DeKol, 2,048, 64.92; Ciruela Caroline W. De Kol, 1,852, 64.26; Miss Aaggie O. S., 2,172, 64.07; Annie Langtry DeKol, 2,016, 58.27; Mutual DeKol Johanna, 1,717, 56.50; Sarcastic Blanche C. De Kol, 1,931, 55.43.

Nate Hauck, grades: Brindle, 1,903 lbs. milk, 79.93 lbs. fat; Red, 1,503, 70.64; Chub, 1,618, 69.57; Nigger, 1,333, 62.65; Brownie, 1,131, 56.55, Slow, 1,162, 55.78; Speck, 1,426, 55.61; Beauty, 1,221, 54.95; Lily, 1,348, 53.92, Bird, 1,240, 52.08; Bally, 1,627, 52.06; Ring, 1,206, 50.65; Strap, 1,069, 50.24.

C. D. Hayworth, Jerseys: Lorna of Rico V., 1,454 lbs. milk, 55.54 lbs. fat.

Peter Iversen, grades: Old Jersey, 1,054 lbs. milk, 62.19 lbs. fat; Kicker, 1,355, 56.91; Marcella, 1,128, 54.14; Red, 1,135, 53.35; Poor, 1,132, 53.20; Freddie, 1,017, 51.89; Yellow Jersey, 970, 51.41; Old Red, 1,200, 50.40.

C. D. Kennedy, Holsteins: Salma Bess DeKol L., 2,220 lbs. milk, 63.03 lbs. fat.

Los Angeles County Farm, Holsteins and grades: Whittier Pontiac N. IV, 1,712 lbs. milk, 68.99 lbs. fat; Tuolumne, 2,280, 55.88; Trinity, 1,996, 55.80; Princess, 1,274, 50.96.

Palo Alto Stock Farm, Holsteins: Kiatta Pontiac P., 3,313 lbs. milk, 85.48 lbs. fat; Thelma Hartog S. DeKol, 2,360, 78.82; Irene Segis Pontiac, 2,059, 76.40; Alta Pappoose, 2,158, 72.92; Alta Johanna Princess, 2,064, 71.83.

F. F. Pellissier, Holsteins: Princess Tolia W., 1,814 lbs. milk, 64.76 lbs. fat; 2403, 1,646, 60.90; 2479, 2,238, 60.43; Mamie Pontiac, 1,386, 54.61; 1917, 1,581, 53.75; Brudorin, 1,460, 51.10; 2423, 1,727, 50.08.

M. L. Pontoni, grade Jerseys: Paddy, 1,377 lbs. milk, 70.23 lbs. fat; Klamath, 1,376, 68.80; Rolley, 1,472, 66.24; Mousie, 1,419, 58.18; Meschini, 1,336, 57.45; Berne, 1,370, 56.17; White Tail, 1,171, 55.04; Margaret, 1,069, 54.52; Arcata Girl, 1,209, 54.41; Mabel, 1,357, 52.92.

H. F. Richards, Jerseys: Victor's Lady Queen III, 1,255 lbs. milk, 64.23 lbs. fat; Teddy R's Silver Beauty, 1,214, 58.86; Teddy R's Poppy Girl II, 976, 53.86.

Olga Saxer, Holsteins: Moorland Colantha Rose, 2,065 lbs. milk, 58.85 lbs. fat.

W. Terkelsen, grades: Dinah, 1,451 lbs. milk, 76.90 lbs. fat; Christina, 1,293, 65.94; Amy, 989, 64.29; Laura, 1,283, 62.89; Annie, 1,085, 60.76; Pale Face, 1,693, 57.56; Ethel, 961, 54.78; Evelyn, 1,262, 54.27; Lucy, 1,088, 51.14; Friday, 874, 50.69.

H. L. Wakeham, grade Jerseys: Big A, 1,060 lbs. milk, 63.07 lbs. fat; Brown Jersey, 1,277, 57.47; Jim's Wonder, 1,376, 53.66.

R. H. Walrath, grades: Anne, 1,262, 60.58; Minnie, 1,066, 50.10.

Warner & Sons, Holsteins: Fayette Segis, 1,483 lbs. milk, 55.16 lbs. fat.

The reports for July so far received show that 518 cows in milk during the full month produced an average of 1,071 pounds milk and 47.04 pounds butter fat (average number of days in milk at the beginning of the month, 149). Two cows produced above 80 pounds butter fat during the month, 18 produced between 70 and 80 pounds, and 43 between 60 and 70 pounds.

The prize offered by the California Cultivator for the highest average production by five grade cows for the month of July was won by Walter Terkelsen of Humboldt County. Five grade Jerseys in his dairy herd produced on the average 66.16 pounds butter fat during the month (average milk 1,220 pounds, test 5.42 per cent, distance from freshening, 96 days). The production of the individual cows ranged from 60.8 to 78.9 pounds butter fat. These grades stood first among similar groups in 23 herds in different parts of the state that competed for the Cultivator prize during the past month. The average production of all but seven of these groups came above 50 pounds, the lowest producing grades averaging 19.97 pounds fat. Five grades owned by the following dairy farmers produced on the average over 50 pounds butter fat during the month, viz: W. Terkelsen, 66.16 pounds; M. Pontoni, 64.18 pounds; J. A. Genzoli, 63.45 pounds; W. F. Early, 60.82 pounds; E. Graham, 59.97 pounds; E. Biondini, 59.33 pounds; L. Christen, 57.75 pounds; N. Hauck, 57.58 pounds; P. Iversen, 55.96 pounds; Arden Certified Dairy, 52.44 pounds; W. B. Gries, 52.15 pounds; J. A. Harbers, 51.53 pounds; Adohr Stock

Farms, 50.95 pounds; H. L. Wakeham, 50.53 pounds; Giacomini & Pedrotti, 50.56 pounds; F. F. Pellissier, 50.03 pounds.

The following cows have now completed the record period of ten months (305 days) in the competition. They are given in the order of their owners, alphabetically arranged:

No.	Name of Cow.	Age Yr.-Mo.	Days in Milk beg. of Record	Milk Lbs.	Butterfat Pct.	Butterfat Lbs.
1.	C-50, gr. G.	M.	5	10,121	5.05	511.27
2.	C-113, gr. G.	M.	6	9,974	4.36	434.98
3.	C-46, gr. G. (1)	M.	5	8,543	4.84	413.11
4.	Loraine Princess of A., G.	6-0	82	7,342	5.69	417.30
5.	C-2, gr. G. (2)	M.	7	8,572	4.66	399.74
6.	Lulena, G. (2)	5-11	19	6,212	5.66	351.53
7.	Miss Nancy of S. L., G.	5-7	105	3,800	6.62	251.43
8.	No. 865, gr. H.		7	12,707	4.08	518.45
9.	Johanna Hengerveld Cap., H.	4-10	10	18,434	3.33	613.93
10.	Jean NaDean DeKol, H.	2-7	126	16,384	3.33	544.58
11.	Financial C.'s Loretta D., J.	8-5	14	11,504	6.00	689.97
12.	Figge's Loretta, J.	2-7	45	7,892	5.85	461.97
13.	Pearly Exile, J.	4-4	39	6,107	6.02	367.51
14.	Zampa Annie L. II, H.	7-3	33	21,579	3.11	681.41
15.	Amelia Bona DeKol, H.	10-3	6	20,688	3.18	658.23
16.	Helm Segis M. K., H.	4-0	52	15,225	3.46	526.21
17.	Snail Sarcastic, gr. H.	3-8	5	7,852	5.35	420.69
18.	Mamie Owl, J.	10-1	18	7,289	5.42	394.54
19.	Belle's Goldie, J.	2-9	14	4,607	5.67	260.11
20.	Sally's Loretta, J.	2-2	5	3,660	5.74	210.09
21.	Ciruela Mecht. Pontiac, H. (3)	3-3	5	13,260	3.42	453.18
22.	Bonita Pontiac, H.	3-5	5	13,385	3.31	442.27
23.	Ciruela Mecht. Colantha, H. (4)	2-3	5	11,860	3.64	431.90
24.	Olga Fern Smith, J.	9-7	8	9,901	5.42	536.42
25.	Sarcastic Dora of M., H.	9-9	7	20,839	3.30	687.71
26.	Squaw Queen DeKol II, H.	7-3	7	16,041	3.32	531.88
27.	Belle, gr. H.	5-	5	16,302	4.19	662.55
28.	No. 129, gr. H.	8-	5	10,186	5.20	539.34
29.	Speck, gr. H.	10-	6	11,949	3.78	451.09
30.	No. 1, gr. J.	8-	15	8,354	4.85	404.94
31.	Blue Bell, gr. J.	M.	45	7,743	4.73	366.02
32.	Minnesota, gr. J.	3-1	7	10,176	4.89	497.21
33.	Juliet, gr. H.	7-	5	12,445	3.80	473.45
34.	Trixy, gr. J.	7-	11	9,213	4.12	380.04
35.	Illinois, gr. J.	3-4	5	6,521	5.43	353.79
36.	Oregon, gr. J.	3-3	5	6,666	4.96	330.90
37.	Colorado, gr. J.	2-5	19	4,293	6.13	263.23
38.	Vermont, gr. G.	2-1	5	5,208	5.01	260.72
39.	Tennessee, gr. G.	2-1	24	5,613	4.39	246.32
40.	Indiana, gr. J.	3-4	27	5,702	4.27	243.29
41.	Lady Lettie of C., G.	--	49	6,083	4.32	262.87
42.	Jersey, gr. J.	10-	5	8,954	5.97	534.52
43.	Bandera, gr. H.	4-0	18	10,697	4.42	472.47
44.	Captain, gr. H.	5-0	6	12,513	3.65	456.40
45.	Smith, gr. H.	5-	18	9,990	4.24	423.33
46.	Columbine, gr. H.	3-6	19	10,774	3.59	386.87
47.	Teresino, gr. H.	3-	16	9,428	4.04	380.91
48.	Ayrshire, gr. Ay.	3-8	12	11,197	3.64	407.46
49.	Franchesa, gr. H.	4-7	17	9,902	3.93	389.26
50.	Belle, gr. H.	2-2	48	11,377	3.88	441.17
51.	Colantha, gr. H.	--	115	8,603	4.62	397.39
52.	Cynthia's Raleigh Girl, J.	5-7	5	9,199	5.53	509.06
53.	Raleigh's Echo Girl, J.	2-11	5	8,417	6.00	505.05
54.	Gertie's Fairy T., J.	2-0	5	5,983	5.31	317.43
55.	Raleigh's Fairy C., J.	1-10	6	5,405	4.98	268.99
56.	No. 57, gr. H. (2)	5-	55	9,817	4.06	398.17
57.	No. 81, gr. H. (1)	4-	28	8,980	4.19	376.39
58.	Whittier Segis P. M., H.	4-4	52	16,088	3.48	559.44
59.	Blue Bell, gr. H.	9-	14	12,663	4.37	553.69
60.	Colusa, gr. H.	3-	12	11,791	3.82	450.53
61.	Madera, gr. H. (5)	4-2	9	10,326	4.16	429.81
62.	Beauty Homestead, gr. H.	4-11	19	12,549	3.41	427.94
63.	Substantial's Patricia, Ay.	5-7	5	9,134	4.34	396.25
64.	Blackeye, gr.	--	7	10,930	3.98	430.10
65.	Guernsey, gr. G.	--	44	8,480	4.22	358.01
66.	No. 2065, gr. H.	--	5	13,915	4.01	557.83
67.	No. 2373, gr. H.	--	87	12,473	4.33	549.64
68.	No. 921, gr. H.	--	5	12,078	4.08	493.01
69.	No. 1910, gr. H.	--	5	13,468	3.62	487.41
70.	No. 2150, gr. H.	--	5	14,682	3.17	465.14
71.	No. 2616, gr. H.	2-	22	13,838	3.33	460.68
72.	No. 2589, gr. H.	--	28	12,298	3.73	457.97
73.	No. 2620, gr. H.	2-	29	13,118	3.11	408.21
74.	No. 2661, gr. H.	--	21	10,922	3.46	377.76
75.	No. 2066, gr. H.	--	5	10,375	3.42	354.85
76.	Calif. Questa Queen, G.	7-2	5	12,780	4.45	535.10
77.	Lucie, gr.	--	11	12,245	3.46	423.73
78.	White Heifer, gr. H.	2-2	32	7,394	4.46	330.34
79.	Mona's Merry M., J.	6-0	7	8,995	5.40	486.14

(1) 303 days. (2) 273 days. (3) 271 days. (4) 267 days. (5) 285 days. M.—Mature.

Owners of cows: Nos. 1-7, Adohr Stock Farms; 8, Arden Certified Dairy; 9-10, D. Beeman; 11-13, Bonnikson Bros; 14-16, Burr Farms; 17, J. M. Christen; 18-20, D. F. Conant; 21-23, R. H. Davis, Modesto; 24, J. W. Coppini; 25-26, M. J. & B. A. Edwards, Escalon; 27-31, El Mirador Dairy, Pasadena; 32-41, C. E. Fisher, Hughson; 42-47, S. G. Gambonini, Petaluma; 48-49, Gambonini & Bolla, Petaluma; 50-51, E. Graham; 52-55, H. G. Gross; 56-57, C. F. Holman, Stockton; 58-62, L. A. County Farm; 63, J. H. Meyer Estate, Watsonville; 64-65, C. L. Mitchell, El Monte; 66-75, F. F. Pellissier; 76, University of California, Davis; 77-78, C. W. Walters, El Monte; 79, Winsor Farm, Bonita.

SALE OF STOCK AT SOUTHERN CALIFORNIA FAIR

A sale of show stock is being planned and worked out by the Southern California Fair at Riverside, October 11 to 16. The object is to promote and in every way encourage the personal, direct sales of all classes of livestock at this fair. A catalogue will be published and circulated before and after the fair and a general system of advertising will be inaugurated to popularize this effort. Exhibitors are asked to consign as many of their show animals as they wish. These will be catalogued and advertised. There will be no auctioneer or ring sale and no expense to the consignee except the cost of space in the catalogue, which will be at a low figure. Already there have been a large number of consignments and the indication is that this new departure in promoting sales at fairs will be a marked success. The Southern California Fair has always been a farmers and ranchers fair and this matter of promoting sales will be an additional encouragement for farmers' attendance.

Sir Aaggie DeKol Mead

Bred in the richest Aaggie Acme-De Kol of Valley Mead cross, he should be one of the greatest young sires of the breed.

Five of his seven nearest dams average:

Butter	2 Years	2,040.97 Pounds
Milk	2 Years	41,547.20 Pounds
Butter	1 Year	1,130.66 Pounds
Milk	1 Year	23,096.60 Pounds

His seven nearest dams average:

Butter	7 Days	30.47 Pounds
Milk	7 Days	627.60 Pounds

His calves are just what we could expect from a long succession of great sires and dams, and in their present state of development fulfill every promise in the pedigree of their great sire.

Good business judgment will eventually prompt you to place at the head of your herd a bull of Aaggie Acme-De Kol of Valley Mead breeding.

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Fred Hartsook LANKERSHIM, CALIF. and A.W. Morris & Sons Corporation WOODLAND, CALIF.

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grades or pure breds, now is the time to carefully cull your herd, dispose of the least desirable and add a few that will raise the standard. Make your herd better.

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A May 1920 son of the champion Westward Ho and out of a 10,500 pound daughter of the 1919 Chicago champion. A 14 months old son of Glenside Royal and out of Princess Clay a cow of beautiful type and with over 12,000 pounds milk. Also have a few younger bulls and heifers. Prices moderate and all guarantees. Here is your chance. Address
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A few choice young bulls, big, heavy-boned husky fellows sired by DON PERFECT 2ND, one of the best sires in the West. Priced right and guaranteed.
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POULTRY

Continued requests are being received by the California Cultivator for varieties of poultry not advertised in our columns. If any of you, our readers and friends, have any you wish to dispose of, send a small advertisement to this office and you will be doing our readers a service as well as yourselves.

Day Old Pullets—Here is your chance to get day old White Leghorn and Ancona chicks guaranteed at least 90 per cent pullets. We are taking orders fast for August and September delivery. We also have R. I. Red and Barred Rock chicks but do not separate the sex. All chicks are from strictly thoroughbred laying stock and are hatched right and shipped by Special Delivery Parcel Post. Send for prices and get your orders in at once. We also have a limited number of pullets from two to four months old and yearling hens. Orange County Hatchery, Santa Ana, California.

Petaluma Hatchery—Established 1902 by L. W. Clark. White and Brown Leghorn chicks from heavy laying free range stock, every Monday and Thursday. We positively guarantee safe arrival and full count of good strong chicks and no questions asked. Send for prices and terms. L. W. Clark, Petaluma, California.

It's no wonder so many poultry raisers make a failure of the business. Without any knowledge of raising poultry people will branch out expecting to make a success. By putting in practice the valuable contents of POULTRY FOR PROFIT, $1.00 postpaid, success is assured in the poultry business. Cultivator Publishing Company, Los Angeles, California.

White Leghorn Baby Chicks — Walter Hogan stock. We get all our eggs from one flock of over 4,000 Walter Hogan hens that have been carefully Hoganized. Our specialty is first class White Leghorn hens that satisfy our customers. We will have chicks September 1st. Lyon Hatchery, Gardena, California.

Baby Chicks—Barred Rocks and Reds, 25, $5.00; 50, $9.50; 100, $18.00; White Leghorns, 25, $4.25; 50, $8.00; 100, $15.00. Shipped every Monday, Parcel Post, special delivery, prepaid. Established 1915. Hargett & Son, Route 2, Box C, Compton, California.

Chicks Every Week from good layers. Fall Broilers pay. Pullets make good layers. R. I. Reds, Barred Rocks, White Leghorns. Safe arrival guaranteed. Write for circular. Stubbe Poultry Ranch & Hatchery, P. O. Box 67, Palo Alto, California.

Baby Chicks from my heavy laying, carefully selected strain of pure bred S. C. White Leghorns. I am booking orders now for September and October delivery. Good chicks at reasonable prices. Write for particulars. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

White Leghorn Baby Chicks from heaviest laying (Hoganized) stock. Safe delivery live, vigorous chicks guaranteed. No money in advance; pay on delivery. Prices on request. Established 1898. MUST HATCH INCUBATOR CO., 438 Seventh St., Petaluma, California.

Baby Chicks "well hatched are half raised." Petaluma Incubators produce that kind. They have lots of "Pep." We supply chicks. Catalog free. Petaluma Electric Incubator Co., Petaluma, California.

Baby Chix from selected, mature S. C. White Leghorn hens. Safe arrival, full count, strong chix, insured. Hawley's Hatchery & Poultry Farm. Route A Box 315A, Lodi, California.

Barred Plymouth Rocks — "Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Vodden, Los Gatos, California.

White Leghorn Baby Chix from Petaluma's heaviest producing stock. We guarantee safe arrival. Literature on request. Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

Watch Us Grow: Fall chicks, Rhode Island Reds, B. Rocks, White and Brown Leghorns and Anconas. E. W. Ohlen, Campbell, California.

"Eastman's Bred-to-Lay" Barred Rocks. Fall Chicks—March, April pullets. Fairmead Poultry Farm, Fairmead, California.

Success in business is attained by experience and knowledge. The poultry business can be made to pay by following the teachings and information contained in POULTRY FOR PROFIT, $1.00 postpaid. Cultivator Publishing Company, Los Angeles, California.

SEEDS AND PLANTS

For Sale—Several hundred each of Pyracantha Yennanensis Cotoneaster pannosa, Eugenia — Strong plants in gallon cans and field-grown stock. C. F. Palmer, 1622 Bushnell Avenue, So. Pasadena. L. A. 'phone 35679.

Reliable Seeds—Ask your dealer or write for our Reliable Seeds and instructive catalog. AGGELER & MUSSER SEED COMPANY, 620 S. Spring Street. Branch —767 S. Central Avenue, Los Angeles, Cal.

Dahlia Bulbs — Agents Wanted. Cash Nursery, Sebastopol, California.

GOATS

For Sale: Pure Toggenburg Doe $250.00. Pure Toggenburg buck kid $25.00, 7/8 Toggenburg doe $10.00, two 15/16 Toggenburg doe kids $15.00 each, $275 for the five. F. Edward Peterson, Kingsburg, California.

For Sale—Pure Swiss Toggenburgs, does and bucks, from finest milk strains. La Corona Goatery, R. 1-416, El Monte, California.

FARM LAND FOR SALE

FARM RENTERS

You can become a farm owner on terms very much like those you are now paying to rent land. We have deep, rich soil with complete irrigation and drainage systems. We are willing to cooperate with hard working, reliable men who want to become owners of farms. Sutter Basin (in the heart of the Sacramento Valley) is your opportunity. Write now.

SUTTER BASIN COMPANY,
California Fruit Bldg., Sacramento, Calif.

For Sale: 2¾ acres under good irrigation system. One of the most beautiful homes in San Joaquin Valley; 6 rooms, bath, 2 porches, windmill, large barn, garage, grain house, 2 chicken houses, shed, chicken yards, large garden, 1½ acres in alfalfa, fruit trees, grapes, arbor, black berries, large lawn, and shade trees. On main state highway, 1¼ miles from Ripon, California. Price $6,500, terms. Buy of owner, Dr. F. H. Berg, Ripon, California.

For Sale: 45½ acre dairy, milking 28 cows; 30 acres alfalfa, modern sanitary barn and milk house, shop, tools all complete, 6 room house and bath, family orchard. Price reasonable, terms. For further particulars address Box 271, Soledad, California. Phone 19F5.

Lake County Land for Sale—Bearing pear and prune orchards, dairy and stock farms. Alfalfa and grain land and other properties. Address Joe Hyman, Lakeport, Lake County, California.

125 Acres, Tulare County, clear, level, plenty water for irrigation. Sell or trade for Southern California property. $12,000, terms. Inquire owner, Jas. S. Beardsley, Julian, California.

For Sale — Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

CATTLE

For Sale — Several registered Guernsey bull calves, one old enough for service, Edgemoor Farm breeding, reasonably priced. Apply to Dr. J. A. Woodside, Santee, San Diego County, California.

Guernseys — Grape Wild Farms—Berkshires—Young bulls, from calf age up to 16 months old, of May Rose breeding and out of A. R. cows. Bred sows and gilts, service boars and pigs of both sexes for sale. Grape Wild Farms, Escalon, California. A. B. Humphrey, Proprietor.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Berylwood Stock Farm—Breeders of registered Holstein cattle and Duroc-Jersey swine. Every cow an A. R. O. and T. B. tested. Bulls and females for sale. J. W. Snodgrass, Hueneme, California.

Yearly Record Holsteins—Bulls from 500 to 1,000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California

Some Choice registered Holstein heifers and bulls of serviceable age for sale. J. W. Scudder, Escalon, California.

Winsor Ranch Jerseys—Bull calves with production behind them, at reasonable prices. BONITA, CALIFORNIA.

MACHINERY

For Sale or Exchange—Union Tool 12-25 Sure Grip Tractor in practically new condition. Price reasonable. Will sell on terms or trade for real estate mortgage acreage or lots. C. F. Seccombe, Ventura Blvd. and Corbin Avenue, Van Nuys, California.

For Sale 40 rebuilt windmills, tanks, pumps, steel towers, cylinders, rods. Special new 1,000-gallon galv. tanks. $37.25; 2,000, $49.25; 3-in. irrigating pipe, $13.75; 4-in., $17.75; also used pipe. Why pay more? Demmitt, 120 No. Main, L. A.

For Sale: Beeman Tractor in good condition, with plows and cultivator attachments. Two Hundred Dollars cash. W. Lee, 7263 Santa Fe Ave., Los Angeles, California.

For Sale—Acme Ensilage Cutter No. 24, pipe and accessories. First class mechanical condition; used only one season. Price $200.00. Arden Dairy, Inc., El Monte.

For Sale—Pomona Pump, 28 head; 30 Holt tractor, Saunders plow, disk cultivator. Clarence Wagner, Terra Bella, California.

LIVESTOCK

Shorthorns, Shropshires, Berkshires, Shetland Ponies, Bronze Turkeys. W. P. Rocks, Butte City Ranch, Box C, Butte City Glenn County, California

Polled Herefords and Durocs — Diablo Stock Farm, G. W. Emmons, Prop., Danville, California.

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Corn Harvester cuts and piles on harvester or winrows. Man and horse cuts and shocks equal Corn Binder. Expressed to every state. Only $28 with fodder tieing attachment. Testimonials and catalog FREE showing picture of harvester. Process Harvester Co., Salina, Kansas.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT. Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

TREES

FOR SALE — 100,000 SOUR ORANGE SEED BED STOCK; WASHINGTON NAVEL, VALENCIA LATE ORANGES AND EUREKA LEMON TREES; ALSO FUERTE, LYON, PUEBLA AND DICKEY "A" AVOCADO TREES. T. J. WALKER, FIRST NATIONAL BANK BUILDING, SAN FERNANDO, CALIFORNIA.

For Sale—Grafted walnut trees, also citrus and deciduous trees. Order now for 1922 delivery. Get my prices. Ketscher's Nursery, 1101 E. 4th Street, Santa Ana, California. Phone 572-W.

Nursery Stock: Extra fine Ehrhardt budded walnut trees. V. Ehrhardt, Minnie Street, four blocks south of gas plant, Santa Ana, California. Phone 454-M.

Citrus Nurseries, Murphy Oil Company, East Whittier California. Selected stock for sale; inspection invited.

DUROC-JERSEYS

Weanling Boars and Gilts by Pathfinder Wonder (Great Wonder I Am ex an 800 lb. Pathfinder sow) for $10 each. Bred sows and gilts. Derryfield Farm, Capital National Bank Bldg., Sacramento, California

For Sale—Pedigreed Duroc-Jersey hogs, pigs, none better, priced low. Large kind, Orion's Defenders, Pathfinders, Rhode Island cockerels. John Kincaid, Mayflower Stock Farm, E. Bakersfield, California.

Greenwood Farm Durocs — Moderate prices on bred gilts and weanling boars. Select individuals. Most popular breeding. H. C. Witherow, Mgr., Live Oak, Sutter County, California.

Boyanna Big Type Durocs — Breeding stock, priced right for sale. Inquiries invited. Satisfaction guaranteed. J. Boyd Harrold, Dixon, California.

Big Type Durocs—Better Durocs at right prices. Harvey M. Berglund, Dixon, California.

Winsor Ranch Durocs—The best of stock at reasonable prices. BONITA, CALIFORNIA.

BERKSHIRES

Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Calso Orchards, Martinez, California.

POLAND-CHINAS

Lendorris Ranch Polands — Big type Poland Chinas of all ages for sale. The kind that makes weight quickly. Weanling boars and gilts sired by Lendorris Liberator out of Lendorris Liberty Bond sows. Now ready for delivery. W. L. Haag & Son, Hanford, California.

Registered Poland Chinas. 40 tried brood sows; 40 gilts. Some choice young boars all at reduced prices to move at once. These Polands are as good as can be had anywhere at any price. W. D. Trewhitt, Route B Box 47, Hanford, Calif.

Big Boned Poland Chinas—Bred gilts and young boars priced to sell at once. Young stock, either sex, for sale at all times. Bassett Bros., Hanford, California.

WANTED

Wanted Job on Ranch: No objection to long hours or hard work, will stay on job and will work for years if only given proper care. Will make your farm more efficient and livestock more profitable. Yours for better agriculture, Flink's Perfect Silo Seal. Booklet, E. Merle Stedman, Escalon, California.

Wanted—Walnut Meats and Cull Walnuts. We have been in this business 16 years; solicit culls for cracking only, paying cash. Fred L. Mitchell & Son, 214 French Street, Santa Ana, California. Phone 551-M.

Wanted — Unsulphured Calimyrna and black figs and other unsulphured fruit. Write for information. Martin A. Witt, 120-122 West Ann Street, Los Angeles.

We Will Buy your Calla Lily roots. If you have 100 or more, write us. Sevin-Vincent Co., 512 Washington St., San Francisco, California.

Wanted—Idle canning or evaporating factories. Give full information and lowest cash prices. Address Box 10, Cultivator.

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Save Your Roof for 15c a gallon with Asphaltoid. Direct from producer to consumer permits this low price of 15c a gallon. The finest roofing and preservative paint under sun. This is a natural product—why pay more for acid treated asphalt that eats your roof? Mail orders, barrel lots promptly shipped. Equally good for shingle, paper or metal roofs. Woolner Oil Co., 4th and Commonwealth, Los Angeles.

Roofing Paper—
Firsts complete with nails and cement.
1-Ply $1.25; 2-Ply $1.60; 3-Ply $2.20.
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Catalogues and Booklets, office forms and correspondence stationery for the nursery, seed and florist trade; half tone cuts of many standard plants. Correspondence invited. The Kruckeberg Press, 236 Court St. Los Angeles

TURKEYS

Large Number of Choice Bronze Toms and hens, also geese and herding Collie Dogs. Shipped from St. Helena and San Miguel. John G. Mee, San Miguel.

Bourbon Red Turkeys, Buff Orpingtons. The Ferris Ranch, Reservoir Street, Pomona, California

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Pedigreed Flemish Giants — No fancy prices. Maud Beeching, 1578 W. 46th St., Los Angeles.

FOR RENT

For Rent: 40 or 75 acres with buildings, in San Fernando Valley, good land and almost frostless, excellent for potatoes, melons and winter garden truck. 13 acres in bearing apricots. W. Planalp, 4635 Melbourne Ave., Los Angeles.

MISCELLANEOUS

Dairyman—I have 56 acres in fine stand alfalfa with other land available near boulevard about 20 miles from Los Angeles. Want dairyman with 50 to 60 first class dairy cows to locate on place and buy hay. Can make good proposition. No buildings. C. F. Seccombe, Ventura Blvd. and Corbin Ave., Van Nuys, California.

BUILDING MATERIAL

POULTRY RAISERS ATTENTION!
For Sale—Lumber direct from our Northern Mill—
⅝x4-4 Ft. Ceiling.....$28.00 per M
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⅝x4-8 Ft. Ceiling..... 40.00 per M
1x4 Flooring ..... 38.00 per M
1x6 Drop Siding..... 35.00 per M
VERNON LUMBER COMPANY,
1935 E. Vernon Ave., Los Angeles, Cal.
Phone South 2875.

SIXTY-SEVENTH ANNUAL STATE FAIR

(Continued from Page 255)

vada. On the way there are many opportunities for the development of hydro-electric power. These opportunities she has used and is now considering still further development through use of some of the power now wasting in the Colorado River. This, in connection with other communities, private companies, and under direction of the reclamation service of the U. S. government. This exhibit visualizes the city's great accomplishment and in addition is featured with many striking electrically lighted views. The exhibit is in charge of Charlie Bayer, secretary Pomona chamber of commerce, and L. E. Moselle of Los Angeles bureau of power and light.

The fish and game commission occupies its old location, and almost as much more. It has been built out into the open and enclosed with a greater number of cases containing rainbow trout, in fact, all the fish of California streams.

Coming up the east side, we first see Santa Cruz County's exhibit of apples, which make up one of her greatest products, and a series of remarkably fine photographs of scenes taken in her big tree groves.

Tulare's citrus exhibit attracts attention perhaps first of all to her remarkably fine grapefruit, then Valencias, lemons and particularly Lily Lucerne. Lily is a remarkably fine looking girl dressed in alfalfa, calling attention to Tulare's 100,000 acres of alfalfa, and Lily has with her her pet, a beautiful representative of the dairy.

The big feature of Colusa County is rice; green rice, paddy rice, and in all forms of manufacture. Then there are sorghums, broom corn, and general farm products. Lemons, some of the handsomest ever grown, have come in from the Mills ranches up against the western foothills. Prunes, monsters, almost a wagon load (in fact, 25 orchard boxes) are shown, guaranteed every one to be from a single tree only ten years old. Colusa is some prune county.

Kern shows plenty of oil derricks, but more, a scene along her eastern foothills with hills made of citrus and other fruits. It is a striking exhibit in relief designing, and all made more attractive by running water tumbling into pool at its lower edge.

Turning down the western side of the hall, nearest the door comes Humboldt. Every resident of Humboldt is proud of that exhibit. There are Winter Banana apples, wonders in quality, beautiful to look upon and placed so as to bring out their fullest beauty. Then there are some 60 varieties of apples in commercial packages, five boxes to the lot. Every one of these apples, even the Gravensteins, are direct from the tree, that is, not an apple from cold storage. Not entirely agricultural, but still made possible by agriculture, is Humboldt's exhibit of manufactured woolens. There are some wonderful blankets and suitings, which many of us did not suppose were made in California. Humboldt woolens will not be affected by the Truth-in-Fabrics act.

And San Francisco is here—first time ever. She is hardly in the agricultural class, and yet there are some for-sure agricultural exhibits. Many of these are from the county poor farm. This exhibit is largely featured by the board of health and its various divisions.

Way down in the corner is the exhibit of California's northermost six counties; Modoc, Lassen, Siskiyou, Shasta, and Tehama, and they show some wonderful products of "Air, Soil, Water and Climate." Recreation op-

portunities in the wonderful forests and by the stream sides are also featured. Honey, apples, alfalfa are exhibited in abundance.

Sacramento County has always acted the big brother part in this matter of competing for prizes. She has acted the host, and said "Boys, go to it, do your best, win the money, and we'll put up a show to make you all hustle." And Fred Brosius has done it. He is still in charge of the exhibit, and it's a beauty in three sections. The center is a monster plate glass case with nearly all kinds of fruits within. We don't know that we have seen anything bigger in the whole state fair than Fred's onions, and he has a radish there something like a yard long and a crook-neck squash hardly large enough for some of us to live in, but big enough for some whole families of fairies. Then there are beans, corn, pumpkins, celery, nuts and Sacramento river pears—wonders and beautifully exhibited.

The awards are yet not made and may not be for some days. There is a big job for the judges.

I have only touched one building. The train is waiting to carry this to the Cultivator office. "The boys" will handle the livestock and everything else next week.—C. B. M.

COOPERATION PAYS ALL ALONG THE LINE

"Never before has the interdependence of the country and city, of agriculture and industry, been so forcibly emphasized as during the last few months," J. A. Craig, president tractor division of General Motors Company, declares.

He says: "The present economic condition, resulting from post-war deflation, proves conclusively that the farmer is just as dependent upon the city as the city is upon the farmer. In the highly specialized system of American civilization no one class or group can prosper independently of the other groups.

"When the farmer refuses to buy, or is unable to buy, factories close down, working men are thrown out of employment, the consumption of food drops, the prices of farm products drop lower and lower, banks refuse to lend money and call in their outstanding loans, and business is at a standstill.

"The farmer is dependent upon the city worker to buy what he raises. The manufacturer is largely dependent upon the agricultural communities to buy what he makes and if his goods are not sold his employes are thrown out of work and their buying power is crippled, which immediately affects the sale of farm produce, banks tighten up and the condition becomes worse than before.

"Thus, we have an endless circle of dependencies — which explains our recent business depression.

"Right now, everyone wants business to open up, but most of us wait for the other fellow to make the first move.

"Mind you, I am not saying that the fault is with the farmer or the manufacturer or the banker or the dealer or any other one class. It's everybody's fault; it's everybody's problem; and if everyone will do his full share without waiting to see what the other fellow is going to do the problem will soon solve itself.

"The farmer should buy what he needs. This is nothing more than common sense, because if a man really needs a thing he pays for it whether he buys it or not. Credit, as applied to so basic an industry as agriculture, should be stretched to the limit.

"The manufacturer should do everything within his power to keep the wheels of industry moving, even though it may be necessary to temporarily operate at a loss. By so doing he is keeping the city man employed, thereby insuring his purchasing power and safeguarding the future of the manufacturer's own interests.

"Of course, when you come right down to it, few of us are really philanthropists at heart. We Americans of the great middle class, including farmers and implements dealers, are more interested in our own little problem than in the matter of 'saving the country.'

"But, it isn't a question of philanthropy. It's a question of good business, a question of doing a thing because it will pay, a question of constructive selfishness. And I'm not trying to pass the buck to the other fellow. Right now, we are lining up our business in accordance with this prescription."

SELECTION OF BELTS

The belts which are ordinarily used on the farm machines are usually either of stitched canvas, rubber or leather.

In the stitched canvas belt, cotton is the material which is generally used in the making. Several layers or plies of cotton duck are overlaid upon each other and sewed or stitched together so as to increase the strength and prevent excessive stretching. They are sometimes impregnated with oils or greases and are painted with an elastic paint so as to further increase their durability.

Rubber belts usually have cotton duck as a backbone, the duck being laid up in several layers and thoroughly impregnated with a rubber compound forced into the plies and vulcanized under terrific pressure, which unites the rubber and the duck into one practically inseparable body. Rubber belts are not affected materially by atmospheric conditions, though they are likely to be injured by oils or greases.

Leather belts are perhaps the most expensive. The best leather belts are made of the hides of four year old steers killed in the fall, and only the center back strip from the hide is used. Leather belting can be made as heavy and as wide as desired, and can be kept in good condition by being dressed with a mixture of two parts of tallow and one of cod liver oil. Neatsfoot oil can also be used on leather belts, but it will injure rubber belting.

MESQUITE POSTS

The U. S. department of agriculture, Washington, D. C., will mail free to those interested Farmer's Bulletin 1197, "Protection of Mesquite Cordwood and Posts from Borers." Certain borers completely destroy mesquite wood in a few months after it is cut, causing great loss and inconvenience. Wood cut for fuel is commonly piled in wood yards or along railways. In such locations it is subject to borer damage from February until October and is not infrequently reduced to a worthless pile of sawdust and honeycombed sticks. Fence posts are damaged by sapwood-feeding forms in such a way that staples become loose and the posts must be constantly replaced. It has been found that by cutting fuel wood at certain seasons and turning more valuable products in the sun practically all insect damage can be prevented. One of the homely hints given in the bulletin is: "It has been found that extreme heat prevents attack and kills the grubs which may be in the sapwood. Therefore, the best method for treating posts and more valuable material that has to be cut between March and October is to lay them flat on the ground in the sunlight, then after two weeks turn bottom side up and repeat the turning two weeks later. Two turns in six weeks are sufficient to kill the grubs or prevent attack. This method can be used effectively only between April 1 and October 1."

The poultry show at Riverside this fall will exceed in size and importance any feathered exhibit shown in the state this year. Besides having a complete show in all the prominent breeds of chickens, there will be the largest show of bantams that has been made this year, and in addition a wonderful show of pigeons. This is the tenth annual poultry show for Riverside, and in those ten years the records show some wonderful exhibitions. But for numbers and quality the show this fall will exceed any previous effort. A large number of new coops are being provided, and more space will be used than ever before.

In the past two years the Southern California Fair at Riverside has earned the reputation of presenting the largest show of milk goats ever made. Not only has this show been great in numbers, but some of the finest animals in the United States have been on exhibit here. The show this fall promises even to exceed that of last year and the year before. The same committee are at work and have received such encouragement from prominent breeders of milk goats of all varieties that they are able to assure a still better show than previously.

The rabbit industry in Southern California is evidently receiving a renewal of interest and activity, as the management of the Southern California Fair has received information from committees at work that it will require, to house their exhibit this fall, more hutches than they have ever needed before. A special building is provided for this exhibit, and it will be one of the attractive features of the fair.

The race meet at the Southern California Fair this fall promises to exceed that of last year, which was reputed to be the greatest meet on the coast last season. The best horses in the various circuits throughout the entire coast are planning to come to Riverside. Large purses have been hung up in the various events, and five days of lively racing are promised.

The Imperial County farm bureau has named its committee to cooperate with similar committies of business bodies of the valley to investigate the Boulder Canyon farm project. The members are Sam P. Rowe, Westmoreland; C. W. Brown, Calipatria; R. H. Clark, El Centro; Benjamin Vlier, Calexico; W. R. Farmer, Holtville.

The California Packing Company will soon have a new cannery operating at Santa Ana.

DISPERSAL SALE

37 Registered Holsteins 37

Owned by JOHN SAXER

Modesto, Cal., Wednesday, October 12

This is one of the choicest herds in Stanislaus County, and for type ranks as one of the most attractive in the state. Splendid production records are also present, as well as popular breeding.

COWS WITH OFFICIAL RECORDS up to over 31 lbs. butter in 7 days.

THREE DAUGHTERS OF SIR SKYLARK ORMSBY HENGERVELD, the famous sire of great producers, among his daughters being the twice 34 lb. cow Gerben Abbekerk Maid.

A DAUGHTER OF THE GREAT HEIFER MOORLAND COLANTHA ROSE, sired by a 32 lb. son of King Mead of Riverside.

Guaranteed breeders; tuberculin tested and sold subject to retest by the buyer.

Catalog free on request.

Auctioneers:
Ben A Rhoades, Los Angeles
John A. Davis, Manteca

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

WIPE OUT EVERY RAT AND GOPHER

Don't be satisfied with trapping or poisoning just a few. Exterminate the whole bunch—old, young, big and little. A single pair left, in a short time, will produce enough to overrun the place. That's why we say KILL THEM ALL.

Rats do millions of dollars' damage each year. They kill chickens, destroy grain, damage buildings and property. They are filthy, dangerous, destructive, disease carriers. Wipe them out—not just one or two at a time—but the entire colony.

Easy to Get Every One

A new scientific discovery, called Imperial Virus, now enables you to rid your place of every rat, mouse and gopher easily, quickly, entirely, without trouble, muss or danger. It is absolutely guaranteed to clean out every one of them.

Not a Poison

Imperial Virus is absolutely harmless to humans, domestic animals, poultry, etc., but is sure death to rodents, and rodents only. Fed to them on bread, grain, etc., it gives them a fatal disease, which they give to others and are all wiped out. Best of all, they die outside, hunting water and air.

You can spread this Virus in your chicken house, around gopher mounds, anywhere, knowing it cannot possibly harm any fowl, dog, cat or other domestic animal.

Get Yours Free

The manufacturers of this amazing Virus are anxious to get immediate distribution everywhere and make this big offer. (Act now or clip this offer for future reference, as it may not appear again.) Send $1.00 (bill, money order, check, etc.) to the Imperial Laboratories, Room 138, 2110 Grand Ave., Kansas City, Mo., and you will receive two regular full sized (double strength) $1.00 packages, postpaid. Use one bottle to rid your own place of these pests. When you see how easy it is, tell a neighbor about it and sell him the extra package, making your own cost you nothing. You will be told also how you can make money by telling your friends about it. You need send no money. If you prefer, simply pay the postman $1.00 and postage when you get the two packages. If you are not satisfied after thirty days your money will be refunded.

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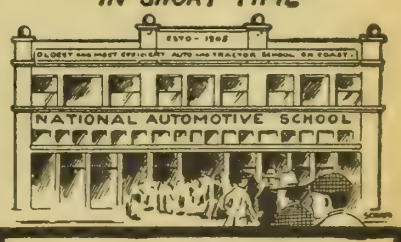

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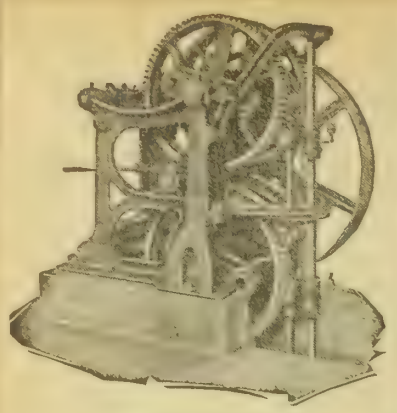

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Coccidiosis

By Jean A. Koethen

THE cause of coccidiosis is a matter on which the people who tell us how to cure it have very little to say. They tell us it is an infectious disease "caused by protozoan organisms known as coccidia" which may exist in small numbers in the intestines without causing apparent harm, but when present in sufficient numbers they destroy the mucous membrane lining the intestines and cause death. When we ask them what causes the fatal multiplication of these organisms they shake their heads and mumble something about "bad management" or "infected soil."

Cause

Now, there must be a cause, of course, and if the lay mind dare intrude on what the experts will not face, it amounts to this:

Coccidiosis is a disease which is rarely or never seen except in large flocks, and most frequently it occurs in flocks that have been kept on the same soil for several years. The soil may have been purified by a green crop between hatching seasons, but the chicks have run in the same yards and slept in the same houses year after year. Under such conditions what happens? This year an occasional chick drops off with the disease, due, perhaps, to its getting more or less than its share of the chick ration, or to a drink of water fouled by droppings or to a want of that immaculate cleanliness which is the first desideratum in chick culture. Nobody pays much attention to the death of a few chicks, that is expected; but the soil is contaminated by its droppings just the same, and the coccidia which were originally harmless residents of the sick chick's intestinal tract become dangerous inhabitants of the ground which 900 other chicks are running on. This year the whole 900 may escape, but next year's flock, running on contaminated ground, may all be affected.

I have no idea whether it is possible ever to raise chicks on contaminated soil without some cases of coccidiosis, but I do know I should not wish to try. Why, when there is as much unoccupied land as there is in California, should anyone ever undertake to raise chicks on soil he knows is contaminated? Of course, there is the difficulty of moving brooder houses and all that, but a portable brooder house which may be moved each season to freshen soil in orchard or garden would not be hard to devise. The flock would have to be broken up into smaller units, but what of that? Some wise chick raisers have already discovered that it doesn't pay to raise more than one flock on the same ground in a single season, but there are others who run one lot of chicks after another, four or five weeks apart, through their brooder yards, and still wonder that their chicks get coccidiosis.

Symptoms

"Coccidiosis is seldom seen in chicks that are under two weeks or over four months of age," says Dr. Beach of the poultry division. "The usual history of outbreaks of the disease is that the chicks do well until they are a few weeks old, when they begin to look unthrifty, droop and gradually die. It is not at all uncommon for entire flocks of chicks to die in the course of a month or six weeks. The symptoms of the disease do not differ materially from those of some other diseases and are therefore merely suggestive of coccidiosis. The feathers of sick chicks become ruffled and soiled; there is a marked paleness of the skin of the head and of the visible mucous membranes. The sick chicks are inclined to separate themselves from the rest of the flock and stand humped up with their eyes closed for hours at a time unless disturbed. Usually diarrhoea, which is sometimes bloody, is present. A bloody diarrhoea can be considered as positive evidence of coccidial infection. Chicks usually show symptoms for at least three or four days before death occurs." In regard to infection Dr. Beach says: "Coccidiosis is spread by the organisms which pass out with the droppings of diseased birds. Other chicks become infected by drinking water or eating food, litter or particles of soil contaminated by the droppings of diseased chicks. It has been demonstrated that these organisms will remain alive in the soil for a year or more. Therefore chicks that are allowed to run in yards in which infected chicks were kept the year previous are very likely to become infected."

Control

It has been found that a liberal use of buttermilk or clabbered sour milk is the best cure. Hydrochloric acid in the drinking water, a teaspoon to a quart of water, sometimes gives good results if milk is unobtainable, but milk should be used if it can be obtained.

In order to make the chicks drink as much sour milk as is necessary, the mash must be limited. "Feed a small amount of grain night and morning," is Dr. Beach's advice. "Feed mash during the middle of the day, never leaving it before the chicks longer than two hours. Feed greens as usual. Keep buttermilk in fountains constantly before the chicks. The restricted grain ration will keep the chicks hungry and they will consume large quantities of buttermilk. If too much grain and mash are fed and the chicks drink large quantities of buttermilk sour crop is very liable to result. There is no danger of this occurring, however, if the amount of grain fed is small."

In addition to change of diet, most careful sanitary measures are necessary. The chicks should be moved to new ground if possible. If not, the ground of the yards should be spaded and the houses thoroughly cleaned and disinfected. Fresh scratching litter should be spread on the floors daily and swept out and burned every day. Feeding troughs and water fountains are best disinfected with boiling water.

"In most instances, if the above sanitary measures and feeding method are carefully followed, improvement will be noticeable in three or four days, and all signs of the disease will have disappeared in from two to four weeks. The buttermilk will cause the droppings to be somewhat watery, but this should not be considered at all dangerous." The above feeding methods should be employed from the start, when chicks are put in houses and yards in which a flock infected with coccidia was kept the year before."

Prevention

After all, prevention is a good deal simpler than curing, and prevention would seem to demand:

Clean soil. Better brood your flock in a tent with only boxes to sleep in and clean ground to run on, than have it decimated by this plague of large flocks. Dead chicks are very expensive.

Clean houses and brooders. It is a singular thing that coccidiosis never appears before the chicks are two weeks old. When things begin to get a little dirty, then the chicks begin to droop. Can you read the moral to that?

As much room for each chick after two weeks as before. A healthy chick nearly doubles its weight in three weeks. If it has not twice as much brooder room then as it had at the start there will be more filth, less chance for comfortable sleep, danger of a let-down in vigor, which is often the first step toward any kind of infection.

Suitable food. Beef scrap should not be used the first ten days. It is a good plan to begin with a mixture of

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SEEDS

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MACHINERY
OF EVERY DESCRIPTION
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ran and rolled oats, and then to gradually add corn meal, beef scrap and ther ingredients, but as far as I can arn, the poultrymen who use a comercial mash after the first week do uite as well as those who mix their wn. The little chick requires hard rain, mash, greens and grit for grindng them. Just exactly what mixture hall be used is not as important as leanliness, a chance to exercise, unroubled sleep; in short, the favorable nvironment which keeps digestion ormal.

Poultry Queries

(Conducted by Jean A. Koethen.)

Distinguishing Sex

How can we tell which are pullets nd which are roosters in six to ten nonths old chickens? We don't know nything about chickens and they all ook alike to us. We are at a loss to now just what we are buying.—Subcriber, Long Beach.

The rooster stands higher on his legs and has a high, upstanding comb, quite different from the loppy comb of most White Leghorn hens. His tail should be longer and have more of a sweep, but this might not be the case in a "squirrel-tailed" rooster. If you are buying chickens and are not sure of being able to distinguish sexes the safest way would be to go to some disinterested poultryman and ask him to show you the differences, which are not as marked in Leghorns as in the heavier breeds. Once you have the shape of the two sexes clearly in mind you will never forget it.

Roup of the Eyes

One of our turkey hens has become blind in one eye. The eyeball is covered with a growth that looks like cottage cheese and protrudes from its socket a sixteenth of an inch. I washed the eye with lysol water, which removed some of this whitish substance. —Subscriber, Pond City.

This is a good description of roup of the eyes. Washing with lysol water, a creolin solution, a solution of boric acid and chamomile flowers or with peroxide of hydrogen diluted 1 to 3 times with water will remove the exudate temporarily, but it is liable to return repeatedly. If you do succeed in effecting a temporary cure by the use of one of these washes twice a day better kill the bird and eat her before she has another atack. If she does not soon improve, kill her anyway and bury her deep. The axe is the only cure for roup.

SIX WEEKS' COURSE IN POULTRY RAISING

Because of the recent slump in egg prices stress will be laid on the profits per hen in the study of poultry farm management in the six weeks' course to be given in poultry raising. The course, which is to be given at the University Farm School at Davis, will begin September 26.

YEAR BOOK

The Year Book of the U. S. department of agriculture for 1920 is rather later in being issued than formerly, and it gives a distinct shock to its old time readers because of its greatly changed appearance. The change is for the better, and the binding is more like that of a "real book" so that there can be only commendation, yet for those of us who like to keep things as they were in the olden days it is with somewhat of regret that we unwrap the new volume. Instead of the purple or bluish color which has been used since about 1890 it is now bound in a buff buckram. Likewise on the back of the book former volumes have had "Year Book of the Department of Agriculture 1919" while it now simply has the "United States Department of Agriculture," and lower on the back, and much smaller, "Year Book 1920." The binding, the quality of the paper, the halftone illustrations are all wonderfully attractive. The book is about 100 pages larger than most of the preceding numbers, having 888 pages. The first 84 pages are given up to the report of the former secretary, E. T. Meredith, then something over 400 pages to special illustrated articles touching upon European corn borers, home demonstration work, preservation of woods, conserving wild animals and birds, pig thumps, irrigation, phosphorus, breeding and feeding to prevent runts, boll weevil, helping the landless to own farms, good roads, standardization and the farmer's interest in foreign markets. There are over 300 pages in the appendix giving tables, lists of livestock associations, statistics on corn, wheat and other grains, hay, tobacco, fruits, sugar and practically all products of the country.

It is probable that Cultivator subscribers may secure this book by writing to the member of congress representing the district in which the subscriber lives, also the United States senators representing this state will supply the book.

ISLE OF PINES

United States Consul Charles Forman, stationed at Nueva Gerona, Isle of Pines, reports:

"By far the most important foreign commerce of the Isle of Pines is with the United States. This is especially true in regard to exports, as grapefruit and winter vegetables grown for the American market are the principal products of the island. No sugar or tobacco is produced, and there are no important manufactures. Almost all the manufactured articles locally consumed are the product of the United States and are purchased partly in the United States and partly in Habana. Among these may be mentioned fertilizer, foodstuffs, agricultural implements, hardware, motor vehicles, gasoline and dry goods.

"An interesting minor export to the United States is that of parrots, of which from 1,500 to 3,000 are annually exported to the United States and find a ready demand throughout the country. The price paid per bird is from $1.10 to $1.35, according to size and plumage."

AMERICAN TRACTORS IN FOREIGN FIELDS

In the same way that American automobiles have come to dominate the world's automobile market, so are American made tractors successfully invading every foreign field. Great Britain and continental Europe are using thousands of American machines for farm power purposes, and they are proving the most popular even in spite of the extensive advertising and assiduous propaganda being carried on in favor of homemade articles.

Demonstrations are very popular in foreign countries. They are usually considered very serious affairs by the prominent farmers and often are given a semi-official standing due to the participation of local officials as observers and testors.

Kills Lice and Mites
A.R.M. CARBOLINEUM
For spraying or painting Poultry Houses, Roosts, Nest Boxes, etc., manufactured by
ARTHUR R. MAAS, Chemist
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OTHER QUALITY PRODUCTS

especially prepared for use on the farm.

Oronite Roof Paint

A high-quality protective coating for prepared roofing and metal roofs.

Mica Axle Grease

Gives a durable, smooth lubricating film under every pulling condition. Keeps the axle cool; no hot-boxes, no gumming. The MICA makes it better.

Eureka Harness Oil

Preserves the original strength and life of leather and keeps it soft and pliable. Keeps harness "new looking."

Standard Hand Separator Oil

Correct Lubrication for your Hand Separator, under the conditions of high speed and close fitting parts.

Before *the rains start again*

Examine your shingle roofs. They need protection to successfully come through the heavy rains of another year's weather.

ORONITE SHINGLE OIL
Preserves Shingles

Oronite Shingle Oil is a high-quality preservative for all shingles (either on roofs or on side walls)—to make shingles last longer through drenching rains, whipping winds and hot, drying sunshine.

Oronite Shingle Oil penetrates the fibre of the shingle with a moisture-resisting preservative that retards the evaporation of natural oils in the wood—the cause of cracking and warping—and counteracts the effect of age and exposure.

Oronite Shingle Oil is especially prepared to make shingles withstand continual exposure. It will keep your roof in good condition and give it longer life. An application of Oronite Shingle Oil to an old roof *now* may save the cost of repairs or an entire new roof next season.

You can mix Oronite Shingle Oil with colors and obtain an attractive stain and all the advantages of this shingle preservative. Ask our nearest agent for color formulas.

STANDARD OIL COMPANY
(California)

ORONITE *means* QUALITY

Los Angeles Markets

Los Angeles, September 7, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price 47 cents.

Prices Creamery Extras last week:

Aug.	31	Sept. 1	2	3	5	6
'21 ...	47	47	47	..	..	47

CHEESE

Brokers' prices:
California flats, 18@20.

EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 44; case count, 40; pullets, 35; pewee pullets, 23.

Extras last week and year ago:

Aug.	31	Sept. 1	2	3	5	6
'21 ...	41	41	42	..	..	44

POULTRY

Price to producers: Hens, 20@30; colored, 33; broilers, 33; roasters, 32; old roosters, 18; fryers, 29; ducks, old, 12; ducklings, Pekin, 3½ up, 25; others, 25; geese, 25; turkeys, live, young tom, 50; dr., 55; old, live, 40; dr., 41; hens, live 40; dr., 44; squabs, 45@47.

Belgian hares, live, 11@15; old 8.

LIVESTOCK

Los Angeles, Sept. 6. — Weighed and delivered off cars without food or water:

Hogs (hard grain fed), 125 to 175 lbs., 11.50; 175 to 225 lbs., 12.00.

Cattle (on foot, gross weight): Steers, good, 6.50; medium, 6.00; cows, good, 5.00; medium, 4.50; bulls and stags, 2.00; calves, 125 to 150 lbs., 7.00; 175 to 225 lbs., 6.00.

Sheep: Ewes, 3.50@4.00; lambs, 8.50@9.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock September 6, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies heavy. Demand and movement limited, market firm. New Stock: Mostly 75@90 per lug, White Rose No. 1, sacked per cwt., best 2.00@2.25, few 2.50. Stocktons: Burbanks, fancy mostly 2.50@2.75, choice 2.40@2.75, choice 2.40@2.50, Baking stock, 3.00@3.25. Sweet potatoes: Supplies moderate. Movement slow, market weaker. Locals: No. 1, 1.10@1.35 per lug; No. 2, 50@75 per lug.

Onions: Supplies liberal, movement slow, market steady. Stocktons: White Globes and Yellows. sacked per cwt. mostly 2.50@2.75. Locals: Whites, sacked per cwt., 2.25@2.50, Browns 75@85 per lug, Whites 85@90 per lug.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock September 6, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Supplies light. Demand moderate, market weaker. Per lb.: Kentucky Wonders mostly 4@5 per lb.; Green pods mostly 4. Limas: Supplies light, movement moderate, market steady, mostly 3½@4.

Beets: Supplies moderate, market steady. Per dozen bunches mostly 35@40.

Cabbage: Supplies increasing. Market firm. Per field crate 2.25@2.50.

Carrots: Supplies moderate, market steady, per dozen bunches mostly 35@40.

Celery: Supplies moderate, movement slow, market steady, per crate 5.00@6.00.

Corn: Supplies liberal, movement moderate, market steady. Local: Per lug, wide range in price, 50@60, poorer 40, few best 75.

Cucumbers: Supplies liberal, movement slow, market steady. Locals: Lugs mostly 35@40; pickles, 1.00@1.50 lug.

Eggplant: Supplies liberal, demand moderate, lb., 3@4.

Lettuce: Supplies light, market firm. Local: Field crates mostly 1.10; poorer 75@85 per crate; fancy 1.25.

Okra: Supplies light, market steady, fancy, small, 10@12 per lb.; poorer, 7@8.

Peppers: Supplies heavy, market steady. Locals: Bells mostly 50@60 lug; poorer 40; Chili, 3@4 per lb.

Radishes: Supplies light, market firm, mostly 20 per dozen bunches.

Squash: Supplies light, market weak. Summer mostly 40@50 per lug.

Tomatoes: Supplies moderate. Demand and movement moderate, market steady. Locals: No. 1, per lug, mostly 75@90; few best, 1.00; No. 2, 50@60.

Turnips: Supply moderate. Market steady. Per dozen bunches 35@40.

FRESH FRUITS

Apples: Supplies heavy. Demand and movement very slow, market weak. New stock: Mostly 40@50 per lug, few best 60. King Davids, loose, per lb., 4@5. Sebastopol: "B" grade Gravensteins, medium to large sizes mostly 1.85; small sizes, 1.25@1.65; small, 1.75@2.00; Alexanders, fancy to large sizes, 2.00@2.25; small, 1.75@1.90, Skinners Seedling fancy 4-tier, 4½-tier 1.25@1.50. Watsonville: Fancy 4-tier Bellefleurs 1.70@1.75, "B" Grade 4-tier 1.55@1.60.

Cantaloupes: Supplies heavy, demand and movement moderate, market weak Homegrowns: Tiptops, per crate, 40@60; Paul Rose, 40@60; Rocky Ford, 40@60. Casabas: Supplies liberal, movement slow, 1@2 per lb., according to quality.

Figs: Supplies liberal, market stronger. Locals: Per box, 1.00; few, 1.25@1.50; poorer, 50@60; small boxes, 75@1.00; poorer, 65.

Grapes: Supplies liberal, movement moderate, market firm. Wide range in quality. Muscats, 4@5; Tokays, 8@9 per lb.; few fancy Hamburgs, 5@5½; Concords, 10 per lb.

Peaches: Supplies heavy. Demand moderate, market firm. Freestones mostly 1.00@1.25; few fancy, 1.50@2.00; poorer, 60@90; Clings, fy., 1.25; Salway, 5.

Pears: Demand and movement good, market firm. Bartletts mostly 5@6; few fancy, 7; poorer, 4 per lb.

Prunes: Supplies light; demand limited; market dull. Various varieties, 3@5 per lb., mostly 5, according to quality.

Quinces: Lug, 90@1.00.

Watermelons: Supplies very heavy. Demand slow, market steady. Locals: Klondikes mostly 1 per lb., poorer, ½@¾ per lb.

CITRUS FRUITS

Grapefruit: Supplies liberal, movement moderate, market firm. Local: Per box, market pack, mostly 2.50@3.00; smaller, 2.25; few best, 3.25@3.50.

Lemons: Supplies liberal. Demand moderate, market dull. Local: Market pack mostly 3.00@3.50; few, 4.00; loose box mostly 2.00@2.25; poorer, 1.50; lug, 50@75.

Oranges: Supplies moderate. Demand moderate, market firm. Market pack 3.00@3.50, small sizes 2.25@2.75, loose pack 1.00@1.50, mostly 1.00@1.25.

HONEY

Supplies of white honey nearly cleaned up account short crop and good demand. Production of fancy grades considered only 25 per cent of normal. Moderate supplies of other grades new crop but old crop supplies nearly exhausted. Light nectar flow from beans anticipated. Demand fairly active past two weeks and prices advanced slightly. Market firm at present. Carload f. o. b. usual terms at loading points. White orange, 10½@11¼; white sage, 9½@11; light amber sage, new crop, 7@8; old crop, 7; light amber alfalfa, new crop, 5¼@5½; old crop, few sales, 5½. The quality of new crop alfalfa and sage said to be variable, due to the unfavorable season. Beeswax: Supplies moderate, demand light, market weak. Growers receiving 22@23; dealers asking 25 for crude wax.

GRAIN AND FEEDS

Grain Exch. price bid September 6:
Barley: 100 ton lots, Dec. del., 1.30.
Milo: 100 ton lots, 1.55.

HAY

Alfalfa Growers of California report:

Demand showed further improvement in nearly all parts of the state. Prices firm, ranging same to 1.00 higher.

We have secured a credit of $300,000, and more if considered necessary, for making loans to member growers, to be used as needed. The money will be handled by the state exchange, working through the local associations, who will loan to individual growers with their hay as security, loans to be paid back out of the proceeds of the hay. Applications for information and loans will be made to district association.

Demand for fertilizer hay increasing, best prices paid where it has been used longest. We made sale of 200 tons this week in Riverside at $20 a ton, chopped, grove delivery; chopping cost $2 a ton. Since the fertilizer question is becoming even more serious in deciduous fruit districts Southern and Central California, it appears probable that alfalfa hay will also come in use there as fertilizer before long. We are receiving inquiries. Such a general use would mean demand in which quantity would cut no figure; the only limit would be the price.

There were 570 tons of grain and alfalfa hay received on the Los Angeles tracks the week ending September 3, with 190 tons held over.

Prevailing prices last week f. o. b. Los Angeles:

No. 1 Dairy	20.00
Standard Alfalfa	16.00

Quotations by Nichols - Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats	18.00@26.00
Barley	16.00@24.00
Alfalfa, No. 1 Dairy	20.00@24.00
Standard	16.00
Straw	8.00

San Francisco Markets

San Francisco, Sept. 6, 1921.

Quotations made daily by San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

BUTTER

Dairy Exchange quotations Sept. 6:
Extra Choice 45
Rcts. 2 days ending Sept. 3, 576 centals.

CHEESE

Dairy Exchange quotations:
Jack, full cream, street prices....14½@16
Cal. Flats 21½
Cal. Y. A. 22

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases, Sept. 6:

Extras	48½
Extra Firsts	44½
Pullets, Extras	37
Pullets, Extra Firsts	36
Undersized	23

Rcts. 2 days ending Sept. 3, 68,760 doz.

POULTRY

Wholesale prices are:

Young chickens: Leghorns, 1 to 1¼ lbs., 32@33 per lb.; 1½ to 1¾ lbs., 31@32; 2 lbs. and up, 31@32; heavy breeds, 1½ to 1¾ lbs., 32; 2 lbs., 32; 2½ lbs. and up, 35@38; staggy roosters, 20@25; old roosters, Leghorns, 15; heavy breeds, 18; hens, Leghorns, large 25@27; small to medium, 20@23; hens, heavy breeds, 35@38.

Ducks: 20@23 per lb.; geese, 30 per lb.; turkeys, live, 35; dressed, 45; Belgian hares, live, 15; dressed, 18@20; squabs, fancy, 40; do, common, 3.50 per doz.; old pigeons, 2.00.

LIVESTOCK

Western Meat Company quotes:

Cattle: Steers, No. 1, 5¼@5¾; do, second quality, 4¾@5¼.

Cows and heifers: No. 1, 4¼@4¾; do, second quality, 3½@4¼.

Calves: Light weight, 7@8; heavy, 5½@6½.

Sheep: Wethers, 3½@4; ewes, 2½@3.

Lambs: Milk, 6@6½.

Hogs: Hard, fat grain-fed, weighing 125 to 200 lbs., 11½; do, 200 to 250 lbs., 10½; do, 250 to 350 lbs., 9½; light sows, 9½; heavy, 8½.

POTATOES AND ONIONS

Street prices:

Potatoes: White, fy., per cwt., 2.15@2.25; Salinas, 3.00; Sweets, 3@3½ per lb.; Turlock Nancy Hall, 3@3½ per lb.

Onions: New yellow, 2.00@2.10; brown, 2.25.

Green Onions: 1.25 per box.

Garlic: 3@5 per lb.

VEGETABLES

Wholesale selling price:

Beets: 1.75@2.00 per sack.

Beans: Blue Lake, 4@5; garden, 5@6 per lb.; Lima, southern, 7@8; river, 8 per lb.; Italian, 5@6.

Carrots: Sk., 1.00.

Celery: 4.00@5.00 cr.; 25 per bunch.

Corn: Alameda, 2.50@3.00 cr.

Cucumbers: Bay, 40@50; fy. River, 75@1.00.

Eggplant: Lb., 3@5; Livingston, 6@7.

Lettuce: Crate, 1.25.

Okra: 1.00@1.50 per box of about 10 lbs.

Peppers: Bells, 3@6 lb.; 75@1.00 lug; Chili, 3@5 lb.

Squash: Bay, 40@60 per 40 lb. lug; Italian, Peninsula, 75@1.25 lug; neck, 25@35 lug.

Tomatoes: Sacramento and Peninsula, 1.00@1.50; few, 1.75@2.00 per cr.

FRESH FRUITS

Apples:. Bellflower, 3½ and 4 tier, 1.75@1.85; 4½ tier, 1.50@1.65; Gravensteins, 3½ tier. 2.25@2.50; 4 tier, 2.00@2.25; 4½ tier, 1.50@1.75; B grade, 3½ and 4 tier, 1.75@2.00; 4½ tier, 1.25; Alexanders, 3½ and 4 tier, 1.25@1.50; 4½ tier, 1.00@1.25; White Astrakans, nominal.

Avocados: California, doz., 3.00@5.00; Fla., 4.00@5.00.

Bananas: Eastern, 6@7; Hawaiian, 7@8.

Blackberries: 30@40 per drawer.

Cantaloupes: Turlock standards, 50@75; ponies, 50; flats, 30@50; orange flesh megs, 1.00 for standards, 50@60 for flats; do Sacramento, 75@85. Persian melons, 1.00@1.25 small crate; 1.50 large crate. Honeydew melons, 75@1.00 per standard crate. Casabas, 1.00@1.50 per dozen.

Figs: Black, single layer, 75@1.25; double, 1.25@1.50; White single, 65@75.

Grapes: Seedless, 1.25@1.50 per crate; Tokay, 2.00@2.25; do, small lugs, 2.00@2.50; black, 1.25@1.50; Malaga, 1.50@1.75; Muscat, 1.50@1.75 large lug; seedless, 1.75@2.00; White Cornichon, per crate, 2.25@2.50; Rose of Peru, 3.00 large lug; Tokay, 3.00 large lug; Isabella, 2.00@2.25 a crate.

Huckleberries: 12½@25 lb.

Nectarines: Fancy, 2.00@2.25 per crate; 3.00 per large lug; 1.00@1.35 per small box.

Peaches: Large lugs, 2.00@2.25; fancy, 2.50; small boxes, 1.25@1.60; clings, 2.00@2.50.

Pears: Bartletts, No. 1, wrapped, 2.50 3.50 box; other grades, 1.50@2.25.

Pineapples: 4.00@5.00 dozen.

Prunes: Cr., 50@75.

Prunes: Cr., 1.00@1.25.

Quinces: 1.00@1.50 lug.

Raspberries: 60@70 per drawer; few 75.

Strawberries: Salinas, cr., 1.20@1.40. drawer, 50@55; few 60; Watsonville, cr., 1.10@1.25.

Watermelons: ¾@1 per lb.

CITRUS FRUITS

Citrus Fruits: Valencias, 4.00@5.50 per box. Lemons: Fancy, 5.00@5.50 per box; choice, 4.00@4.50. Lemonettes: Choice, 2.00@2.50; fancy, 2.50@3.50 per box. Grapefruit: Choice, 4.00@4.50; fancy, 4.75@5.00.

DRIED FRUITS

Apples, 1921 (Packers' Quotations):

Choice (in 50s)	10¼
Extra choice (in 50s)	10½

Apricots, 1921 (California Prune and Apricot Growers) Bulk Basis:

	Sun-sweet	San Joaquin
Standard	12	10½
Choice	16	13½
Extra Choice	17	14½
Fancy	19	15½
Extra Fancy	21	...

Peaches, 1921 (California Peach and Fig Growers), Sept.-Oct,-Nov. shipment, guaranteed to January 1:

	Yellow	Muir
Slabs (in 50s)	@9	...@...
Standard (in 50s)	@9¼	...@9½
Choice (in 50s)	@9 7/8	...@...
Fancy (in 50s)	@11	...@12
Extra fancy (in 50s)	@12	...@13
Practically Peeled—		
Standard (in 50s)	@10¼	...10½
Choice (in 50s)	@10 7/8	...@...
Fancy (in 50s)	@12	...@13
Extra fancy (in 50s)	@13	...@14

Cartons, 30 11-oz., per case	3.10
Cartons, 60 11-oz., per case	6.00
Cartons, 24 2-lb., per case	6.50
Cartons, 10 5-lb., per case	6.60

Figs, 1921 (Cal. Peach and Fig Growers), Sept.-Oct. shipment, guaranteed to Jan. 1:

White—	
Standard (in 50s)	6½
Choice (in 50s)	8
Fancy (in 50s)	10½
Bricks, 12 No. 10s	1.10
Bricks, 24 No. 8s	1.80
Bricks, 50 No. 6s	2.80
Bricks, 70 No. 4s	2.95
Layers, 10-lb., 4-row	1.60
Layers, 10-lb., 5-row	1.40
Calimyrna—	
Standard (in 50s)	7½
Choice (in 50s)	10½
Fancy (in 50s)	13
Bricks, 24 No. 8s	2.05
Layers, 10-lb., 6-row	1.90
Black—	
Standard (in 50s)	6
Choice (in 50s)	8
Fancy (in 50s)	11

Raisins, 1921 (Cal. Assoc. Raisin Co.) Minimum price 4 cents a pound for standard goods. This is ½ cent above delivery price on the old contract. Other prices are graded upward, according to varieties.

Initial payment:

Muscats, standard	04
Muscats, extra standard	04½
Muscats, second crop	03½
Layers, hand sorted	05¾
Thompsons, standard	04
Thompsons, extra standard	04½
Sultanas	04
Malagas	04
Feherzagos	04
Dried Grapes	04
Valencias	04
Currants	04
Southern Bleached:	
Choice Thompsons	06
Fancy Thompsons	06
Extra Fancy Thompsons	05½
Soda Dipped Thompsons	05
Oil Dipped Thompsons	05
Sultanas	05

Sub-standard grades Muscats and Thompsons price to be set at time of delivery.

Prunes, 1921 (Cal. Prune & Apricot Growers): Sunsweet Quality, bulk basis: 30-40s, 9¼; 40-50s, 8¼; 50-60s, 6¾, 60-70s, 6¼; 70-80s, 80-90s, 90-100s, 5½. Growers Brand ¼c less on all sizes. All prices subject to change at any time.

BEANS

Below California Bean Growers Association shippers prices choice recleaned:

Large Whites	5.15
Small Whites	4.75
Pinks	5.55
Mexican Reds	5.20
Red Kidney	8.50
Henderson Bush	5.00
Cranberries	5.60
Bayos	6.80
Blackeyes	4.15

HOPS

From 14@23 per lb. for 1920 California crop; do, 1921 crop, 26@30½, according to quality and district in which grown.

HAY AND FEED

Under date of September 3, A. W. Scott Co. says:

Receipts during week 1,985 tons, compared with 1,336 last week. The heavier receipts have caused a corresponding heaviness in handling the hay in the city, as business is so light and the demand so reduced that a little increase or decrease in the supply on the market is readily felt. Prices have changed very little, however, and are not likely to do so until all the hay is moved in storage. Just as soon as one quality or another of hay becomes a little stronger, the pressure back of the market in the country of those anxious to have their crops brings it back to the low levels we have been maintaining. Export and coast shipping have been a little more quiet. Interior trading has diminished and slight reductions in price have been made. Alfalfa is probably most dull of any grade, and offerings at less than former prices have been made without result. Mill and dairy feed prices are unchanged, and the market continues dull.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers, charges of switching, cartage, commission and handling expenses must be added according to conditions).

Wheat Hay No. 1	15.00@18.00
Wheat Hay, fair grade	13.00@15.00
Tame Oat Hay	12.00@15.00
Wild Oat Hay	10.00@12.00
Alfalfa Hay, later cuttings	12.00@14.00
Stock Hay	8.00@10.00
Barley, Ground	31.00@33.00
Rolled	29.00@30.00
Oats, Rolled Feed	34.00@36.00
Bran and Millrun	25.00@28.00
Middlings	40.00@43.00
Linseed Meal, Nominal	37.00@40.00
Cocoanut Meal	22.00@25.00
Alfalfa Meal	22.00@24.00
Cottonseed Meal	35.00@40.00
Sugar Beet Pulp	32.00
Molasses, Tank, 21.00; bbl.	25.00
Milo Maize	38.00@41.00
Corn Meal & Crkd Corn	38.00@41.00
Scratch Feed	45.00@48.00

GRAIN

Wheat: Milling, 1.95@2.00; feed, 1.90@2.00.

Barley: Feed, 1.20@1.27½; shipping, 1.30@1.42½.

Oats: Red Feed, 1.40@1.55.

Corn: California yellow, 1.45@1.50; No. 2 Eastern, in bulk, 1.50@1.55; do, No. 3, 1.60@1.75; No. 3 kafir, in bulk, 1.55@1.60.

Citrus Markets

Los Angeles, September 7, 1921.

Orange growers are hoping for a good Eastern market this winter in view of the fact that last season's fruit was of such excellent quality. This, it is hoped, will offset the depression of the market caused by unemployment and slow business. Valencias are going forward at an average of 75 carloads a day.

Lemon growers who became discouraged over the poor markets and picked their crop and threw it away only to see their neighbors get sky high prices, now have prospect of getting good returns from their winter crop, which is in better condition because of that same picking and throwing away. A survey of the lemon market for the year shows good

Average returns. The outstanding need of the lemon industry is for stabilization in market, which can only be secured by elimination of foreign lemons by a protective tariff.

Shipments

Shipments of citrus fruits to date since November 1, 1920, Southern California: Oranges, 36,446 cars; lemons, 10,265; total, 46,711. To same date last season: Oranges, 28,171; lemons, 7,513; total, 35,684. From Central California to date this season: Oranges, 6,649; lemons, 212; total, 6,861. To same date last season: Oranges, 5,381; lemons, 289; total 5,670. From Northern California to date this season: Oranges, 305; lemons, 5; total, 310. To same date last season: Oranges, 261; lemons, 23; total, 284.

AT THE AUCTIONS

August 31

New York: 20 cars or., 1 car and 107 boxes lemons. Val. 2.35-7.00, lem. 4.50-4.75.

Boston: 12 or., 1 lem. Val. 2.95-5.60, grapefruit 2.45, lem. 4.20-4.75.

Cleveland: 3 Val. 2.90-5.40.

Pittsburg: 3 or., 1 lem. Val. 2.85-5.75, lem. 4.55-5.15.

St. Louis: 3 or., 1 lem. Val. 2.90-4.85, lem. 4.90.

Cincinnati: 1 or., 1 lem. Val. 4.50-5.05, lem. 5.40-5.80.

Philadelphia: 10 or., 1 lem. Val. 2.65-6.00, grapefruit 2.95, lem. 4.70.

September 1

New York: 26 or., 1 grapefruit, 2 cars and 375 boxes lem. Val. 2.60-6.75, grapefruit 4.40, lem. 2.90-5.20.

Boston: 11 or., 1 lem. Val. 3.00-5.10, lem. 4.00-4.20.

Pittsburg: 3 or., 1 lem. Val. 2.60-4.35, Nav. 1.75, lem. 5.75-6.35.

St. Louis: 3 or. 1 lem. Val. 3.15-4.85, lem. 5.80-6.35.

September 2

New York: 22 or., 1 grapefruit, 2 lem. Val. 2.70-7.15, grapefruit halves 1.40-2.00, lem. 4.40-5.00.

Philadelphia: 5 Val. 2.15-5.95.

Cleveland: 4 or., 1 lem. Val. 3.20-5.55, lem. 5.40-6.95.

Cincinnati: 2 or., 1 lem. Val. 4.40-5.20, lem. 4.95-5.15.

Pittsburg: 2 or., 1 lem. Val. 3.80-4.35, lem. 4.70-5.00.

September 6

New York: 40 or., 3 lem. Val. 2.55-6.95, lem. 4.60-6.75.

Philadelphia: 13 or., 1 lem. Val. 2.20-5.85, lem. 5.85-6.05.

Boston: 17 or., 2 lem. Val. 1.80-5.80, grapefruit 1.95-4.15, lem. 3.30-4.75.

Pittsburg: 6 or., 1 lem. Val. 2.77-5.00, lem. 7.45.

St. Louis: 4 or., 2 lem. Val. 3.40-4.35, lem. 7.15-7.80.

CALIFORNIA CATTLEMEN'S MARKET REPORT

San Francisco, August 29, 1921: Cattle prices declined on eastern markets somewhat last week, with exceedingly heavy receipts at most market points. Prices paid f. o. b. ranch in California, however, remained steady with a good demand particularly for feeder cattle. The Chicago market today showed a better demand for all classes of stock and an increase in price of three-quarters of a cent over the low point last week, making a net improvement over one week ago of one-quarter of a cent. Sales in Humboldt County are for 5½ cents for steers and 4½ cents for cows, f. o. b. ranch. It is estimated that approximately one-half the cattle available have been sold in Humboldt County. Sales are reported in Modoc County at 5 cents for steers and 4 cents for cows, f. o. b. ranch. Sales in Lassen and Shasta Counties at broad gauge loading points are reported at 5½ for steers and 4½ cents for cows, f. o. b. ranch. Offers are being made in Solano, Napa and adjacent counties, of 6 cents for steers and 5 cents for cows f. o. b. ranch. No sales reported.

Please report all sales of cattle as promptly as possible to the secretary of the California Cattlemen's Association. Do not ship on consignment. Make all sales f. o. b. ranch. Offer only your prime cattle for sale.—R. M. Hagen, Secretary.

COOPERATION THEN AS NOW!

Once upon a time, an Oriental legend has it, there lived a poor man in the little town of Noggi, by the River Nile. So preoccupied was he with the distressful circumstances to which his poverty had brought him that he went about the streets of the village beating his chest and bewailing his fate to the inhabitants.

And when by chance one of these, seeking to assuage his misery, saluted him in terms of hopefulness, calling attention to the beauty of the day or the good fortune that had befallen a brother villager, he immediately set about to drown out the salutation with increasing lamentations.

It so happened that the ground upon which this man's hovel was located, the sole legacy of his worthy father, stretched a fathom square along the marshy land bordering the river, and when the Nile rose the waters submerged his hut, and when they receded he was constrained to build him another, giving him periodic cause for his lamentations.

One day Sett, the sandal maker, and Beppi, the wine presser, who owned marsh lands on either side of him, sought him out as he was rebuilding his hut after the flood.

"Neighbor," said they, "if we but join our labor against the Nile we may check its ravages. Let us build a wall against the flood tide."

But the man only beat upon his chest and answered:

"Miserable me! Who am I that I should raise my arm against the Nile?"

COMING EVENTS

California State Fair, Sacramento, Sept. 3-11.
Fall River Fair, McArthur, September 7-9.
Escondido Grape Day, Escondido, Sept. 9.
San Joaquin County Fair, Stockton, September 12-17.
Tulare County Livestock and Agricultural Show, Tulare, Sept. 13-17.
Humboldt County Fair, Ferndale, Sept. 13-17.
San Fernando Valley Fair and Market, San Fernando, Sept. 19-24.
Glenn County Fair, Orland, Sept. 19-24.
Kings County Fair, Hanford, Sept. 19-24.
Trinity County Fair, Weaverville, September 20-22.
San Diego County Fair, San Diego, Sept. 21-24.
The Round-Up, Pendleton, Oregon, Sept. 22-24.
Fresno District Fair, Fresno, Sept. 26-Oct. 1.
Orange County Fair, Huntington Beach, Sept. 28-Oct. 1.
Arbuckle Almond Show, Arbuckle, Sept. 28-Oct. 2.
Inyo County Fair, Bishop, Oct. 4-5.
National Swine Show, Springfield, Illinois, Oct. 3-8.
Klamath County Fair, Oregon, Oct. 5-7.
Ventura County Fair, Ventura, Oct. 5-9.
Shasta County Farm Bureau Fair, Anderson, October 6-8.
Southern California Fair, Riverside, Oct. 11-16.
California State Grange, 49th Annual Convention, Yreka, October 18.
California Association of Nurserymen Annual Convention, Exposition Park, Los Angeles, Oct. 20-22.
California Flower and Horticultural Exhibition, Exposition Park, Los Angeles, October 20-26.
Date Festival, Coachella Valley, Oct. 21-23.
California National Livestock Show, San Francisco, Oct. 22-30.
Pacific International Livestock Exposition, Portland, Oregon, Nov. 5-12.
Orange and Olive Exposition, Oroville, middle of November.
American Farm Bureau Federation Annual Meeting, Atlanta, Georgia, November 21-23.
Stanislaus County Poultrymen's Association Show, Modesto, Dec. 4-7.

So they went upon their way and built the wall and carried it away from the river along either border of the man's marsh land.

And when the flood tides came again and again his house was carried away by the waters, the market place of the town resounded afresh with his lamentations.

"Miserable me! Fortunate Beppi! Fortunate Sett! See, their houses stand. They be blessed of Heaven. But I, I am most miserable!"

WHAT USE CAN I MAKE OF A TRACTOR?

One of the first questions that a prospective tractor buyer should ask himself is "Can I use the tractor to advantage in work other than plowing?"

In general the answer is "Yes." It can be used for disking, seeding, harvesting, threshing, silo filling and in fact all belt work necessary to be done on the farm. It can be used in haying, in spreading manure, digging potatoes, grinding feed, baling hay, shelling corn, sawing wood; in road grading, stump pulling, rock removal, ditching, and in practically every place where power is necessary.

The joy of it all is that where common sense and good judgment are employed, it can be used to better advantage and more economically than almost any other type of power.

The George Junior Republic at Chino has an entry of 14 Holsteins at the Sacramento fair.

MAKES FARM LIFE ENJOYABLE

"Instead of arranging to buy more adjoining land, farmers should improve their present farms, put them in a high state of cultivation, and build attractive homes to live in," is the way J. W. Lick of Waldo, Kansas, 30 years a stock farmer of Osborne County, expressed himself.

"A few years ago I realized that I would not live always, and if I expected to get any real enjoyment out of life and have my family share in this enjoyment, I must get busy. I raised three sons and all reside near the old home. I have a residence lighted with electricity, equipped with hot and cold water, a bath and other modern improvements, and the whole family is enjoying life. If farm homes were made more attractive, fewer of our boys and girls would go to the cities."

SPLIT OR ROUND FENCE POSTS

Some people believe split fence posts last longer than do round ones. Probably as large a number hold the opposite view. The forest products laboratory of the United States department of agriculture says that one will last about as long as the other if the percentage of heartwood and sapwood is the same in both. If the percentage of sapwood is increased by splitting, the split post will be less durable, while if the percentage of heartwood is increased it will be more durable than the round one. Exceptions to this should be made if the posts are of spruce, hemlock or any of the true firs whose heartwood and sapwood are about equally durable.

If the posts are to be treated with creosote or some other preservative the round post is preferable to the split because of the comparative ease with which the sapwood can be treated. Experiments at the laboratory demonstrate that the heartwood faces on split posts do not, as a rule, absorb the preservative as well as does the sapwood.

PUT OUT THE FIRE

A camp fire not fully extinguished may be the means of destroying valuable timber which has taken hundreds of years to reach maturity. The reports of forest rangers are filled with dramatic accounts of the work involved in controlling such fires and in detecting and bringing the culprits before a judge after following the very slight clues obtainable in a deserted camp site. Sometimes an old bottle or a pocket handkerchief will reveal the original possessor who did not put out his fire. Sometimes a particular make of automobile tire can be traced for miles and the careless camper brought to justice.

No fines, however, will restore the burned area. While forest rangers are vigilant and alert to catch carelessness and prevent incipient fires, the real need, the foresters say, is for the development of more conscience on the part of the public which uses the national forests.

Be sure your fire is out!

WEATHER REPORT

San Francisco, Cal., September 3, 1921.

Stations	Rainfall Wk.	Season	Norm.	Temp. Max.	Min.
Eureka	.00	.01	.24	64	48
Red Bluff	T	T	.05	98	56
Sacramento	.00	.00	.01	98	54
San Francisco	T	T	.01	73	53
San Jose	.06	.06	.05	88	46
Fresno	.20	.20	.00	100	56
San Luis Obispo	.12	.12	.05	82	50
Los Angeles	.00	T	.00	90	58
San Diego	.00	T	.00	80	61

INCUBATORS IN DEMAND

The Pioneer Incubator Company of Los Angeles reports sale to the Fanciers Exchange of 42 incubators for their Burbank Hatchery, 15 to the Wilmar Hatchery at Wilmar, 20 to the Harris Electric Hatchery, Los Angeles, 20 to the McLain Hatchery, Los Angeles, and 12 to the Coulson Hatchery, Santa Ana.

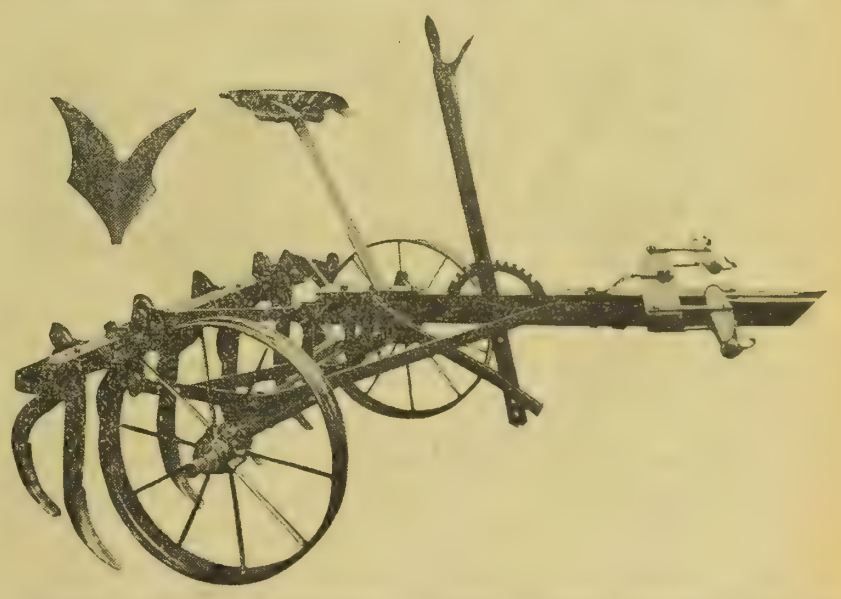
Important to Bean Growers

The handling of beans with a side delivery rake is certainly the most practical and economical way to handle the crop provided the rake used is properly built and properly geared for the handling of beans.

In the ordinary side delivery hay rake the cylinder is speeded entirely too high for beans. When the cylinder runs at a high speed the beans are handled so roughly that a great many are threshed out of the pods and lost. The Thomas Side Delivery Bean Rake is especially geared for the handling of beans. The cylinder moves much more slowly than it does in a hay rake.

Dixon & Griswold at No. 130 North Los Angeles Street have in stock the Thomas Side Delivery Rakes geared especially for beans and also have them in stock geared for hay. They are offering them at a special price of $100.00 each f. o. b. any railroad point in California or Arizona. Your dealer can easily get a Thomas for you at this special price. If there is no dealer in your section you can order a rake yourself by 'phone. The telephone number is 62852 Los Angeles.

COMBINATION
Orchard Cultivator, Furrower and Spring Tooth Harrow



Ranchers desiring an all round handy cultivator, furrower and spring tooth harrow will find this implement offers every desirable change and adjustment. It can be used as a 2 or 3 row furrowing out implement—as a nine tooth, spring tooth harrow, or a nine standard cultivator. Extra extension shanks make it possible to cultivate six feet wide. Wheels are adjustable to width desired with extension axles. This cultivator is perfectly balanced and is made of high grade material throughout. Fore truck or pole equipped as desired. It is a pleasure to own and work with an implement like this.

Warr Implement Co. 110 No. Los Angeles St., Los Angeles

Manufacturers and distributors of Farm Implements, Headquarters for Stockton and Fosmir gang parts. If you cannot get repairs elsewhere come in or write us.

Built to an ideal and not to a price

The great quality limitation of the average pump is its price. Before the first casting is made its life usefulness is pre-determined by *price*.

Byron Jackson has become synonymous with quality because it has been the policy of this Company through the years to reverse this procedure.

Every pump, whether special or standard, is built to the ideals of quality, efficiency, dependability and economy. Then, and only then, is price computed.

BYRON JACKSON IRON WORKS-INC

408 Sharon Bldg., San Francisco

Wherever water is to be lifted

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HORSE SHOE CORDS

Why Do These Dealers Handle Horse Shoe Tires?

There's a Reason

If you will study the list you will find that in each location the dealer who sells Horse Shoe Tires is one of the most successful and representative dealers in the town.

These men stake their reputation and success on the goods they sell.

They know that Horse Shoe Tires give big mileage for the money invested. That they are built to stand the wear and tear and hard knocks of long, rough usage on all kinds of roads. It is a fact that they give the maximum of safety in wet weather.

And they know that once a man uses Horse Shoe Tires he comes back for more—

That's Why!

Horse Shoe Cords Outwear Two Ordinary Tires

DEALERS OF SOUTHERN CALIFORNIA:

Placentia—Schumacher's Garage.
Atwood—E. P. Francis.
Ontario—American Vulc. Works, 3rd and Thomas St.
Pomona—American Vulc. Works.
Uplands—J. Lynward Grahame.
Redlands—Home Oil Co.
San Bernardino—San Bernardino Rubber Works, 595 3rd St.
Riverside—Riverside Vulc. Works, 303 W. 8th St.
Indio—Indio Garage.
San Diego—Miller Motor Supply, 648 Market St.
Fullerton—Pitts & Wilkinson
Torrance—Palmer & Stapelfeld.
Anaheim—F. W. James, 223 No. Los Angeles St.
Orange—E. G. Stinson.
Santa Ana—Santa Ana H. S. Tire Co., 417 No. Broadway.
Long Beach—Coombs & Tressler, 31 American Ave.; Jones Hardware Co., 1260 American Ave.
Gardena—E. A. Tepper
Pasadena—Pasadena H. S. Tire Co., 34 No. Union St.; H. W. Shafer, 30 W. Colorado St.
La Habra—Missouri Garage.
Brawley—Quick Service Vulc. Shop.
El Centro—Swinson Service Station
Calexico—T. J. Northington, 228 Imperial Ave.
Westmoreland—L. W. Norman
Imperial—H. V. Emblem
Brea—Brea Garage

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3,600 acres pronounced by experts the ideal location for avocado and citrus planting. Protected from frost and wind in combination with good soil. Nearly $250,000 spent on irrigation plant, roads and other improvements. The Hacienda Country Club, with 151 acres of golf course and other recreations, is located in the center of this property.

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

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Vol. LVII — September 17, 1921 — No. 12

Enriching a California Orange Grove

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SEP 21 1921

The latest method of applying stable manure in orchards. This is known as the deep furrow method. See article by Mr. Shamel on page 279. Photos by Shamel.

Established 1877 Forty-fourth Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

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EDITORIALETTES

Practically every livery stable in California has been turned into a garage. Garages produce no manure. Many farms produce a lesser quantity than they did a few years ago. Hence a question which frequently arises, "How can we secure the greatest return for the small quantity we have?" is most pertinent. The illustration on the cover, photograph taken by A. D. Shamel, gives a hint.

* * *

In addition, there are other hints given on Page 279. These are also by Mr. Shamel and give the very latest in manure application. This method has been urged for some three or four years and fullest investigation has been made following application in deep furrows. These investigations have included questions asked directly of the soil and directly of the tree at harvest time.

* * *

The scales, with their accurate weights of different grades of fruit, have been used in reading the answer of the tree to the effects of the deep furrow method. Mr. Shamel's article will prove of value to the man who is studying his own orchard soil.

* * *

There are not sufficient manures that all of our orchardists may follow this method, but it is a hint of value.

* * *

One objection we see to this method is that the ordinary and efficient manure spreader may not be called into action in putting the supply of manure in one narrow furrow, but we think the moment our implement and machinery manufacturers are convinced that this method of manure application is here to stay they will meet the need, and the furrow will be made and the manure drilled into the furrow and the covering all done in one operation.

* * *

But for us who have not the available supply of manure, there is the cover crop, and Messrs. Bristol, Koethen, Reed and others are talking cover crops. Like manure, cover crops are not all-sufficient. There are even circumstances where they do not prove a success. Some of our contributors this week refer to this deficiency, but when all is said and done the cover crop brings to the orchardist reasonable assurance that he can keep his soil in good condition if he will use it in all circumstances where possible.

* * *

By the plowing under of a green manure or cover crop beneficial action is secured far quicker than with a stable manure. One close observer has declared that within three or four weeks a green manure crop is completely broken down and incorporated in the soil if properly turned under. However, there are other advantages with the slower decomposing stable manure which make it imperative that every ounce of it shall be conserved.

* * *

Another point with the green manure crop, or in this case we will call it a cover crop, is its value as a soil binder on steep hillsides or where there is danger of erosion. Mr. Bristol brings out this point very forcefully in referring to its value on his slope with a fall of 300 feet.

* * *

The first to take up the use of green manure crops were the orange and lemon growers, but they are far from being alone in their use now for deciduous orchardists and vineyardists have used them to the limit. The vineyardist finds some difficulty in getting his trays off the field and the vines shortened so as to permit of seeding, but more recently he has not waited for the pruning to remove the vines, but by broadcasting his seed over the unpruned vines has gotten in a winter growing crop which has given a fair tonnage to turn under by midwinter or early spring.

* * *

The walnut grower likewise finds some nuts holding on after he would like to have his seed in to take advantage of the warm fall sunshine, but he is doing his best and plowing under a fair crop every year.

* * *

Many growers have found it advisable to apply their commercial fertilizers through the green manure crop. The root acids of the growing crop quickly pick up and use the fertility carried in the commercial fertilizer, and, as noted above, a very few weeks is sufficient to return it to the soil in a condition more available for the tree roots.

FAIR AWARDS

Some of the history of California has been written at the state fair just closed and becomes a part of this week's Cultivator. It may be found in "Livestock the Big Feature at Sacramento." In this account is given a list of the prize winners, and as some of these prize winners at former state fairs have proven real history makers we feel perfectly safe in predicting that more history has been made at the recent state fair and that some of these beef or dairy cattle, draft horses, porkers or sheep will pass their names down as worthy history makers.

NEXT WEEK

Next week's California Cultivator will be thoroughly buggy, and with the bugs will be incorporated various and sundry mildews, moulds and rots. But, as for each poison there is "some sweet oblivious antidote," so for each bug or pest with which the farmer has to deal, we will endeavor to provide a cure or, better, a preventive. In other words, it will be a pest fighting issue, and pest fighting issues of the California Cultivator which have appeared every two or three years since 1909 have been classics in their particular line. In fact, we were told by one who has read carefully and practiced faithfully that the last pest fighting issue of the California Cultivator has been regularly at hand and as faithfully read as the Bible.

Anyway, it is going to be a good number and is the product of several months spare minutes work on the part of the Cultivator staff and many of the state's best experts in spraying, fumigation and other methods of pest control.

It will be a number worth filing.

DOING POLITICS

It has been claimed by many that since its inception the fight against the state highway commission has been one of pure (?) politics. If this claim needs corroboration it is easily secured at the present time. It is most astonishing that the two automobile clubs of the state should have lent themselves to this political campaign. It is causing delay in the construction of California's good roads; it is holding the state up in a most discreditable way; and, so far as can be seen by the layman, is accomplishing absolutely nothing for those engaged in the attack.

One proof of the animus of this fight is given by the San Francisco Chronicle in a recent editorial in which it holds the governor responsible for the so-called failure of the highway commission: "If, as reported, the governor is to be a candidate to succeed himself, it would seem to be politically unwise to antagonize every owner of an automobile in the state and every farmer who must use the highways to market his products." In other words, "Mr. Governor, you must be good and accept dictation or you will get yours at the next election."

As to "every owner of an automobile and every farmer who must use the highways" being in sympathy with this campaign, the Chronicle and others have several guesses coming. It is claimed that there are 87,000 members of the auto associations. It may be that estimate is decidedly liberal, but, admitting it, we may say that there is nothing on earth more certain than that approval of this fight by the club management is far from unanimous on the part of members. In addition, there are some 525,000, other than those 87,000, owners of automobiles in California, who have little patience with this campaign.

The United States bureau of public roads has given highest commendation to California's accomplishment in road building. The peculiar manner in which "facts that ain't so" are stated is shown by the following from the Los Angeles Times: "The assertion by the governor that the United States bureau's report 'clearly vindicated our highway officials' can deceive only those who have not read the federal report."

Here are three sentences—quoted exactly — from that report of the bureau of public roads: "The work of the state highway commission and of the highway engineer shows a continuous and intelligent devotion to public duty. * * * The financial administration has been scrupulously honest and careful and the administrative and engineering costs have not been excessive, nor have final costs much exceeded the engineer's estimates. There should be no hesitation in going forward with confidence." These are only three sentences from a report covering several hundred pages and including a vast number of photographs and drawings. The report does not claim, nor does the highway commission claim that California's road building campaign covering several years and thousands of miles of construction is entirely without fault, but the twisting of truth to the injury of our state is certainly to be regretted.

The Cultivator has no taste for politics, but in this matter where the state's best interests are so lightly regarded, it is time for more of us "to speak up in meeting."

THE CONTEST

We have had occasion to criticize the movies. They have failed woefully in reaching their possibilities as an educational feature, but the other day we heard of one which is instructive and even inspirational. It depicted the contest between Carelessness, a skeleton figure gowned in black, with blazing torch in hand, and Thoughtfulness, a woman in white, holding the two-edged sword of education. The mission of Carelessness was to destroy, and many a group of little kiddies was surrounded with combustibles placed ready for the occasion by Carelessness, but when about to complete his destruction by the use of his torch he was driven away by Thoughfulness with her sword, and with it she directed the children to act for their own protection.

There is a mission in California right now for Thoughtfulness to go up and down the land with her educational sword. We note in the headlines "Fierce Brush Blaze Ruins Watershed"; "Fire Caused by Caretaker, Who Was Burning Weeds"; "Burning Mountain Is Thrilling Sight"; "Fills Gas Tank While Smoking Cigarette—May Live." This last accident was caused by a young man of 21, certainly old enough to have had better judgment, but a man of that type will never be very thoroughly impressed by the sword which Thoughtfulness is wielding—and there are others.

The destruction of California watersheds means much to the fruit growers of today, and more to the fruit growers of tomorrow. We are the guardians of this heritage. Let us enter the mountains on our camping trips and pass through fields dried by August and September sun as in a holy place.

A bit of carelessness on the part of Mother O'Leary's cow accomplished a loss aggregating some $190,000,000, probably the biggest single loss for a bit of carelessness. San Francisco's 1906 loss was greater but perhaps not quite so directly traceable to carelessness as was the incident of the overturned lantern. However, had that earthquake been preceded by a march through the city of Thoughtfulness with her Sword of Education, it might be that some of that $250,000,000 loss might have been prevented by more careful construction and better fighting equipment.

It is nearly a month to October 9, and October 9 is set aside as Fire Prevention Day. In that 30 days this country will have lost $30,000,000 because of conflagrations, largely the result of carelessness. We do not say this as a prophet, we simply are referring to the fact that the country's average fire loss during the past 365 days has been an even million of dollars every day.

As Josh Billings used to say, "It's two mutch."

California Cultivator

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Furrow Manure Distribution in Citrus Orchards

By A. D. Shamel

THE autumn season for the application of stable manure, alfalfa hay and bean straw to citrus orchard soils is at hand. While some growers begin this work in September, most of those with whom the writer is familiar carry on this work during October, November, or early December. The writer does not believe that any particular month or period can be designated as the one best adapted for the fall application of manures in citrus orchards for all conditions in California. It will depend upon local circumstances, including the availability of the manures, cover crop conditions, climatic conditions and cultural factors.

The writer has begun to receive further inquiries from citrus growers as to the method of application of the manures in furrows. For this reason it is thought that a brief description of the furrow-manure method and recent observations on the results of the use of this system of applying manures to citrus orchard soils may be of interest. An attempt will be made to answer some of the questions most frequently asked in this connection.

The furrow-manure method may be defined as one whereby stable manure, alfalfa hay, bean straw or other similar organic fertilizers are applied in furrows alongside or between rows of citrus trees after which it is promptly covered by plowing or dragging the soil back over the manure which was thrown up in the process of making the furrows.

Arrangement of Furrows

The location of the furrows depends so much upon local conditions that no general statement covering all cases can be made. Wherever possible, and particularly in the case of young trees, the furrows for the first application should run parallel to the tree rows in the direction of the irrigation flow and be placed near the drip of the tree branches between or alongside the irrigation furrows. Experience shows that the manure furrows should not be placed directly under irrigation furrows if it is possible to avoid it. The furrows for the second application should be arranged in the same relative position to the trees but at right angles to those of the first treatment. In other words, the furrows for the year following the first application should run crosswise the first ones. In this way the trees will have had manure applied on all four sides within two years. The third season the furrows can be run in or near the middle of the tree rows, particularly in the case of large trees and in the same direction as those of the first application. The fourth year the furrows can be placed similarly to those of the third year but arranged at right angles to them or crosswise of the irrigation flow. Various modifications of this arrangement have been used by growers during the past seven years in the orchards under the writer's observation. In some cases the furrows have been run in or near the same position year after year. In other instances the furrows have been placed gradually nearer to the middles of the tree rows from year to year always in the direction of the irrigation flow. No definite evidence is available to show that one of these arrangements is markedly better than the other. Each has its advocates. The local conditions, such as lay of the land and spacing of the trees in each orcard, will have to be taken into consideration in order for the individual grower to decide definitely as to the best arrangement of the furrows.

Deep Furrow Application of Manure
Upper: Making manure furrow in lemon orchard in the Alta Loma district.
Center: Covering the manure in the furrow with a one horse breaking plow.
Lower: The finished manure furrow. The furrows on either side are used for irrigation.

Depth of Furrows

The depth of the furrow which has generally proven to be best under practical orchard conditions is about eight inches. The ideal to be attained is to make the furrows of such depth so that when the manures become settled in place the feeding roots which will develop and fill this area after the manure has become decomposed will not be disturbed during cultivation. At this depth, that is below the active cultivation zone, the decomposed manure and accompanying feeding roots will likely remain moist and in good condition between irrigations.

Kind of Furrows

The kind of a furrow is as fully, if not more, important than the depth. There are several furrowing plows, modifications of the middle buster type, in the market which are admirably adapted to this purpose. In addition to these several orchardists with whom the writer is acquainted have constructed home made furrowing plows out of ordinary subsoil plows, pieces of well casing and other pieces of steel. The ideal furrow should be wide and as clean as possible so that it will hold the stable manure, chopped alfalfa or bean straw, or other similar fertilizer in good shape.

Application of Manure

The distribution of the manures in the furrows is usually done by hand. One or two mechanical devices for distributing directly from the wagon or speader to the furrows have been tried experimentally. It is to be hoped that some such device will be manufactured on a commercial scale because such an arrangement will simplify and improve the work of distribution.

Alfalfa hay and bean straw are now being chopped or cut up into small pieces or chunks so that it can be more readily distributed in the furrows than is ordinarily the case. The writer believes that this will render it much more conveniently and easily distributed in the furrows than has been the case heretofore.

Amount of Manure

The amount of stable manure, alfalfa hay or bean straw for application will depend upon the age, size, bearing condition of the trees, the condition of the soil and other circumstances. As a rule five cubic feet of good stable manure or its equivalent in alfalfa hay or bean straw per tree has given good results. As much as 20 cubic feet of stable manure per tree has been applied in some instances under the writer's observation with very markedly beneficial results. Whether or not this large application has been economically profitable the writer is unable to say except that one grower who has used this amount has assured the writer that in his case it has been very profitable. The writer has found no reason to change his opinion expressed several years ago following a study of the results of the use of the furrow-manure method that the use of five cubic feet of stable manure per tree in furrows gives superior results to the application of 10 cubic feet per tree under the ordinary broadcast method. Recent experiences and observations have confirmed this statement beyond a question of doubt in the mind of the writer.

Covering Filled Furrows

In covering the manure in the furrows several different methods are in use. The usual one is to plow the loose soil from the manure furrow back over the manure. The two furrows made during the process are subsequently used for irrigation. Where the furrows are placed close to the trees, this covering is frequently done with one horse pulling a small moldboard or breaking plow. A V-shaped drag is often used, the sides of the drag pulling the loose soil back over the manure. Disk and other forms of ridging cultivators are also used for this purpose.

Cost of Furrow Manuring

The cost of applying the manure in furrows is no greater, if as much, than where the manure is broadcasted and plowed under. In most cases under observation, the cost has been decidedly less than under the broadcast system. Frank F. Crane of the National Orange Company has recently informed the writer, that the cost of chopping alfalfa hay for about 500 acres of citrus orchards in 1920 was $2.25 per ton. The analyses of the alfalfa showed better than two per cent of nitrogen. This nitrogen content of the stable manure used in National Orange Company's orchards was less than six-tenths of one per cent based upon the shipping weight.

Mr. Chase further states that the chopped alfalfa hay was applied during 1920 at the rate of about three tons per acre. During the present season a somewhat larger application is contemplated. Most of the hay was broadcasted but some of it was applied in furrows. There was not much difference in the cost of the two systems of application.

Broadcasting the Manures

It seems logical and there is some evidence to support the contention that the stable manure, alfalfa hay or bean straw should be broadcasted at certain intervals in order to improve the soil condition over the entire orchard area. The length of intervals between the broadcast applications depends so much upon local conditions that the writer does not feel able to offer any definite suggestion on this point. It seems likely that where it is thought that such applications are necessary they should be made at least every fifth or sixth year. Some growers make such an occasional broadcast application between the regular periods for the use of the furrow-manure method with apparently good results. In these cases the furrow-manure treatment is ap-

(Continued on Page 287.)

Agricultural News Notes of the Pacific Coast

Northern California

Excellent quality of broom corn is being raised at Colusa.

A large acreage of rice in Yuba County is ready for harvest.

Trinity County is to hold its first county fair September 20-22 at Weaverville.

Agricultural courses will be largely featured in the curriculum of the Oroville union high school.

Dunsmuir, Siskiyou County, had its first heavy shower of the season the second day of September.

In the national forest reserves of California officials report that 645 fires have been fought this season.

The Poultry Producers of central California are making regular shipments by way of Panama to New York.

Olive growers at Fair Oaks, Sacramento County, have set $100 a ton as the price for pickle olives and $20 a ton for picking.

The Redding Chamber of Commerce has named committees to investigate the proposition of building scenic highways in Lassen national park.

The Sutter County Farm Bureau Exchange recently received an order for three carloads of Holsteins, two cars to go to Nevada and one to San Joaquin Valley.

The hop crop of the Sacramento Valley is lighter than indicated by early estimates. Hop men think it will be 30 to 40 per cent less than last year's crop.

The Auburn-Reno Highway Association has been formed to work for construction of a state highway along the Truckee River rather than the Dog Valley route.

Glenn County fair opens September 19 for six days. A large new tent has been erected so that stock judging may be held under cover. The fair will be held at Orland.

The Siskiyou County Pomona Grange met at Sisson for its August meeting and plans were made for the state convention which will be held in that county in October.

Winners in the boys' calf club contest were announced at Durham, Butte County, last week. The first prize was won by Leslie Rodney, second by John Horn, third by Andrew Brandt.

The California Fruit Exchange has bought from the Western Pacific several tracts of timber land on the Feather River to use in box making. The Exchange has a sawmill at Blairsden, Plumas County.

A carload of Sutter Basin Duroc-Jerseys recently sold on the San Francisco market at 12½ cents a pound which was 1 cent above market price for that day. There were 68 head in the carload averaging 200 pounds.

Contracts have been let by the state reclamation board for work on the levee on the east bank of the Sacramento at Hood. A concrete highway will be built on the levee, closing the gap between Freeport and Courtland.

Cattlemen have for years leased from the government range on the Trinity-Siskiyou divide. Recent surveys have established Southern Pacific title to this land and cattlemen are much chagrined at finding that sheepmen have already arranged to lease the range and have turned in their sheep.

Central California

Terra Bella irrigation district has added another big well to its supply.

The English market is developing a strong demand for Thompson Seedless raisins.

Stanislaus County grape growers are being paid $65 for most varieties of black grapes.

Waterford, Sanislaus County, is making plans for its fall festival and community fair.

The daily weather forcast service was resumed in the San Joaquin Valley September 1.

The Madera County chamber of commerce is planning an annual fig day for Madera County.

Nurserymen have been visiting bulb farms in the Salinas Valley to make purchases for the coming season.

The peach and fig growers are canning on an average of two tons of figs per day at their new Turlock cannery.

Colonists at Delhi, Merced County, are much interested in activities of oil companies who are surveying the lands.

Cantaloupe growers at Gilman, Stanislaus County, say that the close of the season has left them with a fair profit.

Several shipments of feeder cattle have been brought in from Arizona for the ranges near Livingston, Merced County.

Turlock melon growers are up against a closed market in the East. Many carlot shipments have sold for freight charges.

Hog auctions will be held by the Farm Bureau Marketing Association at Bakersfield, September 17; McFarland, 30; Wasco, October 1.

Kern County farm center meetings: Mountain View, 19; Pond, 21; Inyo-Kern, 22; Rosedale, 23; Shafter, 28; Arvin, 30; board of directors, October 1.

Kern County farm bureau picnic was held September 13 at Switzers Grove. Two steers were donated for the barbecue by H. A. Jastro and E. E. Rankin.

A Claus rancher carried a load of string beans to Stockton, was offered one cent a pound for the lot and brought them home and fed them to his hogs.

The California Dairy Council is planning to hold a dairy products show some time in November at Stockton. It will be called the Pacific Slope Dairy Products Show.

A petition is being circulated among the orchardists of Tulare County asking that the services of P. A. Boncquet be retained as county plant pathologist.

A fair was held by the Hilmar and Irwin districts of Stanislaus County at the Hilmar high school on September 1, exhibits covering every farm, home and school activity.

Farm home department meetings in Kern County: County committee meeting, 17; Weed Patch, 20; Inyo-Kern, 22; Kern-Delta, 27; Beardsley, 28; Wasco, 29; Edison-Fairfax, 30.

The four creameries operating in Tulare city paid to dairymen for butterfat and whole milk during the month of July $214,000. 45 cents was paid for butterfat, an advance of 10 cents over the June price.

Southern California

Five carloads of hogs were shipped from Brawley, September 5.

Bean threshing is on in the Oxnard district of Ventura County.

Ventura County fair opens October 5. It will be held for four days.

B. D. Irvine of Brawley reports big demand for feeders and stock hogs.

Palo Verde cotton growers are encouraged at better market prospects.

Fifty-seven fumigating outfits are busy in the orchards of Orange County.

The Taxpayers League of Ventura County is calling for a cutting down of next year's budget.

There was a large attendance at the Walnut Growers field day, held at Puente, September 16.

Imperial County farm bureau is organizing the marketing exchange to be directed by Mike Liebert.

Manager Churchill of the California Lima Bean Growers Association reports all Baby Limas sold out.

The California Association of Dairy and Meat Inspectors will meet at Santa Monica, September 27-30.

Imperial Valley farmers are already busy getting their barley, lettuce, pea and tomato lands ready for fall planting.

The state highway commission says that the Banning-Indio link of the state highway will be constructed at once.

Beans and walnuts are being harvested in the Carpinteria Valley of Santa Barbara County. A normal crop of walnuts is indicated.

A petition is being circulated in Ventura County asking the supervisors to abolish the office of bee inspector as they consider it a needless expense.

It is proposed to form an irrigation district to take in 25,000 acres on the old Conejo Ranch in Ventura County. There is also talk of forming another irrigation district taking in most of the Simi Valley.

The Oxnard Lima Bean Growers Association has elected A. L. Gordon, president; Bernard Schmitz, secretary-treasurer. W. S. Saviers will represent the association on the central board of the state association.

State Quarantine Officer Strong is advising those who wish to import resistant grapevines from foreign countries to make immediate application to the federal horticultural board at Washington so that they will receive them in time for planting.

A walnut growers field day was held at Puente September 16 under the auspices of the Los Angeles County farm bureau. President Teague reported on the tariff fight at Washington and Manager Thorpe on the year's work of the association.

Manager Churchill of the California Lima Bean Growers Association says that the improvement in the cotton market will improve business in the Southern states and consequently increase demand for California beans as that section is a large consumer.

U. S. bureau of crop estimates figures show that California is by far the largest producer of beans of any state in the Union. The estimated production for the coming year is 2,398,000 sacks. Michigan, the next big bean state, is expected to produce 1,498,000.

The Coast and General

The Oregon State Motor Association is erecting road signs all over the state.

Japanese mills import largely of cotton from India as well as the United States.

Alfalfa in the Yuma section of Arizona is making fine growth towards second setting of seed.

Hop picking began at Salem, Oregon, August 20. The pickers are paid 50 cents per 50 pound box.

The hop harvest has begun in the Yakima Valley of Washington, providing work for 2000 hands.

Alfalfa growers near Klamath Falls, Oregon, are planning to build a cooperative alfalfa meal mill.

The Oregon Jersey Cattle Club is planning for an exhibit at the National Dairy Show this fall.

For the first time electric lamps manufactured in China appear on the export list to the United States.

The town of Wilbur, Washington, has a 33 acre hay field which last year brought the town an income of $2500.

The Yakima Valley of Washington this year shipped out 142 carloads of cherries, mostly Bings and Lamberts.

Census reports show that the state of Washington has 18,560 pure bred cattle. Of these 7637 are Holsteins, 3381 Shorthorns.

The weather bureau reports that the recent heavy rains on Arizona ranges have already made possible shipment of fat range cattle.

Over 65,000 pounds of poison was distributed among Oregon farmers to use in fighting rodents the first six months of the year.

The newly organized Skagit, Washington, Dairymen's Association is receiving 40,000 pounds of milk a day at its Burlington plant.

A new feature of the Washington state fair to be held at Yakima this fall is a dog show. Two hundred entries have already been made.

The Skagit County fair held at Burlington, Washington, August 8-13, had record breaking attendance and was financially profitable as well.

County Commissioners of Walla Walla, Washington, are being petitioned by farm bureau women to appoint a home demonstration leader.

An agricultural and veterinary college has been established by the state of Minas Geraes, Brazil. Dr. Peter Rolfe of Florida has been appointed first director.

Orange growers and shippers of Jaffa are urging the government of Palestime to improve that port and Haifa and to build a railroad from the sea of Galilee east to connect with the Bagdad railway.

The department of immigration and colonization at Ottawa, Canada, reports rapid development in irrigation in the section about Lethbridge, Alberta. Construction now under way will provide irrigation for 500,000 acres.

A trial public market at Klamath Falls, Oregon, has proved so satisfactory that permanent stalls and storeroom will be built and later a warehouse and cold storage system. For the present the market will be open only one day a week.

Tractors and the State Fair Exhibit

By M. C. Holman

POWER on the farm means bigger crops and more money in the bank. The modern farmer requires power delivered from a unit plant in such quantity as to make it available either as a pulling force or as a stationary engine. Farming on a large or small scale is becoming an analyzed business enterprise where every expenditure, whether in money or labor, is measured in the balance with adequate return.

All modern farmers recognize the value of the tractor as the means of furnishing the needed farm power. They have long since been familiar with the facts of economy and reliability and on hundreds of farms in California the tractor does its daily jobs, delivering its power day and night.

There is no occasion at this time to argue the value of the tractor. That has been done, and easily, for the desirability of the tractor is so apparent that argument in favor of its use is but arguing along the line of no resistance. There is no reason to believe that the tractor is not here to stay. Its every day service and the ever increasing army of users proclaim adaptability for every division of farm work.

Have you a small ranch? Then purchase a small tractor. A big tractor would be a white elephant or a dead horse on your hands. But for heavy work with a large number of plows or for sub-soil work a small tractor would be quite as useless as a toy wagon to haul a monolith. Tractors are suited to certain kinds of work. They have their limitations and will deliver only the power that is built into them. If more horsepower is required than your tractor was built to deliver, then you are harnessing too great a load to your mechanical steed and it will balk.

Look about you. Where are the dozens of tractors of two years ago? They are not on the market. They are not manufactured. Tried in the field they failed and the factories making them went out of business. Some firms built one tractor and hauled it from fair to fair. There was no quantity production. There was no state wide distribution of parts. The operator could be held up for days awaiting the arrival of a replacement. It is not always necessary to purchase from a big firm, but care and judgment are always essential in buying a tractor. In contemplating a purchase, consider several tractors, discover their good points and learn their capabilities. Match them up with your requirements and pick out the one best suited to your needs.

At a tractor exhibit such as the one at the state fair one has an opportunity within a limited space to make minute comparisons. The 1921 exhibit was not so large as on some previous occasions when money was more plentiful and there was a greater willingness to spend it. But the exhibit was a pleasure to look at and a greater pleasure to study.

The big tent was comfortably filled and the exhibits were attractively arranged. The California Tractor and Implement Association put on an exhibit that was a credit to the tractor industry of the state. New features commanded strong and favorable comment. New tractors were given the once or twice over and explanations were abundant and thorough from the mechanical departments of each factory. Some special features were prominently emphasized.

The new Best 20-30 has all working parts completely housed. The motor is lubricated by a full force feed system. In place of the old rubber radiator connections this new tractor has steel tube connections. With the exception of the engine all bearings are full anti-friction type.

The Holt 14-25, a new member of the Holt family, carries a motor that was developed by Pliny Holt, designer of government gun mounts. It is the overhead valve type, so much used in auto building. Its combustion chambers are machined to absolute smoothness, in place of being simply cast and left rough. The chambers are dome shape, reflecting the fuel gas directly to the pistons. All belts are eliminated by the use of gears.

Simplicity marks the action of the new 9-16 Cletrac. It has but one oil chamber. Oil the motor and the tractor is oiled. The main drive shaft is full floating and the rollers run on a double pair of roller bearings. All parts are accessible.

The wheel type Gladiator is a new one on the market. It is 12-20 horsepower and carries its plows attached to the frame directly under the seat. They are raised and lowered by means of an hydraulic control. Standard roller bearings are used throughout. A Widely four cylinder motor is mounted on a heavy steel frame and oil is supplied by means of a force feed system. Kingston high tension magneto and Kingston carburetor are used. The tractor, with plows attached, will turn inside of a nine foot circle.

The new Yuba model 25-40 has the two clutch transmission system which enables it to be turned as swiftly and easily as a row boat. The clutches are independent of each other and reversible. The Yuba is suited to side hill work and will do sand jobs as well as hard surfaces. The transmission is in an air tight, dust proof semi-steel case and runs in an oil bath. This tractor has a maximum sustained draw bar pull of 6,000 pounds. At low gear it travels 2.06 miles per hour, and at high gear it makes 3.28 miles per hour.

The Wizard 4-pull tractor is scheduled to be ready for delivery from its mammoth concrete factory at Stockton about November 1. In this tractor power is delivered to all four wheels and the entire mechanism is protected from dust and dirt by being completely enclosed. A very unique steering device, as easily operated as your auto, gives the driver complete control of the machine. This tractor is a combination of science, invention and experience. It has the Kroyer 40 horsepower motor with a draw bar rating of 20 horsepower normal and a belt pulley rating of 35 horsepower. The forward speeds are two and one-half and four miles per hour, with a reverse speed of two miles per hour. The Wizard has performed some clever stunts and its practical use bids fair to prove it a wonderful tractor.

Many of the old line tractors were not on hand. As the old ones have dropped out others have come to take their places and attract buyers, which should mean every farmer in California.

An adjunct to the tractor exhibit was the tent occupied by the University of California and used as a demonstration and lecture room. Professor L. F. Fletcher, assisted by a corps of instructors, gave valuable talks and demonstrations in the proper care and handling of tractors. Their lectures covered everything about a tractor from the tracklayer plater and wheels to the delicate mechanism of the carburetor. The interested crowds that attended these lectures is evidence of the high esteem in which the work is held by owners and operators.

In speaking of this work Professor Fletcher said: "The tractor operator should know more about his machine. We find that much loss and unsatisfactory work results from a lack of familiarity with the working parts of the tractor. It is our endeavor to bring home to the user such information as will enable him to get the most out of his machine."

The lectures embraced complete instruction in valve grinding, fitting of bearings, adjusting piston rings, ignition troubles and how to remedy them, handling low grade oil, troubles with the magneto, troubles with the carburetor, cooling system, etc.

The tractor exhibit was a huge success. Many tractors were sold, more will be sold as a result of it and bigger crops will be raised on California farms.

Livestock the Big Feature at Sacramento

By R. P. Royce

CALIFORNIA is a great livestock state. That fact was definitely established at the state fair at Sacramento last week when by odds the best balanced livestock exhibition ever staged in California was held. The showing in nearly every class was indeed remarkable and when contrasted with the shows of a few years back furnished convincing proof of the progress this state has been making. The 1921 fair, great as it was, can be taken as just a hint of what may be expected in the years to come.

In every department the outstanding feature was the marked quality of the individual exhibits. There were mighty few tag ends and the tops were of a quality to bring forth frank admiration from the judges and the spectators. The most encouraging feature of the livestock show, and the one most often commented on, was the interest manifested by the visitors. Men long familiar with California fairs declared that more people watched the judging this year than ever before, a fact that can be taken to indicate the interest California farmers and ranchers are giving the problem of better livestock. And just here is a good time to remark that a lot more people would have watched the various classes judged if it had been possible for them to have found seats. There is no more pressing problem confronting the state fair management than proper accommodations for judging. This need can and must be met by a large pavilion wherein many of the classes can be rated and the interested public can follow the placing of awards with some degree of comfort. The California state fair has reached such proportions that steps must be taken to provide a pavilion in keeping with the needs and the character of the fair. The plan of judging classes in small tents scattered here and there on the grounds is probably the best arrangement under present circumstances but is no credit to the state and falls far short of being adequate. Many classes this year were so large that great difficulty was experienced in getting them into the ring, and it can be certain that the future growth of the fair will be measured by the accommodations provided.

Another serious problem that confronts the fair management and the exhibitors is the matter of increased prizes and prize money. During the past few years while the livestock industry has been developing so fast, very little increase has been made either in the amount of prize money or the number of places drawing a rating. A classification based on three or four premiums to a class is no inducement for a large number of breeders to participate. Showing is an expense to most exhibitors at best and if the fair is to continue to register growth from year to year some plan must be developed whereby there is wider opportunity for exhibitors to reap some reward. In several classes this year the superintendent made public apology over the inability of the fair board to make awards to animals left out of the money—animals that a few years back would have easily led their classes.

The outstanding feature of the show just closed was the exhibit of beef cattle. Never before in any California show has such an exhibit been made. Few of the large Eastern shows will have more Herefords and Shorthorns and mighty few will have better tops than were seen at Sacramento. This year's show is the first real reflection of the expansion that has been going on in beef circles during the past few years during which time some of the best blood and individuals of the different breeds has found its way to California.

(Continued on Page 296.)

State Convention

By C. B. Messenger

PLANS are making for a great event at the assembly room in Exposition Park, Los Angeles, October 24-26. It is the fifty-fourth of these state conventions held originally under the auspices of the state board of horticulture, later of the state horticultural commissioner and now under the direction of the state department of agriculture. Director Hecke, Chief Deputy Killingsworth, Chief Quarantine Officer Strong and others of the state department were in Los Angeles on Monday to confer with fruit growers and business men of the city as to the program and some of the details of the convention.

It was decided to give to legislation the entire first day of the convention, in the forenoon the addresses and discussions to be led by Secretary Wilson and President Teague of the legislative committee created at the convention held in Chico nearly two years ago, these discussions to have to do with legislation accomplished and legislation needed by the farmers of California, the afternoon to be given to cooperation in the large. The point was made at the preliminary meeting that many cooperative movements had been started and had succeeded for a time, but because of lack of fullest understanding of constitutional rights and of national enactments had either gone on the rocks or been confronted by serious difficulties. There are several attorneys in the state who have made intensive study of these larger legal aspects affecting cooperative movements. One of these, George B. Farrand, has been attorney for the California Fruit Growers Exchange, the Walnut Growers and other cooperative bodies. Mr. Aaron Sapiro of San Francisco has also made thorough investigation of cooperative movements. Another is Judge Morrison of Los Angeles, attorney for alfalfa growers, poultry and other cooperative associations. It is also hoped that Senator M. B. Harris of San Diego will be able to enter into this discussion to be held the afternoon of the first day.

The entire session, both forenoon and afternoon, of the second day of the convention will presumably be given up to discussion of transportation—water transportation, railway, and possibly gasoline. It is hoped that President Lasker or Meyer Lissner of the federal shipping board may be present. An address will be given by Mr. Whitcomb of the exchange, who has made an intensive study of water transportation problems during the past year; also by Walter S. McPherson, who is connected with the Hawaiian Steamship Company.

The evening of the second day is to be the social and feast of reason event. It is hoped Secretary of Agriculture Wallace or Herbert Hoover may arrange contemplated Western trip so as to be present at this time. Secretary Wallace has already been approached in this matter and has not given a positive refusal. Another of great oratorical ability, and one who has grasp of the larger food problems of the world, is Prof. Alonzo Taylor of Stanford University.

The third day, and possibly an evening session, will be in charge of horticultural commissioners and representatives of the state farm bureau. A special committee has been appointed for this, and a full day is promised with speakers of note.

It is to be noted that the cultural side of California farming has been almost entirely ignored, in fact, the director remarked in calling the volunteer committee to order that cultural problems are now so thoroughly discussed at farm bureau centers, at institutes, and even at meetings of horticultural commissioners, that he felt it entirely wise to break away from the methods followed by some former conventions and give attention at all the sessions to the larger questions affecting the entire body of producers.

The state convention of California nurserymen will have ended the Saturday preceding this convention, but the horticultural fair or show which is being staged by the Nurserymen's Association will be open for the entire week of the fruit growers convention. It is probable that the state association of horticultural commissioners will be attended by all the county commissioners of the state.

WHAT ABOUT THAT COVER CROP?

By Fred M. Reed

AT this time of year many ranchers in the citrus belt are trying to make up their minds on the cover crop problem, with a view to deciding whether to plant or not to plant. After all these years of practical trials and technical experiments, the problem is as much "in the air" as ever, along with a lot of other orchard practices that have never been standardized for all localities and types of soil.

The best anyone can do in the matter is to weigh the evidence for and against the cover crop in the light of actual experience under each local set of circumstances and decide on that basis.

In our locality (Riverside) the cover crop is used on about 30 per cent of the citrus acreage, and this proportion does not vary greatly from year to year, although the same growers do not maintain the practice regularly, while others occasionally plant a cover crop "on suspicion," and if they don't get a remarkable increase in the next citrus crop they discard the practice in disgust.

Those growers who consistently keep up the cover crop practice claim that they get a more satisfactory soil condition, that the ground takes and holds water better, that during the time the crop is growing there is a considerable saving of cultivation expense, and many claim that they are able to safely cut down the amount of commercial fertilizers necessary to produce a satisfactory crop. A few cases are reported, usually by salesmen for seed houses and bacteria culture producers, where no other fertilizer is used, but the writer has never seen such results himself.

On the other hand, the growers who reject the cover crop practice claim that there is no appreciable saving in fertilizer expense, that the cover cropped groves are apt to be colder in frosty weather than the clean cultivated ones, that in wet weather there is more damage to the fruit by fungus troubles, and finally that there is no proof that the cover crop as usually grown is of any benefit to a citrus grove either in quantity or quality of fruit or condition of trees and soil.

Inasmuch as good, bad and indifferent examples of the cover crop practice exist in every locality that the writer has so far observed, he maintains that it is up to each grower to use his own best judgment.

Theoretically and scientifically, the advantages are certainly on the side of the cover crop, while on the practical side many successful growers seem to get perfectly satisfactory results without the help of the festive legume and its alleged nitrogen gathering bacteria.

A few growers in our locality who have extra water are using cow peas or beans as a summer cover crop, and the young orchard of the citrus experiment station is a very fine testimonial to the practice.

The melilotus seed now on the market is reasonable in price and has a high proportion of viability, so that no one need to plant with any doubt of getting a stand, and there are almost as many methods of planting as there are planters, but with us the most consistently best results seem to follow broadcast sowing, before an irrigation in September or October, and sowing part of the seed before and part after the furrows are drawn.

CALIFORNIA FLOWER SHOW AND HORTICULTURAL EXHIBITION

The nurseymen and horticulturalists are working to make the forthcoming show at Exposition Park, Los Angeles, October 20-26, not only a beautiful but an instructive exhibition. It will not be a dahlia show, a rose show, a chrysanthemum show, but it will be a complete show in all seasonal flowers. One but needs to visit Exposition Park to ascertain the scope of the exposition. The sunken gardens are fast rounding into shape. A description will not reveal the wonderful coloring, the kaleidoscopic arrangement of some of the rarest and most beautiful flowers, and there are seven acres of it—of beauty.

A mammoth tent will house the cut flowers and floral features. The Pasadena Horticultural Society has announced that practically 3,500 feet of space will be required by members. Thousands of feet of space have been taken by exhibitors from San Francisco, Eureka, San Jose, Sacramento, Santa Barbara and communities near Los Angeles.

Arrangements are being made for suitable ceremonies to open the show and for many entertainment features. Exposition officials expect an attendance of at least 150,000. Thousands of winter visitors will be in Los Angeles and with four big horticultural and fruit conventions here during the show, its success seems assured. The technical ideas that will be incorporated will be decidedly beneficial to every member of the industry. Demonstrations and lectures given daily at sessions of the California Association of Nurserymen, whose convention is scheduled during the show, will prove very helpful

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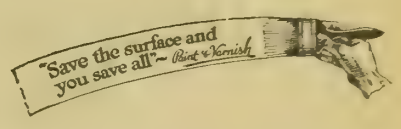

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Again the Cover Crop

By William M. Bristol

WITH no intention of being irreverent, the orange growers of Southern California have nullified the Scriptural maxim that "Whatsoever a man soweth that shall he also reap," for year after year they plant all manner of crops between their trees—and then plow them under.

A note from the editor of the Cultivator asks for a short article on "cover crops, shade crops, green manure crops, or whatever we choose to call them." Intentionally or unintentionally he thereby calls for a vote on the choice of a definite term for these crops. Personally I prefer the term "cover crop," for, if the editor will pardon the big words, the alliteration is euphonious, and the phrase is broad enough to include all the various crops of this character, for whatever purpose they may be planted. When the question of purpose comes up there is time to go into further detail.

Asking a man to write on the cover crop question, however, is inviting him to take part in a game of guessing. Since the planting of these crops in the citrus orchards of California was begun the growers have said "Hello" and "Goodbye" to a vast throng of candidates for their favor. "What I know about so and so" is a popular way of heading a story. But in writing on the cover crop subject I feel like saying, "What I think I know," for every year or two I have to unlearn nearly everything and start over again.

A Kentucky colonel once said to a man: "My dear fellow, don't speak of any whisky as 'bad'; if you must make comparisons, say that some whiskies are better than others." I am a firm believer in cover crops and have tried, successively, Canadian peas, vetch, lupines and Melilotus Indica for winter, and alfalfa, cow peas and Melilotus alba for summer. I am firmly convinced that all are good but that some are better than others, the question of preference turning upon the character of soil and the particular purpose for which the crop is planted.

At the date of writing this (September 6) I have just finished turning under a magnificent crop of Whippoorwill cow-peas, planted the first week in June. The job was done with three implements, an in-throw disk to knock them down and pull them away from the trees, an out-throw disk heavily weighted and set nearly straight, to chop them up, and a one horse plow to turn them under. Immediately after the plowing was finished the ground was harrowed twice, with the teeth set nearly flat, the purpose being to pack the moist earth on the vines so they would decay quickly and permit of making furrows for irrigation within a few weeks. The soil is a gravelly loam, and the disk implements went in immediately after the water was shut off after having run for 24 hours in the furrows made at the time of planting. One implement followed another so quickly that what was a plot of luxuriant pea vines in the morning was simply a plot of bare ground at night.

I grow summer cover crops for a number of reasons, and one of these reasons is as compelling as all the others combined. My orchard extends for more than half a mile up the rather steep slope of the East Highlands mesa, being nearly 300 feet higher at the top than at the bottom. Long ago I learned to my sorrow that at intervals of a few years a summer cloudburst drops down unexpectedly along the foothills; and two inches of rain within an hour can do untold damage on a long and steep slope where the soil is under clean cultivation. Once it took half a dozen teams a month to haul in enough soil to replace that washed away, and I saw that I must find some means of preventing a repetition of the disaster. "If brush on a mountainside prevents erosion it follows that vegetation growing in an orchard will perform the same service," I meditated; and the summer cover crop was my solution of the problem of guarding against the summer cloudburst. Since I began the practice there has been no opportunity to demonstrate the correctness of the logic, but I have not the slightest doubt about it. And apparently the summer cloudburst fears to try conclusions with my hillside with its broad bands of green cowpeas, for we have had no heavy summer rains since the peas went on guard. If the question is asked: "What protection have you between the downing of the summer crop and the growth of the winter crop," my answer is that during the 30 years I have lived here there has been no rain between August and December that could be called a cloudburst. Anticipating the further question: "If a summer cover crop in alternate lands is a good thing why wouldn't it be twice as good in every land," my answer is that as soon as I can get water enough and fertilizer enough I am going to try it. I pump all my water, the maximum lift being over 300 feet. My duplex plunger pump, equipped with wonderful new valves which eliminate all slippage, lifts 20 miners inches night and day continuously throughout the irrigating season, and I use it all on 40 acres of oranges. Alternate lands are irrigated each day and we get over the tract about once in three weeks, which means that each tree gets water on one side about once in ten days. I heartily agree with Messrs. Vaile and Surr that frequent irrigation is good for citrus trees.

I believe that a good crop of fruit and a good cover crop can be grown on the same piece of ground at the same time if there is abundant food and water for both. Certain it is that my trees have flourished so far under the alternate land system and I see no reason to turn backward. I have read with much interest the report of Messrs. Vaile and Surr on their experiments in the Tulare region and of their decision that growing alfalfa in alternate lands to provide organic matter for the other lands is not feasible. Many years ago I tried alfalfa, but discarded it for two reasons. In stating the first reason I am putting into words what I believe to be a fact, and one which I have not seen in print, namely, that it is not the growing of the cover crop that is beneficial to the soil, but rather its death and decay. It is true that the perforation of the hardened earth by the vigorous roots of alfalfa or melilotus alba affords opportunity for the penetration of irrigation water, but it is also true that there is no open hole there until the root which made it is dead and gone. For this reason a strong growing plant like the annual melilotus alba or Hubam clover is preferable to a perennial like alfalfa or even the bi-ennial melilotus alba. My second objection to alfalfa in an orchard is that it is almost impossible to get rid of it without resorting to the grub hoe.

As to the value of the summer cover crop in shading the ground to prevent the so-called June drop I am still skeptical. Even under favorable climatic conditions the orange tree seems, intuitively, to drop most of its crop unless there is abundant fertility available in the soil for its maturing. When the tree is putting out its blossom and fruit bearing shoots in the springtime it is also making below ground a corresponding growth of fine fibrous roots to support those shoots, as well as the blossoms and the fruits they are to carry. If these shoots were systematically destroyed and removed from the tree it is obvious that there would be no crop. Is it not logical, then, that the destruction of the roots formed especially to feed those shoots will also shorten the crop? We have all seen trees growing in corners where little or no cultivation is possible and yet carrying heavy crops and we have wondered thereat. I believe we shall yet find that, cover crop or no cover crop, the proper thing in an orange orchard is to pour on the fertilizer and the water and cultivate no more than is actually necessary to accomplish this feeding and watering.

The desire of the editor at this particular time was, however, that some one should state the latest knowledge on winter cover crops, and so far I

have discoursed on the summer crop only. I can only say that I am still using melilotus indica as a standby for winter but am trying a block of purple vetch. A line in my old Spencerian copy book 40 years ago ran, "Quit not certainty for hope." And surely melilotus indica is a certainty. It may be driven into oblivion by vetch and the big horse bean, but the price of one big horse bean will buy a hundred seeds of melilotus, and they are ten times as sure to sprout and grow. I have already sowed some blocks of my orchard to melilotus and shall finish before October first. My practice is to irrigate, cultivate, and a few days later, while the ground is still moist enough to permit, make good deep furrows and sow the seed broadcast over them. It is not necessary to cover the seed in any way, the irrigating water and the rains will attend to that. Should hot and dry weather kill the plants which will be started by irrigation in the furrows there will still be enough unsprouted seed left on the intervening ridges to make a crop anyhow when the rains come. But if a good stand comes from the irrigation it will pay to keep pouring on the water for the sake of an early crop.

Cover Crops

By E. L. Koethen

WHEN the earth was in process of formation, the rocks had just cooled off, and there was no soil in which vegetation could grow. In course of time the rocks began to weather and disintegrate. Mosses formed in the mellow dust and, dying, left a deposit of organic matter. This process continued through long periods and finally ended in the growth of plants of a higher order, animals began to add to the accumulation of organic matter and thus our soils have been built up by slow but sure methods into fertile lands.

Man has found methods of accelerating nature's methods in many ways. The use of cover crops is one of these. Instead of waiting countless ages for the building up of humus deficient soils the farmer plants seed of plants that form a large tonnage of organic matter, and when grown plows it under that it may rot and become a part of the soil. As may be expected such a crop when plowed under into a moist soil is soon lost to view but its effect is magical in building up the soil.

Deficient in Humus

The chemist has declared our soils in this arid country deficient in humus. This was to be expected, large crops of herbage are not produced naturally in this climate. While what plants there are grow with deep roots and deposit humus at greater depths than in soils of humid climate, the aggregate amount of humus contained in the soil is much less. For this reason it is necessary that we should seek to build up the humus content of our soils. The past history of our methods has been just the contrary. While the soil was in dry farm crops it was the custom to burn the straw and allow the humus content to continually decrease. Then when the orchards were planted this wasteful method was continued. It was claimed that the use of manure on citrus orchards was injurious, getting the idea from Florida where it is even now claimed that it induces dieback to apply manures. The continual practice of clean cultivation is continually burning up the humus content and so it is no wonder that we often hear the claim made that the citrus orchards are not as productive as they formerly were. This has been illustrated vividly by observing the planting of oranges on land which had been in alfalfa for a period. The growth in such cases has been wonderful to behold for a time, but if the addition of humus material has been neglected they soon went back to deficient wood growth.

Humus the Soil Solvent

Humus has been referred to above as an essential to real fertility. It is not necessary here to define just what this mysterious substance is. Suffice to say that it is decayed or decaying organic matter. It is the soil solvent which has the power to dissolve inert potash, phosphoric acid and other unavailable materials which may be in the soils but of no value because of their being in a form not suitable for plant feeding. For these reasons it is not likely that we will soon find any method of supplying this substance in sufficient quantities to overstock the soil. Every method of accumulation should be hailed with satisfaction if not too expensive. Manures are expensive and there is not a sufficient supply in sight to supply the demand. Alfalfa hay is excellent but is also expensive. Straw is good but should not be applied in the spring as it delays nitrification. Any refuse material found on the ranch that will decay should be converted into humus material, but after all is counted there is still a deficiency which can be supplied in the form of cover crops.

Accretion of Nitrogen

The above treats of the accumulation of humus alone, but it is also possible to increase the nitrogen content of the soil by the use of the proper kind of cover crops. We are often met by the objection that a cover crop "takes more from the soil than it returns." This is not true. In the case of barley and other non-leguminous crops it is true that very little new matter is placed into the soil. It is now known that most cultures do take a certain amount of nitrogen from the atmosphere, but it is in such small quantities that it is negligible. But all the matter that comes from the soil in growing a crop is returned to it when it is plowed under and decays. In addition to this there is a considerable amount of carbon taken from gasses absorbed by the plant that goes into the soil that was not there before. But what is of more interest is the fact that it goes back into the soil in what we call organic matter. The minerals that were taken from the soil cease to be mineral simply but are subject to action of living organisms and the soil is transformed from an inert mass to a home for billions of living things that are put to work for our benefit.

Legumes Desirable.

Such plants as peas, beans, clovers, vetches and others have the power through the intervention of bacteria to take nitrogen from the air. Other plants live in the air which is two-thirds nitrogen, but can only to a very limited extent take it into their organisms. Even the ancients knew that clover plowed under improved the soil and made it fertile. But they never dreamed of the reason why. Now the question comes as to which legume to plant. There are many that have been tried, and most of them have been good, but there is a choice. Among the first plants used were Canada peas. A fine tonnage was obtained and they made a rapid growth where the soil was inoculated for them. But it was soon found that they were subject to frost injury in exposed places, and what was still worse, after a few crops in succession lice attacked them and they were practically abandoned. The common vetch or winter vetch came next in popularity. But it also succumbed to the attacks of the lice.

Of late we have been informed that the purple vetch has made the best tonnage of all the plants tried at the experiment station grounds.

Of all the plants thus far tried out we think the yellow melilot has shown the least objectionable features. It is hardy, comes up whenever the climatic conditions become favorable and makes a very large tonnage when at its best. No enemies thus far have attacked it, but its one defect is its slow growth. That is, it grows fast enough in the spring months but lags during the fall and early winter.

Plant an Orchard

Our foothill soil and location produces a tree that for hardiness, good roots, and freedom from disease cannot be duplicated by any other section

Growing fruit is the best paying business in California.

The acid test of any business is not what it will do under favorable conditions but what it will do under adverse conditions.

Even under this year's depreciated values, the orchardist with a block of **Prunes, Bartlett Pears, Apricots, Cherries, Raisins, Shipping Grapes, Clingstone Peaches, Drying Peaches, Fall Pears, Almonds, Shipping Peaches, Shipping Plums, Canning Plums,** and **Figs** will make more money than the grower of grain, hay, alfalfa, beans, rice, or the dairyman.

The trees you plant now will, five and six years hence, assure your share in the profits inherent to the California fruit grower.

The supply of trees in the State available for planting is not over 60 per cent of the trees budded last fall. **This will result in a shortage of some of the best standard varieties.**

We offer for your planting the most complete assortment of commercial fruit varieties.

Our trees are the best that care in propagation and efficient workmanship can produce.

Our catalogue, full of accurate practical horticultural information and suggestions, and our thirty years' experience in fruit growing and fruit marketing, are at your service for the asking.

Submit us a list of your tree wants for quotation while the varieties you desire are still available in our foothill grown stock.

Write me today.

J. E. Bergtholdt
Sec. and Mgr.

Member of Bud Selection Association of California

SILVA-BERGTHOLDT CO.
NEWCASTLE, CALIF.

Rediscount of Citrus Paper

THERE was never such appreciation of the use of credit and the power of credit in handling the crops and productions of orchard and farm. From time immemorial the farmer "who has to borrow" has been looked upon with suspicion, at least by some of the overcareful. True, some of these have been borrowers without vision as to the outcome, who have failed to meet their obligations and have discredited the whole credit system. Meantime the middleman, or possibly the miller, the canner, or other manufacturer or finisher of farm products, has borrowed almost unlimitedly at low rates of interest, making quick turn of the product and usually large profits. There is no reason why the producer of ability may not carry on his plant with the minimum of investment, using at harvesting and marketing time his credit to carry, for the few days necessary, the large final expense on the crop. But producer's paper has not been considered sufficiently "liquid." Bankers have not devised a system which seemed to meet the needs of the farmer, and the good old plan of holding him up for long interest and often for a still longer "commission for securing the loan" for him has resulted in overcharge of the man who is least able to bear it. The federal reserve bank has corrected some of the abuses, the war finance corporation is still further aiding, and perhaps of even greater importance is the fact that city bankers are realizing that their true prosperity rests on the success of the farmers, and the success of the farmers rests, at least in a great part, on the proper system of credit.

Cotton growers, grain growers, wool producers, and now the fruit growers are being aided through the war finance corporation, and this has been of material aid, at least according to the belief of many, in a more satisfactory movement of California fruits and, in fact, all crops.

The California Fruit Growers Exchange has been investigating as to rediscounting paper with the federal reserve bank. Farrand & Slosson, attorneys at law, have made extended study of this, and have reported their conclusions directed to fruit growers associations, members of the exchange. This report reviews procedure required by the federal reserve bank and by member banks dealing with it, also authority of the various associations and necessity of their having in their articles of incorporation and by-laws clauses specifically authorizing borrowing by the association. The report also refers to the form of note required and to the financial statement which must be made, and closes with this summary.

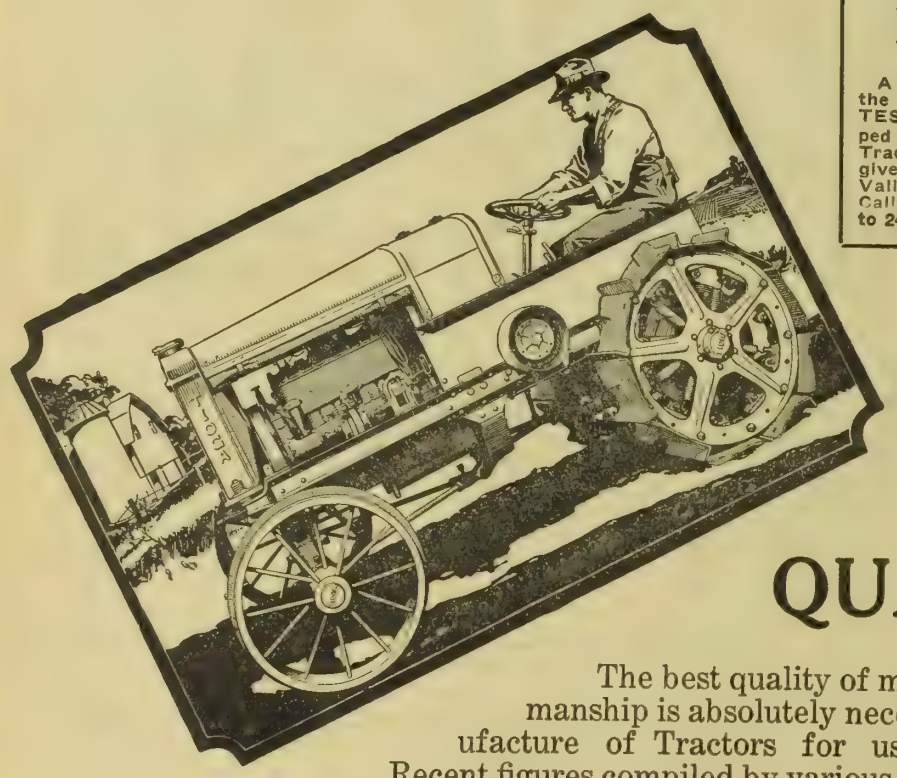
Summary

The file which a local association submits to its local banker accompanying its paper intended for rediscount should show that the association has been properly incorporated, that it has legal authority to engage in the business of picking and packing fruit, that it has legal authority to borrow money, that it has authority to borrow money for particular purposes in question, that there are no clauses restricting this authority of the association contained either in the by-laws or articles of incorporation, that contracts do exist between such local association and its growers whereby such growers definitely authorize the association to receive, pack, and market their fruit, and in so many words authorizing the association to deduct from the proceeds of the fruit when sold the amount of the association's charges for receiving, picking, packing and marketing the fruit; the amounts to be paid the grower to be deferred until after such expenses are paid; in other words, giving the association a lien upon the fruit and the proceeds for the repayment of these charges. It is not sufficient that it be the understanding or the practice of the growers and the local association that such liens do now exist, or that the association may make such deductions; for the purposes of rediscounting the paper such understandings must be reduced to writing and be a part of the agreement between the growers and the association. It is a matter of federal reserve bank policy and of policy of the bank in local communities, that debts for permanent improvements should not be carried as mere commercial loans. That policy is to the advantage of the local bank, as well as to the advantage of the local association; the payment of debts for permanent improvements should be deferred or secured, or both deferred and secured, according to the situation which presents itself in each locality, but for the purpose of the present discussion, it will be necessary in order to rediscount the association paper with the federal reserve bank that such debts be either deferred as to maturity date or secured. When so deferred or secured and removed from the list of current debts, the financial statement of the association will then show that its sole current borrowings are for current purposes, namely, picking, packing and marketing the fruit; that it has as assets to repay such debts the fruit of the growers in the house. in transit, sold, and in process of collection. Its financial statement thus shows the necessary ratio of quick assets to current debts, and the paper will be found to be both eligible and acceptable for rediscount.

Any bank desiring to offer local association paper for rediscount should receive the cooperation of the local association in order to comply with the suggestions set forth in this statement. The federal reserve bank desires that the right of the association to engage in the business in question, to borrow money, and that such association does have the requisite legal authority, be evidenced, in addition to the documents submitted, by the opinion of the association's attorney, that such is the legal effect of the documents submitted.

Many of the local associations are already in a position to comply with everything set forth in this statement and with each and every requirement of the federal reserve bank; some will be required to take out of their list of current debts moneys borrowed for permanent improvements, which can be done by deferring the maturity date or securing the same. That would not be a bad idea, entirely independent of rediscounting paper with the federal reserve bank. There are some associations which undoubtedly cannot at present comply with these requirements. If they shall desire to rediscount their paper changes must be made in articles of incorporation or in by-laws or in contracts, or in both, so that when such changes are made the requirements of the federal reserve bank will be met with.

It may seem at first that these requirements are numerous and difficult to comply with, but in most instances such will not be found to be the case. If any great desire exists on the part of local banks or local associations to qualify the paper the way is now open, and such qualification can be had without serious inconvenience. The federal reserve bank has never doubted the "eligibility" of the paper, and



NOTICE

A daily demonstration of the TIOGA STRENGTH TESTED TRACTORS equipped with P. T. (Positive Traction) Tracks will be given at the San Fernando Valley Fair, San Fernando, California, September 19th to 24th.

QUALITY

The best quality of material and workmanship is absolutely necessary in the manufacture of Tractors for use in California. Recent figures compiled by various Universities show that the average use of a tractor in the Middle West and East is about 30 days a year. THE AVERAGE USE OF A TRACTOR IN SOUTHERN CALIFORNIA IS OVER 150 DAYS A YEAR.

The Tioga Strength Tested Tractor Has Been Built to Meet California Conditions

It has STRENGTH because it is built of the best material available and the finest workmanship is used. It has been thoroughly TESTED in all the usual and many unusual ways to discover weaknesses and when found were corrected until now the TIOGA TRACTOR is as complete and perfect a machine the best engineering talent can produce.
QUALITY is a virtue which cannot be lifted aside, for a price more interesting.

"Tioga Strength Tested Tractors and Quality Are Synonymous."

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THE TIOGA TRACTOR CO.
Subsidiary Steinmetz Electric Motor Car Corp.
Dr. Chas. P. Steinmetz,
Chief Consulting Engineer

has upon full consideration and discussion concluded that if the financial statement is set up as herein outlined, segregating borrowings for current purposes from those borrowings represented by permanent investments, and if, after such setup the amount deductible from fruit payments is sufficient to properly margin the current borrowings, the paper of such association will be acceptable for rediscount.

The exchange system of marketing citrus fruit is essentially a business organization. Local associations by using its facilities secure the maximum distribution of their output at a minimum of expense. The exchange's marketing cost is the lowest of any organization marketing perishable products in the United States. During the season just closed the exchange shippers sold through its facilities approximately $60,000,000 in value, with a loss from bad bills of not to exceed $435.83. During a 17 year period product to the extent of $376,000,000 was sold with a loss not to exceed, from bad bills and other similar causes, of $8,775, or approximately 9-4000 of one per cent of the f. o. b. returns.

The reputation of the exchange system, and of the local associations composing its membership, for business integrity and for the repayment of their obligations, is of the best. By making available to the local associations and to their bankers the extended resources of the federal reserve system in financing the packing and marketing of their output, an added element of strength is furnished to the industry, and is an opportunity which will be much appreciated and made use of by the local associations and their bankers.

FARM BUREAU ANNUAL

The Los Angeles Farm Bureau will hold its annual meeting at Ganesha Park, Pomona, Wednesday, September 28. Official notice has been sent out that every one of its more than 2,000 members is expected to be there at 10 o'clock sharp. At that hour several departmental meetings will be held, notably those of dairymen, potato growers, and poultrymen. At 11 o'clock the business session will commence with reports from these departments. The election of officers for the coming year will follow and all business must close at 12:30, for then

Everybody Will Eat

Every member is asked to bring his own lunch, also a knife, fork, spoon and cup. The latter will be filled and refilled, free of charge, with coffee, sugar and cream provided by the Pomona Valley center. Though you bring your own lunch the committee in charge ask that you turn it over to them for arranging and serving, retaining only your dining tools. At 2 o'clock the program will commence with addresses by prominent speakers, one of whom will be Dean Hunt of the state university. After the speech making will follow the awarding of 31 silver loving cups and other prizes awarded in the dairy cow competition. The last feature on the program will be a visit to the grounds where the egg laying contest is to begin the Saturday following. The buildings recently erected will be of interest to all, especially to poultry raisers.

BEVERAGE EXPOSITION

California grape syrups and other grape products are to be featured at the coming Beverage Exposition to be held in St. Louis, October 24-29. The exhibit is to be in charge of Mrs. Margaret Coulson, assistant in viticultural work in the state department of agriculture. The Grape Grower says: "For a number of years Mrs. Coulson was connected with the state board of viticultural commissioners at Sacramento, and at present she is in charge of the San Francisco office of the viticultural division of the state department of agriculture in the Ferry building at San Francisco. She has had considerable experience in exhibit work at state fairs and various land shows and is familiar with every phase of the grape industry."

FURROW-MANURE DISTRIBUTION IN CITRUS ORCHARDS

(Continued from Page 279.)

plied every year, the broadcasting constituting simply an additional application.

Concentrated Fertilizers in Furrows

The question is frequently asked as to whether or not concentrated commercial or other fertilizers should be applied in the manure furrows. If the concentrated fertilizer is to be applied at the same time as the stable manure or other coarse organic fertilizer, it seems probable that it can safely be applied in the same furrows. On the other hand, if the commercial fertilizers are applied during the winter or early spring seasons after the manures have been distributed in the furrows, as is usually the case, it seems likely that they should be broadcasted or applied in the irrigation furrows as is often done. One of the leading growers who has used the furrow-manure method since its introduction has recently told the writer that he does not believe that the highly concentrated fertilizers should be applied in the manure furrows. Others have expressed their opinion that it can be done with the best of results. Differences in soil or other conditions probably explain the differences of opinion in this regard.

General Observations

Last September the writer visited an orange ranch in northern California where manure was being broadcasted in the orchard. Some of the manure was lying out exposed to the sun and weather and had been left in this condition several days. From the recently distributed manure one could smell strongly the escaping plant food. It was really painful to observe this loss, especially where the pale and pitiful looking trees showed such a striking appearance showing the need of fertilizer. One of the members of the party said to the foreman: "Why don't you use the furrow-manure method and save this apparent loss of plant food from the manure?" The foreman replied: "Yes, I have read all about that 'trenching' system. It is one of them new-fangled notions put out by some professor. Anyhow it's too much trouble for me. I am a practical orange man." The only comment necessary was that his trees looked like his talk.

Now that the cost of stable manure, alfalfa hay, and bean straw has come down in price within the reach of the growers, the method of their application should be carefully considered. There are opportunities in every district to consult with users of the furrow-manure method and for studying the results of its use for, in some cases, a period of several years. The writer believes that it will pay every grower interested in this matter and not now using this method to investigate such cases and consider a trial of the furrow-manure method this fall.

SWEEPSTAKE AWARDS AT STATE FAIR

Complete horticultural sweepstake county awards have just been announced by the horticultural judges of the 1921 California state fair. These awards were as follows:

Apples—Humboldt, 1; Mendocino, 2.

Pears—Yolo, 1; Placer, 2; Fresno, 3.

Peaches—Kings, 1; Fresno, 2; San Joaquin, 3.

Plums or prunes—Fresno, 1; Kings, 2; Placer, 3.

Table grapes—Kings, 1; Fresno, 2; Yolo, 3.

Citrus fruit—Los Angeles.

Best exhibit of dried fruit—Fresno, 1; Kings, 2; Yolo, 3.

Best, largest and most varied exhibit—Stanislaus.

Best, largest and most varied and artistically arranged exhibit—Stanislaus, 1; Kings, 2; Fresno, 3; Yolo, 4.

Best, largest and most varied and artistically arranged exhibit of beans—Fresno, 1; Yolo, 2.

Same of flours and meals—Yolo, 1; Fresno, 2.

Best, most comprehensive and instructive exhibit of castor beans—Kings.

Most meritorious exhibit of rice—Colusa, 1; Yolo, 2.

Manteca sprang a surprise on Lodi by winning the first prize for Flaming Tokay grapes, heretofore always considered Lodi's own.

Colusa County won the first prize for improved French prunes, while Placer walked away with the Hungarian prune award, and also the giant plum prize. Yolo County created surprise by winning the first prize for cantaloupes away from the famed melon districts of the San Joaquin Valley. She was also the only county to win a first prize for an apple variety, except Humboldt. Her Ben Davis entry won high honors.

Colusa County was next to Los Angeles in lemons. Kings captured all apricot first prizes except one, Royal apricots, which went to Yolo. San Joaquin County won three nectarine firsts, Kings two, and Fresno and Placer each one. Stanislaus won first in Calimyrna figs, while Fresno was first in Mission and Kadota figs.

The sweepstake prize for the most extensive, perfect and varied exhibit by one person or farm went to the Northern California Counties Association.

OBJECT JUSTIFIES MEANS

Mrs. C.: "Why did you give the girl such a good recommendation. I find her impossible. I don't know what to do with her."

Mrs. D.: "That's just the reason I had to do it in order to get rid of her. I was in the same fix as you are now."

Would you take medicine by a correspondence course?

THEN be careful how you allow oil charts to influence you in buying lubricating oil and greases. Just the same as a doctor prescribes certain medicines for each separate case, so does a good mechanic recommend oils of certain grades for different types of motors.

The age and condition of your motor determines the grade of oil you should use. As you choose a family physician so should you choose a mechanic or garage man. Once you find him, grapple him to you with hooks of steel and let him be your autodoctor exclusively.

Oil charts are to be used only when there is not a mechanic's advice available.

ASK YOUR MECHANIC ABOUT

"TRACTO-RITE"

Registered U. S Patent Office

TRACTOR OIL

PUENTE OIL CO, Los Angeles

HIGGINS BUILDING

GET THE RIGHT IMPLEMENT

NIGGS Combination **TRACTOR** Cultivator and Furrower

OVER 350 SOLD THE LAST YEAR

The Nigg Combination Cultivator and Furrower

The Nigg Combination Tractor Cultivator and Furrower is a special orchard implement that has met the demand of the orchardists of Southern California as no other similar implement. The automatic lift, interchangeable boxings in wheels and adjustable features to pitch, and depth make it a very desirable orchard implement. Can be attached to any tractor. See the NIGG Cultivator at the San Fernando Fair. Write or call

E. A. NIGG and CO., Implement Manufacturers, Covina, Cal.

We manufacture and sell special equipment for Fordson Tractors.

Hurley's Gooseneck Cultivator

The Best Furrowing and Leveling Machine on the Market

This is the lightest weight efficient Cultivator and Furrower on the market. Its construction of spring steel gives it a cross bar that yields to sudden strains and it springs back. Detach the shovels and wheels and you have the best leveler you can buy. Patented reinforced spring steel draw bar 5-in. x ½-in. with bar below 5-in. x ⅜-in. reinforced on two edges with angle iron. Shanks diamond shape 1⅛ x 1¼. Hitches for all tractors and horses. Made 6, 7 and 8 ft. 6 ft. only $115 with 9 shanks. Horse drawn cultivator has seat and front truck. This cultivator will be demonstrated at the San Fernando Fair. Some territory open. If your dealer cannot supply you write

M. N. HURLEY,

138 S. Comstock Ave.,

Whittier, California

KIRKMAN NURSERIES

Established in California in 1888

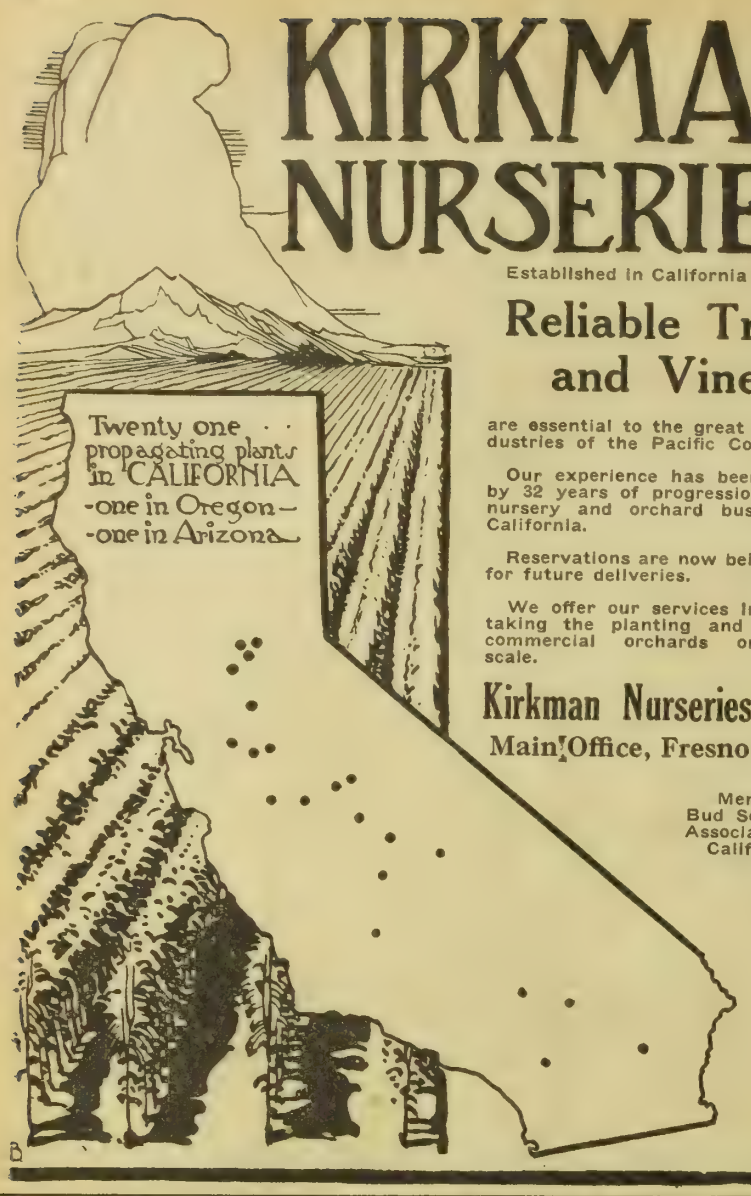
Reliable Trees and Vines

are essential to the great fruit industries of the Pacific Coast.

Our experience has been gained by 32 years of progression in the nursery and orchard business in California.

Reservations are now being made for future deliveries.

We offer our services in undertaking the planting and care of commercial orchards on large scale.



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Main Office, Fresno, Cal.

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Bean Pumps

"Bean" Deep-Well Turbine

Deliver a remarkably large quantity of water from wells of comparative small bore. Thoroughly lubricated. All parts readily accessible. Shaft protected from water, thus eliminating danger of bearings being cut or worn by sand and grit. All sizes. Send coupon.

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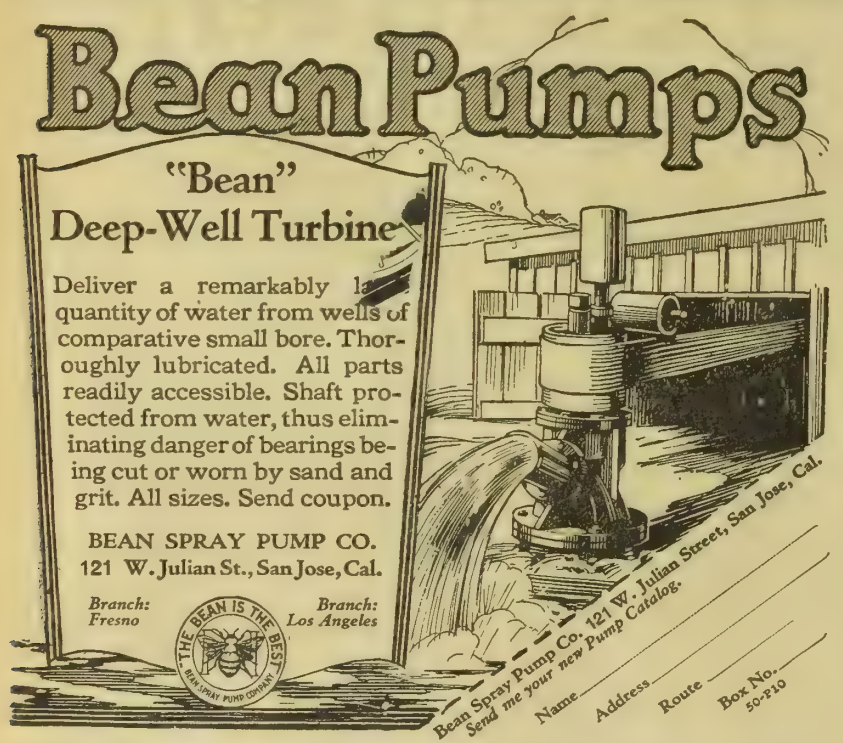


THE FRESNO NURSERY CO. INC.
TRADE MARK
RELIABILITY QUALITY SERVICE
FROM THE ROOTS UP

Headquarters for

FRUIT TREES

Our trees are grown under most favorable conditions in the choicest spots in California.

Let us know your requirements early.

Fresno Nursery Co.

Fresno, California

When Writing Advertisers Mention California Cultivator.

Muscle Shoals Monopoly

GIFFORD PINCHOT is out in open fight against granting to Henry Ford or anyone else the monopoly of the wonderful power possbilities of the Muscle Shoals on the Tennessee River which the government took up during the war and spent millions upon as a war measure in securing power from these rapids for the purpose of making nitrates for ammunition purposes.

Henry Ford proposes to take possession of this great property, and all its power, under an offer which Mr. Pinchot thinks is very favorable to Mr. Ford and not favorable to the people of the U. S. A.. Mr. Pinchot writes:

"The first part of the Ford offer is to lease the Wilson dam and Dam No. 3 for 100 years, with indefinite renewals, provided the government will complete them and install machinery to produce 850,000 horsepower. Mr. Ford offers to pay six per cent on the 28 million dollars which he estimates will be necessary to complete this work, or 3 4-10 per cent on 48 million dollars, Mr. Ford's own estimate of the whole government investment in dams, locks and power houses. Even if we add all other annual payments (the so-called amortization payments, and payments for the repair, maintenance, and operation of dams, gates and locks), the total would be equivalent to interest at the rate of only 3 6-10 per cent. Mr. Ford offers also to give the government 300 horsepower to operate the locks.

"Please note that for the waterpower itself Mr. Ford would pay nothing, and that he would be free from all taxes on the property. Other lessees of waterpower rights from the government not only bear the total cost of building their own dams and powerhouses and pay taxes on them, but they also pay for the waterpower in addition. The Ford offer is like offering a man 3 6-10 per cent on the cost of his factory as rent, and then asking him to throw in a coal mine to supply fuel for the engines for nothing.

"There is no allowance for depreciation, and the government would beyond question have to pay the cost of injury to the dams or locks from floods or other causes. Moreover, there is nothing in the offer to indicate that the government, in order to protect its own property, would not have to bear the expense of replacing enormously costly machinery when it had been worn out in Mr. Ford's service.

"The second part of the Ford offer is to buy Nitrate Plant No. 1, which cost the government in round numbers 13 million dollars; Nitrate Plant No. 2, which cost the government in round numbers 70 million dollars, and other property, which brings the total cost to 85 million dollars, and to pay 5 million dollars for it all. The property for which this offer is made includes steam machinery to produce 160 thousand horsepower, which alone is worth far more than Mr. Ford's offer for the whole. In addition the government is to buy from the Alabama Power Company the land upon which certain of the foregoing structures were built, and to turn that over to Mr. Ford also.

"In return for the lease, for the purchased property, and for the waterpower without charge, Mr. Ford offers in addition to the payments mentioned above, to do three principal things:

"First, 'to maintain Nitrate Plant No. 2 ready to be operated * * * in time of war for the production of explosives,' and in the event of war to turn it over to the government for that purpose.

"Second, 'to operate Nitrate Plant No. 2 to approximate present capacity in the production of nitrogen and other fertilizer compounds,' and in this business to limit his net profit from the manufacture and sale of fertilizer products to eight per cent.

"Third, the offer as written suggests producing, but contains no direct proposal to produce, fertilizer for the benefit of American farmers. That could, of course, be corrected in the final contract, for I have no doubt that Mr. Ford desires to make fertilizer at a total net profit of eight per cent. Nitrate Plant No. 2, however, is not adapted to making fertilizer, but only cyanimid, one of several materials used for the production of fertilizer, and not one of the best at that.

"The fact is that the Ford offer is not mainly a fertilizer proposition. It is seven parts waterpower to one part fertilizer, even if the fertilizer part should work out. For, if Nitrate Plant No. 2 were to be permanently employed in the manufacture of fertilizer it would consume but 100 thousand horsepower out of the 850,000 installation. This is the heart of the whole matter.

"As a waterpower proposition, the Ford offer is in every important point directly contrary to the Roosevelt waterpower policy, which after 15 years of struggle was finally enacted into law last year.

"The Roosevelt policy provides that all waterpower leases shall be limited to 50 years. The Ford offer asks for 100 years with indefinite renewals.

"The Roosevelt policy provides for return of the government work at the end of fifty years. The Ford offer provides for indefinite private possession of the government works.

"The Roosevelt policy provides for regulation of the price to the power consumer. The Ford offer, so far as the United States is concerned, provides no check on what the power consumer must pay.

"The Roosevelt policy provides that public waterpower taken for profit shall make a return to the public. The Ford offer asks for many hundred thousand horsepower for nothing.

"The amount of power Mr. Ford could develop, under his offer, is greater by half than all that is now being developed at Niagara Falls. If Mr. Ford were to pay for it at the rate charged by the government to other companies that build their own works, as Mr. Ford would not, it would cost him about 150 thousand dollars a year.

"Beyond question Nitrate Plant No. 2 ought to be maintained in condition for producing explosives in case of war. Most certainly it ought to be used for making fertilizer for American farmers. The wisdom of developing the waterpower on the Tennessee and its tributaries is beyond question. But all these things can be done with fairness to the public.

"I do not believe that Mr. Ford's offer should be summarily rejected. I do believe that it should be changed.

First, to make it fit the Roosevelt waterpower conservation policy, now the law of the land; second, to make it pay for the property of the people something approaching what that property is really worth; and, third, to make what it offers to the farmers clear beyond doubt.

"It is said that certain Wall street magnates who hate Mr. Ford are anxious that his offer should be rejected. What these men think about Mr. Ford and his offer is surely no reason for giving him public property of enormous value for a consideration wholly inadequate and on terms utterly unfair to the public.

"I should be glad to see Mr. Ford make money, and plenty of money, out of taking over the property of the people as he proposed to do, but not such perpetual and gigantic profits as his offer would assure. It is fair to consider the public also, and to remember that all the annual payments Mr. Ford offers to make would amount to only one-third of the yearly taxation necessary to meet the interest charge (at the Liberty Loan rate of 4¼ per cent) on the government's net investment in the property he proposed to take over, and that he would get the waterpower for nothing."

STATE GRANGE WILL CONVENE

The 49th annual convention of the California State Grange will be held at Yreka, October 18. Arrangements are made for a special car on the train leaving Sacramento at 12:30 a. m. October 16. Free auto camping privileges are provided at the Yreka Auto Park for those who wish to travel in their own cars. Those who wish accommodations in hotels or private homes are urged to communicate as early as possible with W. L. Kleaver, Yreka.

Cover Crops Improve Soil

PLANTING cover or green manure crops is a matter which requires attention in September in most parts of the United States, says the United States department of agriculture.

Clover, vetch and other legumes serve the triple purpose of adding humus to the soil, accumulating nitrogen, and preventing soil erosion. With some tender berry and fruit crops they also serve to protect the roots from severe winter weather. Outside of the nitrogen forming plants, rye is largely used as a cover crop sown in the fall and plowed under in the spring to add organic matter to the soil. The cover crop problem varies largely with locality, but for over winter purposes there is one rule which is universal, and that is to get the crop in the ground in time to secure good growth before freezing weather.

Long Standing Practice

The use of clover or some other legume to enrich the soil is generally considered a cardinal agricultural practice in the humid sections of the United States. It antedates by three-fourths of a century the monumental discovery that legumes store up nitrogen from the air. The belief that clover was a valuable improver rested first on experience, and later experience was substantiated by the discovery of the relation between the legumes and the nodule bacteria.

Other legumes, as the cowpea, the Japan clover and bur clover in the South, and crimson clover on the Atlantic coast, have come into use in the territory not well adapted to red clover. The various vetches are held in widespread favor, different varieties being employed according to climate and crop conditions.

When to Sow

The time of planting and the best crop to use is a matter which local conditions must dictate. Along the north Atlantic coast it is considered best to get these crops in from the first to the middle of August, while in the extreme South the planting may be deferred to early October. In the extreme North hairy vetch is favored as a legume cover, or green manure crop, but rye is also largely planted. From middle Pennsylvania to the north Alabama line crimson clover gives good results. In the extreme South bur clover, vetch and crimson clover are used, as well as velvet beans and cowpeas.

In the extreme Southwest, particularly with the orchardists of Southern California, common vetch is sown in the fall and turned under as early as possible in the spring. Purple vetch is preferred, as it can be turned under one month earlier than other varieties, but until recently there has been extreme scarcity of seed, a condition which is being remedied through the efforts of the department in getting the seed grown in more northern sections of the coast.

Sour clover is used to a large extent, as the seed is cheaper than that of the vetches. Farther north on the coast common vetch gives good results, while east of the mountains in the Northwest hairy vetch is used because of its cold resistant properties.

Broadcasting

Methods with cover crops vary greatly. In the South they are customarily sowed between rows of cotton at the last picking. It is also common to sow the winter crop between corn rows before harvest. Wherever clean cultivation is practiced the soil is likely to be in shape for broadcasting the seed. If convenient, it can be harrowed in. In orchards a light harrowing or disking may be employed if the ground is free from sod. Care must, of course, be taken not to injure the roots. The crop is usually plowed under in the spring, but this is not always done with orchards. Data collected in all parts of the United States show a general benefit from this form of agriculture.

Cover crops are of especial value to small gardeners and truckers, who often find it both difficult and expensive to obtain stable manure. They add the humus which is so necessary to maintain a good physical condition of the soil. Wherever there is a vacant place in the garden a few seeds of rye, vetch, clover, etc., may be sown and raked in. If a suitable rotation of crops is followed all parts of the garden may be covered with a green manure crop once every two or three years.

THE FARM BUREAU EXCHANGE

Forms of organization for county and state farm bureau exchanges in California are explained in a publication issued by the College of Agriculture of the University of California and edited by William R. Camp. The farm bureau exchange has grown out of the need of the farmers for an organization for business purposes in the marketing and distribution of their products. The articles of incorporation and by-laws drawn up by the division of rural institutions is presented in the publication. Separate county farm bureau exchanges are to be formed and then in turn they become members of the California Farm Bureau Exchange. Forms and applications for membership in both organizations are described in the circular which can be obtained from the College of Agriculture of the University of California at Berkeley.

NEW ALFLAFA CIRCULAR

A new state university publication on alfalfa, Circular No. 87, is now ready for distribution to anyone interested who writes and requests it. This circular is written by Prof. W. T. Clarke and deals with soil, water and climate requirements for the raising of alfalfa and the time of irrigation and cutting. Write for it to College of Agriculture at Berkeley.

GOLDEN MEALY BUG

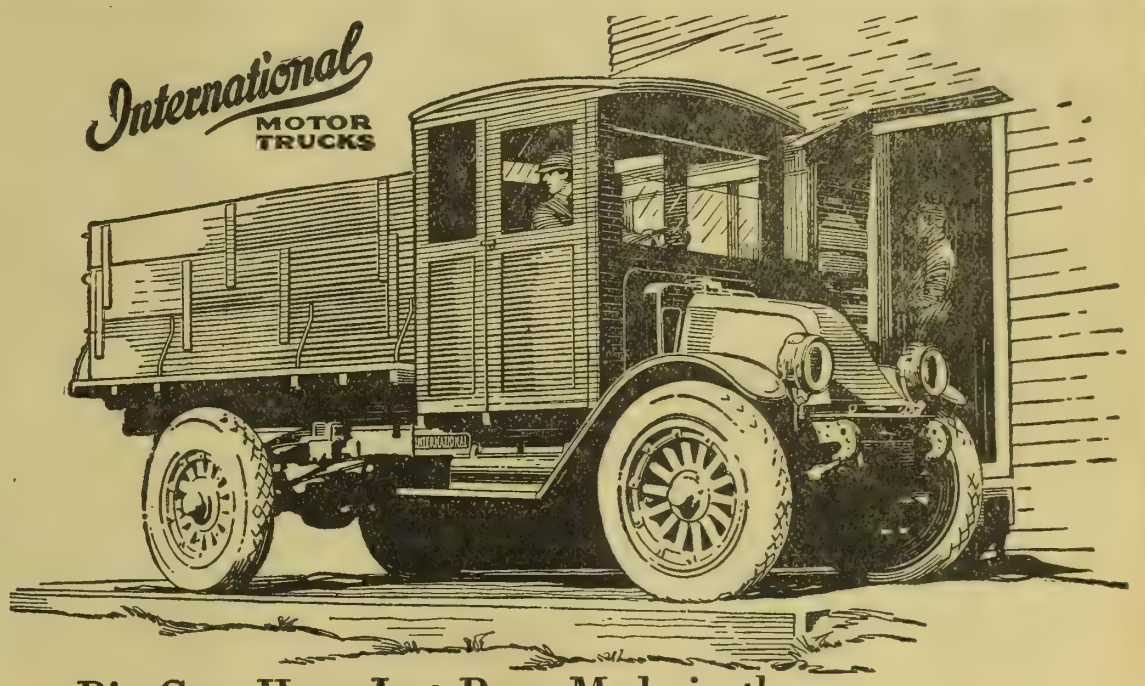
Horticultural Commissioner Ryan reports infestations of the golden mealy bug, Pseudoccocus aurilanatus, have become so bad in the auracaria trees in and around Los Angeles and Pasadena and have so resisted all attempts at controlling them that it is encouraging to receive from all sections the reports of their natural enemies becoming so plentiful as to be considered a nuisance. One such report was that the Hyperaspis (ladybird beetles) came on the porch and attached themselves to the protected places in such numbers that they were a worse nuisance than the mealy bugs in the trees and that they were in such numbers on the ground and cement walks that when washed away with the hose a white foam formed on the water. From material brought to the office, not only Hyperaspis has emerged but large numbers of brown lace wing flies and a smaller number of the green variety. Some specimens not yet emerged appeare to be Scymnus.

STUDYING IN THE ORIENT

Prof. C. W. Woodworth of the state university has a fund of most interesting information as to the oriental viewpoint and the oriental way of doing things. He recently spent some 12 months as instructor in an agricultural college maintained by an interdenominational mission. Agriculture is being taught the bright students in this school in order to make them more efficient as teachers for natives in inland sections which are not accessible to English speaking people. Agriculture is not taught in state maintained schools, but this school with which Prof. Woodworth was connected is proving most popular and is encouraged to the fullest by state officials.

DRIED PEACH PRICES

California Peach and Fig Growers announces another increase on 1921 dried peach price; 1¼ cents on standards, ⅜ on choice, 1½ on extra fancy.



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THE FARMERS of America have invested in 80,000 motor trucks because it is so obvious a fact that the use of horses for hauling—horses plodding at snail-pace over the roads these modern times—is an extravagant waste. Such practice is a millstone on the neck of the farmer's time, and the owners of the 80,000 have thrown the millstone off. They have advanced a long step toward maximum farm efficiency.

On the basis of the 15-year history and reputation of International Motor Trucks in city and rural hauling, we urge you to consider the present complete line of Internationals. Sizes range from the 1,500-pound Speed Truck to the heavy-duty 10,000-pound truck—a size for all needs. Price reductions range from $100 up to $900 per truck. When you come to the revision of your own hauling methods, trust one of these trucks, and International Service, to work for you faithfully.

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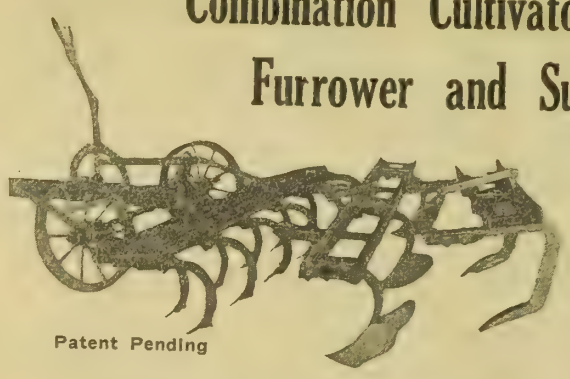

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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Paris Green for Bugs

Please let me know what bugs Paris green is good for. Should it be applied with hot or cold water and how strong should it be mixed? — Subscriber.

Paris green is effective only with bugs which have jaws and eat portions of the leaves, fruit or bark. Scale, aphis and other bugs having sucking tubes may not be reached with Paris green or other poison spray. The rose chafers, squash bugs, twelve spotted beetles and others of the larger eating insects may be reached by applying a poison to leaves or fruit. One of the most common of these poisons is Paris green. A good formula is as follows: Paris green, 1 pound; air slaked lime or dehydrated lime, 5 pounds; water, 200 gallons. Stir the poison into a thin paste with small quantity of cold water. Add that to the lime and strain into a tank containing the water.

Share of Oil

What royalties are customary for oil companies to pay land owners for oil found on their land? Please give maximum and minimum.—Subscriber, Crows Landing.

There are almost as many different ways of dividing profits on oil as there are oil wells. Roughly, and to give an approximate idea, one-sixth of the oil developed usually goes to the owner of the land, sometimes in percentage of oil as it comes from the well, again one-sixth of the net cash return after all expenses are paid. This, of course, is vastly more attractive to the one doing the developing. The owner of land offered an oil lease should employ one of the best attorneys to attend to his interests, for if oil should be developed it might make vast difference as to wording of the contract. Usually the land owner exacts a certain cash deposit and agreement that work shall proceed within a certain time and that a well or a certain number of wells be begun and completed within a certain time. Otherwise, if the land owner makes indefinite lease he may sign away rights to his property for a period of years without securing a penny in return.

Cover Crop

What would be best to plant for green cover crop to be plowed under in apricot and apple orchard, not irrigated?—Subscriber, Watsonville.

The only leguminous crop you could grow would be bur clover, but would suggest the use of barley as better.

Pruning Young Walnut Tree

I have a budded walnut which is nine feet high and which has side shoots clear up to top. This has not been pruned at all. What shall I do for it?—R. A. M., Pasadena.

Leave it alone for this year. It evidently is doing well and needs no pruning.

Drying Zante Grapes

Will you please advise me as to the best and easiest method of drying Zante grapes for currants and as to the best way of removing the small stems from the dried currants?—Subscriber, Folsom.

Zante grapes are dried in the same way as other raisin grapes. Practically the only difference in the method is that currants require a little less time to properly dry.

The small cap stems on currants are best removed by the regular cap stemmer or recleaning machine used for Thompsons. For small amounts it might help to dry the currants as much as possible, even using a slight amount of artificial heat. Place them in a receptacle which can be violently agitated, as these small stems are easily detached when both the fruit and the stem are very dry.—F. K. H.

Alkali Water

Have gained much valuable information from your paper. If the following problem has been taken up it has escaped our notice. Is there any way in which water, decidedly alkali, but otherwise untainted, can be treated to render it fit for cooking and drinking. To meet our need, the method should be simple and inexpensive.—Subscriber, Del Mar.

Certain well waters of arid and semi-arid regions contain considerable quantities of alkali, especially sodium carbonate, in solution. This gives to light colored vegetables cooked in such waters a yellowish color that is very objectionable, and, if present in excessive amounts, renders the water unfit for drinking. There is no entirely satisfactory method of treating these waters. A certain amount of relief is obtained in some cases, however, by adding calcium sulphate in the form of gypsum or plaster of Paris. This neutralizes, to a greater or less extent, the sodium carbonate giving rise to the objectionable alkalinity.

Cory Thornless

In answer to a question asked in the Cultivator of August 27, concerning Cory's Thornless blackberries, will say that we raise them and find them a success. They are a heavy producer where one can irrigate them. I should think it a very good idea for the Tulare farmer to plant his two acres to Cory's Thornless. It is a joy to pick them as there are no sore fingers and arms. We live two and a half miles from the coast and the soil where the berries are planted is a sandy loam.—L. Landon, Watsonville.

Tomato Blight

What is the best way to prevent blight from taking a tomato patch?—Subscriber, Shafter.

There is no remedy; only preventive measures are successful with this pest. Once the blight is apparent from the curling and partial drying of the leaves the plant is entirely beyond help. Disease free seed in disease free soil should be the aim for another year. With the present crop the moment a plant begins to show the characteristic curling it should be removed and burned so as to prevent, so far as possible, the infection securing hold in other plants.

Codling Moth and Mealy Bug

What is the difference between codling moth and mealy bug, and what is the treatment for each?—Subscriber, Pasadena.

The codling moth is a small grayish brown moth that is seldom seen. It is the worn of this moth that does the damage and is so much found in apples and pears. The mealy bug, of which there are several species, is more or less covered with white wool. You could easily confound the mealy bug with woolly aphis found on apple trees. As it is too late for treatment for this season's crop will refer the inquirer to special spray number of the Cultivator which will touch upon both these pests. This will be issued September 24.

Cartons or Pasteboard Containers

An inquirer writing from Anaheim asks as to cartons or corrugated containers for nuts, etc. The letter was answered by mail but returns "Uncalled For." If inquirers will use utmost care in giving us exact address we can often render service which may not be possible through our columns.

Corn Worm

What is best way to protect roasting ears from worms?—Subscriber, Shafter.

The old time remedy was to plant double the amount of corn needed so that the pests would perhaps not destroy all the ears. More recent treatment, however, has been the use of dry arsenate of lead used in small bellows or more often in bag of loose-

(Continued on Page 307.)

A Modern Home is a Wife and Mother Saver

Illustration shows the following "Standard" fixtures:
Pembroke Bath P2310 L with Shower, Laton Lavatory P-3110G, Expulso Closet L-2080
Other suitable and less costly materials than tile can be used for finishing bathrooms.

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In a recent bulletin issued by the Missouri College of Agriculture the kitchen sink, bath tub, wash bowl and toilet, provision for heating water, and stationary laundry tubs are given first consideration in the ideal modern rural home.

Because, this bulletin states, such equipment reduces the hours and lessens the strain of work for farm women—protects the health of the family by providing a safe system of waste disposal—keeps the members of the household physically fit by providing better bathing facilities and more convenient arrangement for eliminating the wastes of the body.

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are sources of income second only to grain growing and stock raising. Attractive climate, good neighbors, churches and schools, good markets, railroad facilities, rural telephone, etc.

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Household Department

MOSTLY UP TO YOU

When the world's a-goin' crooked,
Or it looks that way to you—
Somehow seems to be a tangle
To 'most ever'thing you do;
When you start out of a mornin'
With your luck a-runnin' wrong,
The birds along your pathway
Have a harshness in their song
And the grass, though soft and velvet,
You will sort o' stumble through,
Sich times, if you want things better,
Friend, it's mostly up to you.

'Taint hard smilin' with the sunshine,
But it's during stormy spells,
When our weary feet are slippin',
That the stuff what's in us tells.
No—you won't have flowers allus
In the paths you travel through;
Still, if you would have things better,
Friend, it's mostly up to you.
—Farmer's Review.

LUCY BARNHILL'S GARDEN

(Concluded.)

"There's some places flowers won't grow," Mrs. Wiersema admitted, "and of course if they're not put in early enough or if they're planted too deep, why, then—But that brings me up to the thing I wanted to tell you. I wanted you should hear about Lucy Barnhill, who moved into this house in the fall, 21 years ago last November." She followed Rhoda's eye to the clock and added, "That is, if you've got the time to hear."

The girl made a little impatient gesture of assent.

Mrs. Wiersema went on: "Lucy came to this town that fall a plain little runt of a thing that nobody looked at twice; and she and her aunt settled down here in this house just 'fore snowfall, as I recollect. There wasn't anybody to show a smidgin of interest in her when she came. I was some older than she was and more taken up with the man I finally come to marry than I was with new neighbors. Come to find out afterwards, I guess nobody went near the house all winter, and she just slipped out after groceries and shut herself in again, without saying ay, yes nor no to a soul. Lucy Barnhill was quiet, but, land, when we come to know her—

"You see, along about the middle of April I pulled my head out of the clouds (Dave and I were engaged by then), and there I see Lucy Barnhill diggin' round the house with a hired boy to help and setting out bushes and things—bulbs in here and seeds over there,—anybody could see she'd put in a considerable garden. Right away thinks I, I'll drop in and see that girl.' I was fond of a garden, and so was Dave. But one thing and another came up, and I didn't go.

"You know how spring comes some years—such a little bit every day that you don't take notice, and then you just wake up some morning, and there it is! Well, sir, I'd been all took up with thinking of what I was going to be married in,—satin or velvet, I couldn't decide which, — and one mornin' I put up the shade and looked over here, and everything on the place had just jumped right out into leaf. The sweet peas were halfway up the lattice, and the snapdragons had got a start over there in the south corner. There was a great clump of pink spirea she'd put in next the steps, and bridal wreath and snowball on the other side."

Rhoda's eyes expressed an involuntary interest.

"What was in that bed just to the left of the gate as you come in?" she asked. "I've always wondered; there's a ring of stones left as if something had been planted."

"Seems to me it was these big cinnamon pinks," Mrs. Wiersema reflected. "There was a bed somewhere near the street; people used to lean over the front fence to sniff at 'em, going past. Next the fence 'twas lilies of the valley as thick as pins in a pincushion. There was no such another garden anywhere in the block, and, it turned out later, not anywhere in Hennepin. Just as soon as something new would begin to blossom, people would say to each other, 'You ought to go down Elm street and look at Lucy Barnhill's larkspur," and later it'd be 'Lucy Barnhill's fireball.' It got to be a great walk for couples.

"Lucy'd sent away for a crimson rambler to set out by the front porch, and it did real well even that first year. But the second summer if that bush wasn't a sight for angels I never expect to see one. It just took hold and went all over the porch and hung so thick with those little red roses I never looked out the window without catchin' my breath.

"Just as soon as those flowers began to come out, people began to fall over themselves to get acquainted with Lucy. You know how it is; folks on committees find it real handy to say, 'I'll get Lucy Barnhill to furnish roses.' First it was for that, and then it was for her.

"By the next spring Lucy had many a beau. 'Twan't many Sundays a rig wasn't hitched to that tie ring, sometimes as many as three. Seems like they couldn't give in she wasn't going to have them. My cousin, Elam Tenny, was one of them. It was nip and tuck between them all, as far as we could see, for the best part of a year. Then one afternoon there was a knock at our side door, and there stood Elam with a look on his face—goodness me, it took my breath away! He caught hold of my hand, and he says, 'Come on over to Lucy's, Henrietta. It don't seem possible—and I ain't worth it—but she's promised to marry me."

Mrs. Wiersema sat silent a moment, looking round the room. "And they was married right there in that bay window, and I stood up with her in a blue silk dress with rows of gray-silk stitching round the skirt every two inches."

Rhoda Lakin had been leaning forward in her chair to listen, with her dark eyes following Mrs. Wiersema's gestures. It was almost as if plain little Lucy Barnhill's wedding ceremony had just taken place in the quiet room.

Suddenly she drew back with a quick intake of breath.

"What good is all this to me?" she asked bitterly.

Her visitor laughed. "I've been all round Robin Hood's barn coming to my point," she admitted. "But I've got a point, and here it is. Do you want to get to know the young folks here and be in on their parties and picnics, or are you set on clearing out, like Lucy Barnhill admitted to me she come near doing?"

Rhoda made no answer to the question.

"Next week Lucy Tenny's oldest girl is coming to make me a visit, a month anyhow and maybe all summer. She's been here most every year since she was knee-high. Sometimes I think the young folks act plumb daffy about her, the way they carry on when she comes. I suppose it's just the Lucy Barnhill comin' out in Isabel.

"Now, here's what I want you should do. You take that $12 you got for a ticket and put it into seeds—seeds and bulbs and bushes. Isabel will be tickled to help you put them out; she's a master hand with plants. The little boys can spade. And the first day after she gets here I'm going to give a party for you two—a coming-in party for her and a coming-out party for you. I'll expect you to help me with the cakes and decorations, but you mustn't help serve, because you'll be a guest of honor."

Rhoda's laugh was bitter. "Me a guest of honor in Hennepin!"

"And now I've got to go start my supper," Mrs. Wiersema went on serenely. "I'll leave the catalogue here where you can look at it when you get a minute. Where there's extra good offers there's a leaf turned down. I'll look for you over this evening, and we'll pick out which grows best in this ground. We ought to get off an order tonight, so that the things'll get here about the time Isabel does. She's a hustler; she'll want to pitch right in. Then I'll need some help off and on all week to manage for the party."

She went down the walk, saying fervently to herself, "Now, if only Carrie Shoemaker doesn't try to put a finger in!"

From six to seven o'clock was supper time in Hennepin. That was fairly safe. At seven o'clock, with the dishes out of the way, Mrs. Wiersema posted herself at the front window. Presently the door across the way opened, and Rhoda appeared, with her two little brothers close behind. They shot ahead of her as she came slowly across the road. Just as she turned

The Cultivator Patterns

3720. A Smart Wrap—Cut in 4 sizes: Small, 34-36; Medium, 38-40; Large, 42-44; Extra Large, 46-48 inches bust measure. A Medium size will require 4⅜ yards of 54 inch material. Price 10 cents.

3744. Child's Romper—Cut in 4 sizes: 2, 3, 4 and 5 years. A 4 year size will require 2¼ yards of 32 inch material. Price 10 cents.

3704. Girl's Under Garment—Cut in 6 sizes: 4, 6, 8, 10, 12 and 14 years. A 10 year size requires 2½ yards of 36 inch material. Price 10 cents.

3728-3725. Ladies' Costume—Waist 3728 cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Skirt 3725 cut in 7 sizes: 26, 28, 30, 32, 34, 36 and 38 inches waist measure. To make the dress for a 36 inch size will require 5½ yards of 38 inch material. The width of the snirt at the foot is about 2⅛ yards. TWO separate patterns; 10 cents FOR EACH pattern.

3437. Child's Dress—Cut in 4 sizes: 1, 2, 4 and 6 years. A 4 year size will require 2⅝ yards of 36 inch material. Price 10 cents.

3739. A Pretty Negligee—Cut in 4 sizes: Small, 34-36; Medium, 38-40; Large, 42-44; Extra Large, 46-48 inches bust measure. A Medium size will require 5⅝ yards of 36 inch material. For sack length 4⅞ yards will be required. Price 10 cents.

3734. Girl's Dress—Cut in 4 sizes: 8, 10, 12 and 14 years. A 12 year size requires 4 yards of 40 inch material. Price 10 cents.

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PATTERN DEPARTMENT
California Cultivator
Los Angeles

in at the gate, a large woman in an imposing black hat swept round the corner and approached aggressively on the other side of the street. With a chuckle of nervous relief, Mrs. Wiersema welcomed the three Lakins indoors.

Rhoda's face, with the bitterness in abeyance, had a plainly humorous cast.

"Who was that fat girl that I told I was going to leave?" she asked, with her dark eyes twinkling.

"Oh, that," said Mrs. Wiersema, with an answering flash. "That's Elvira Shoemaker. Her folks is leading citizens. You'll meet her and learn all about her at the party."

SOUTHERN RECIPES FOR CHICKEN AND GREEN CORN

By Mrs. I. S. Hill, Alta Loma

I enjoy the good recipes and helps found in the Cultivator. Mrs. G. H. B. asks for some of the old Southern ways of preparing and cooking chicken and green corn and I am glad to be able to send a few of the many I have.

Breaded Spring Chicken

Cut spring chicken into pieces, dip first into beaten egg, then in grated bread crumbs; season with minced parsley, pepper and salt; place in a pan, lay bits of butter over, add a little water, set in the oven and bake slowly; baste often. When done take up, pour a teacup of cream in the pan, stir in two tablespoons of grated bread crumbs and pour over the chicken.

Fried Chicken

Cut up young tender chicken, throw into salt water for half an hour. Wipe dry, roll in flour; drop several pieces in a frying pan nearly full of boiling lard; keep them moving constantly; fry brown, take up and put in more until all is fried, being sure to keep the pan nearly full of boiling lard (it is boiling when a blue smoke rises). When the chicken is removed sift in a tablespoon of flour, let brown slightly, add a little water, then a teacup of milk, stirring well until it thickens; season to taste with salt, pepper and parsley, if liked. Let boil up and serve in a gravy dish.

Dressed Chicken

Take large plump chicken, wipe well with a damp towel, put in kettle and cover with water. Place over a moderate fire and simmer gently until very tender. When done take the meat from the bones and cut in small pieces. Put the bones and scraps back into the kettle and let boil until the liquor is thick; strain and season with salt and pepper. Arrange chicken in a square tin mold, pour liquor over, place light weight on top and put in a cold place over night. When cold and firm turn out of mold, garnish with slices of lemon and parsley. Serve in thin slices.

Fried Chicken a la Creole

Cut chicken in pieces, dip in egg batter to which has been added two chopped tomatoes, one minced onion, with parsley, pepper and salt; fry brown in boiling fat and serve with tomato sauce.

Chicken Pie

Parboil one large fowl; line deep pie pan with pastry rolled thin, made as one would for biscuits, only a little shorter. Put in a layer of chicken, then a layer of pastry cut into strips an inch wide and two inches long. (These are called dumplings.) Next a layer of chicken and so on until all the chicken is in. Now cover with the pastry rolled thin. Cut two or three slits in the middle, pour in two cups of the water in which the chicken was boiled, having stirred in the latter a little butter, pepper and salt to taste. When pie is half done, replenish with more of the water. Add a pint of oysters if liked.

Stewed Corn

Eight ears of corn sliced from the ear in half grains, then scrape ear thoroughly. Put into stewpan and cook slowly, putting in the seasoning one teaspoon butter, salt and pepper to taste, just as it is ready to serve.

Corn Fritters

Stir into two well beaten eggs half a teacup of cracker crumbs, then one of boiled corn; mix thoroughly, make into small cakes and fry in hot fat. Place in colander or on brown paper.

Green Corn Cakes

One pint of corn, three eggs, butter size of a walnut, one tablespoon flour, a little milk and salt, drop with a spoon and fry brown.

HOUSEHOLD QUERIES

Cactus Syrup

(In answer to subscriber, Bonsall)—Take large pan, sharp knife and fork. Cut fruits from bush with fork and knife. Cut in halves on board and with teaspoon take out centers and put in double cooker. Boil till very soft; drain through jelly bag, measure, add equal parts juice and sugar and cook till thick enough, when cooled. Also fine for candies.—A. C. B., Watsonville.

Fried Chicken

(In answer to Mrs. G. H. B.)—Dress chicken and cut into pieces at joints; wash thoroughly, drain, roll in flour. Have half butter, half lard heated and brown slowly, turning often, adding salt, pepper and a little sage. When well browned add a cup of water and steam, adding a little more as needed till tender. Take up, add 1 cup thin cream and thicken gravy.—A. C. B., Watsonville.

Alum for Bedbugs

If the subscriber asking how to get rid of bedbugs will use hot alum water it will do the work. Take a big handful of alum to a 10 quart pail of hot water. Stir until dissolved and then go over beds and cracks in the floor, about the edges of all windows and doors with a broom dipped frequently in the hot alum water. A second application in three or four days is all I've ever had to use, but if necessary I'd repeat until no more were seen. I've used this in very severe cases and never knew it to fail. It also has the advantage of simplicity and there is no danger. Of course in old buildings with broken walls greater care has to be taken as the bugs are often hidden where they can not be reached. However an old hotel man gave this remedy and said that whenever a bug touched the line of alum it died.—Subscriber, Fresno.

Vinegar Bees

In the August 27 Cultivator I see Subscriber, Riverside, asked about vinegar bees. I do not know what the bees are made of, but in the east I made a great deal of vinegar from them and had just as good vinegar as any one would want and much too strong for lots of uses; it keeps well too. Some say it is not good for pickles but I had no trouble with it, and would like to get some more bees. To a small handful of the bees I used one quart of lukewarm water, a tablespoon of sugar and a tablespoon of molasses. I let it stand in the sunshine or a warm place for eight days, giving it a teaspoon of sugar every other day, then poured the liquid into a jug or jar, and started another quart with the bees. If they are not kept fed they will not work, and it is interesting to see them work. I like the Household Department very much and have tried several of the recipes and had good luck with them. We have had the Cultivator but a short time.—Subscriber, Las Plumas.

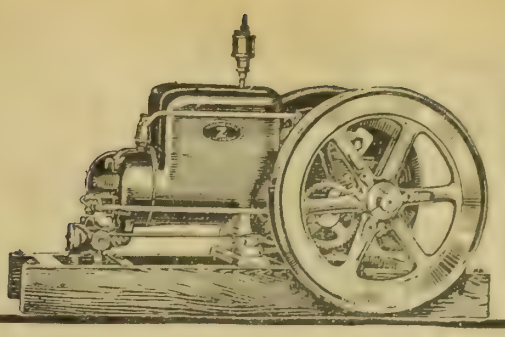
Crabapple Recipes

Here are some recipes for crabapples asked for in the Cultivator of August 20.

Crabapple Preserves — Select perfect, well colored crabapples, wash thoroughly and remove blossom ends, leaving stems and skins. Place apples in heavy boiling syrup and stew gently until well done. Lift out of the syrup and put into jars. Unless the syrup is very thick boil longer until it becomes like jelly. Then fill jars and seal at once.

Canned Crabapples—Take 3 quarts apples, 3 cups sugar, 1 quart water. Boil sugar and water until it makes a thin syrup. Add fruit and cook gently until tender. It will take from 20 to 50 minutes according to kind of apple.

Pickled Crabapples—Put 2 quarts vinegar and 3 quarts light brown sugar into kettle with a spice bag containing tablespoon whole cloves and quarter ounce of cinnamon. Wash and cut



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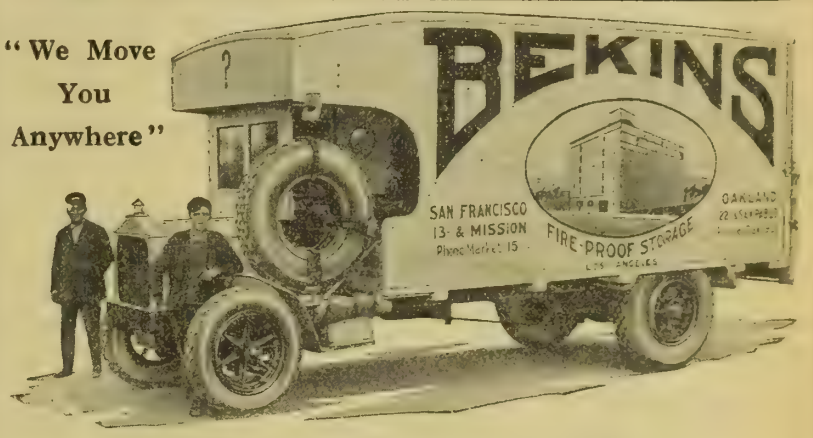

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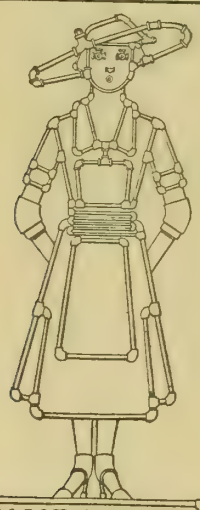

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You think you are taking a vacation, but generally it's the vacation that's "taking" you.

into halves or else leave whole a peck of ripe crabapples and cook in syrup. When done remove into jars and pour boiling syrup over them and seal jars at once.—Mrs. Peter Freyman, Del Rey.

Canning Pears

Seeing an inquiry about canning pears in your columns I am sending a hint I received from a Canadian friend. Estimate your quarts of pears and add one tablespoon vinegar for each quart to your syrup. These should stand a few weeks to be at their best. That is not enough vinegar to taste but it brings out the flavor of the pears and is a wonderful improvement in the taste besides making them keep better.—Allie Weems, Glenn.

Jerky Recipes

Can you tell me any ways of using jerky?—Subscriber, Glenn.

Can our readers answer this question?

HINTS FROM HOUSEKEEPERS

Candied Figs

These are different from any candied figs we ever saw or tasted—and the best ever. Samples brought in to the Cultivator office aroused much enthusiasm and invariably brought from the lucky tasters request for the recipe. The figs are very tender, clear amber in color and jelly like in consistency, the seeds are not hard and barely noticeable, one gets a real taste of the fresh fiig. Here are the directions—and they are very simple:

Slit skins, soak figs in salt water 6 hours, drain thoroughly, rinse if very salty. Make syrup in proportion of 1 cup sugar to 1 cup water to 1 pound fruit. Cook figs in this syrup 1 hour, handling gently and boiling gently so as not to break the skins. Don't stir. Let stand over night and cook another hour. Take figs out of syrup, spread on platters or waxed paper and let drain off and dry for two days. The usual directions call for drying in the sun for a longer time, but these soft figs are vastly more attractive to most palates. Also it was found that it was better not to dry in the sun as this made them too hard. Roll in granulated sugar.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Tenant Left

I leased a farm to a party for a number of years. He was to pay running expenses, develop a portion of the farm, and give me one-half of the income. After he had been there for some time, during which he had neglected to plant ten acres of corn as agreed or pay power bills and neglected the trees and vines on the place, he left, promising to return in three days. Several weeks have elapsed and no one knows where he is. He left household goods and clothing. What can I do if he does not return? Can the household goods be held for damages? They have very little money value.—Subscriber, Tulare.

Presuming that the lease is in the usual forms, the landlord reserves the right of re-entry when the terms and conditions of the lease are broken. The re-entry in this case can be peaceably effected, so there is apparently no reason for taking legal proceedings unless the lease is recorded and you desire to clear the record of the encumbrance. In such case, where waste is imminent, it would undoubtedly be your duty to re-enter and take proper care of the property. You would not be required to return possession of your property to the tenant, other than through operation of law in an action brought by him, and it would seem that you would have very good grounds for successfully defending such action. As to the property left by him, it must be understood that household goods and clothing are usually exempt from execution in the event of any action brought to sell them. This exemption is awarded upon affidavit filed by the judgment debtor. Apparently, in this case, you do not desire to take action. You certainly could not sequester these goods simply through personal claim without order of court. Another means is presented, however. By reason of the unlawful leaving of the premises and the necessity of the re-entry of the landlord, it would probably be held true that the goods would be considered deposited with the landlord, in which case, you would have a claim for reasonable compensation for their storage for a reasonable length of time. You may determine this deposit by reasonable notice to the depositary. Such notice may be made by registered mail, addressed to the tenant at the postoffice address of the ranch or by publication in the paper. In order to carry out the lien for such deposit, you are entitled to sell the property within a reasonable time after the giving of the notice terminating the deposit. In order to effect such sale you should give at least ten days' previous notice, by advertisement in the newspaper published in the county, of the time and place of the sale and the amount, which should be reasonable charge for storage of the goods. The property may then be sold by you at public auction and the proceeds discharge the lien of the cost of keeping and selling the property and the remainder, if any, deposited in a bank to the credit of the tenant.

Torrens Title

A, B, C, and D own land in Illinois registered under the Torrens system. B, C and D wish to convey their undivided interest to E. What is the proper form of deed?—Subscriber, Santa Ana.

In many instances the Torrens act provides the form of conveyance and the manner in which the conveyance shall be made. However, it is certain that any such conveyance should read to the effect that B, C and D convey to E their undivided three-fourths interest in the described property. Any other form of conveyance would probably lead to difficulty.

Personal Property Tax

Are notes, judgments, or other personal property due a resident of California from parties in Pennsylvania taxable there or here?—Subscriber, Terra Bella.

Personal property always follows the domicile of the owner and is taxable in California, not in Pennsylvania.

Walnuts Overhang Line

An adjacent owner claims the right to harvest walnuts on my trees which overhang his line from seven to ten feet. The trees are planted some seventeen feet from the line. I have received an opinion that this claim is not correct.—Subscriber, Fullerton.

This has long been a vexed question. Decisions may be found directly contrary to one another in various states, some holding that the owner of the tree is not only entitled to all fruit overhanging the land of the adjoining owner, but that he may hold such adjoining owner for larceny if he picks up fruit on his own land. Others hold that inasmuch as the ancient rule of the common law is that a land owner possesses absolute property in his land, not only on the surface, but to the center of the earth and to the furthest points of atmosphere above his land, that he thereby owns fruit or branches which are permitted to overhang and is entitled to harvest such fruit or branches. The case has never been squarely decided in this state. The only decision bearing upon the case may indeed be distinguished by reason of the fact that it may be held that what the court said was not necessary to the decision. In the absence of any definite decision in this state, however, the writer has based his opinion upon the wording of the decision in the supreme court in the case of Grandona vs. Lovedal: "The trees and the overhanging branches insofar as they were on or over his land belong to the plaintiff and he could cut them or trim them at his pleasure. This being so, we do not see how the fact that the trees had grown so that a small part of them was on plaintiff's land could give him any cause of action. It is further specified that the decision was contrary to the evidence, for the reason that defendant maintained the trees for the purpose of supplying himself with fuel and hop poles and thereby using plaintiff's land for his own profit and advantage. The fuel and hop poles growing over plaintiff's land were his, and could have been claimed by him as against the defendant." In the absence of any direct decision, it thus seems that it is necessary to hold that overhanging branches and the fruit thereof are the property of the party who owns the land underneath and not of the owner of the tree from which they grow.

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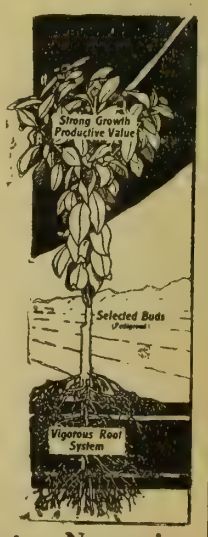

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San Fernando Fair

The San Fernando Valley towns will open their second annual fair next Monday morning, September 19, at San Fernando. This year's fair has absorbed the Los Angeles livestock show and the Los Angeles poultry show and, in addition will stage a horse show. The latter is styled "The Society $1,000-A-Night Horse Show." This name applies, for the reason that $1,000 will be divided in prizes each of the six nights of the fair. Over 200 horses have been entered and the management has constructed a great arena especially for this event and for the accommodation of the livestock show. Col. McClure of the government remount station will be present with a carload of army horses. Los Angeles, Hollywood, Pasadena, Beverly Hills, Santa Barbara, San Francisco and Oakland will all be represented, and entries have come in from as far north as Grant's Pass, Oregon. The latest entries to arrive are from E. F. Hanlon, Kentucky Riding Academy, Pasadena; Jack Holt, with "Lady Barbara;" F. W. Matthiessen, Triumfo, Chemawa Park polo stables, Riverside; and Thos. Magnon of Riverside.

The livestock show will bring out some 900 animals. A partial list of the entrants includes such well known breeders as A. B. Buell, Carpinteria, with Hampshires; F. F. Peabody, Santa Barbara with Aberdeen Angus; D. M. Longyear, Bishop, with his famous coach horse "Raven;" Ferdinand R. Bain, Jerseys; Paul Bros, Perris, Percherons and Berkshires; D. A. Russell, Durocs; Wessels & Mahoney, Windmere Farm, Chino, Guernseys; Rival J. Hawkins, Pasadena, Duroc Jerseys; Herbert J. McDade, jr., Pasadena, Holsteins; A. B. Austin, Van Nuys, Durocs; Josh L. Wilson, Lamanda Park, Hampshires; A. L. Ludwig, La Mirada, Duroc-Jerseys; Eastman Rancho, San Fernando, Poland Chinas; Chester T. Johns, Ontario, Berkshires; Adohr Stock Farms, Van Nuys, Guernseys; Robert. N. Clapp, Nuevo, Holsteins; Carl Ray's Ranch, Lankershim, Holsteins and Jerseys; Fred Hartsook Rancho, Lankershim, Holsteins and Toggenbergs; Santa Monica Dairy Company, Holsteins; Maxwell Farms, Holsteins; Billy Mong's "Your Duroc Farm," Whittier, Durocs.

E. J. Sturgis, superintendent of Hartsook's Ranch, is in charge of the division of goats for the fair and he says that he is litterally swamped with goats.

Another feature which has passed all expectations is the poultry show. As this is the only A. P. A. show thus far announced for the state for 1921, it is attracting wide interest and also from the fact that the cash awards total $3,000. E. I. Hammond of Riverside is in charge of the poultry.

A complete power farming exhibit with a working tractor demonstration will interest thousands of visitors. Four new models of tractors that have never before been seen on a demonstration field will be the Model F. Cletrac, the Tioga, the Wizard and the Gladiator. All of these will demonstrate their abilities at San Fernando next week.

A Competitor for the Ribbons

Inspiration of Edgemoor Farm, junior bull of Adohr Stock Farm, 29 months old, weighs 1,900 lbs. and will be shown this year at Los Angeles County Fair at San Fernando, September 19 to 24. He is a son of Imported Donnington Goldie 5th, champion A. R. cow at National Dairy Show at Chicago, 1920, and a grandson of Imported Itchen May King.

Agricultural, horticultural and industrial exhibits will have their places, and the women of the valley towns have thoroughly organized all the culinary, needlework and art exhibits and will in addition hold a modern scientific baby show.

A fair of this size would never be complete without dozens of amusement features for the fun loving, and the fair management has prepared a splendid midway where these events will be held. Two bands will be present day and night and a special dance floor has been constructed for the American Legion nightly dances.

THE SOUTHERN CALIFORNIA FAIR

The Southern California fair at Riverside, October 11-16, will show exhibits from Los Angeles, Fresno, Kings, Orange, Imperial and San Bernardino Counties. Riverside does not enter into competition for the county feature prize. The exhibits of the U S. department of agriculture and the state agricultural department will be two of the big features. Lectures and demonstrations will be of the greatest interest to the public. The indications now are that no less than 50 pig clubs will have displays. There will be a horse show, goat show, poultry show, dog show, in fact about every kind of show imaginable. And to complete the show, the five days of racing will bring out some of the best horses appearing at any fair in the state.

MAKING READY FOR VENTURA FAIR

Activity is in the air at Seaside Park, Ventura. Everything is in full swing preparatory to the Ventura fair October 5-9. Never before has there been such enthusiasm for a fair in Ventura as is shown this year. The agricultural and livestock departments will contain more exhibits than ever before. Hundreds of the finest Holsteins, Jerseys, Ayrshires, Guernseys, Herefords, Arabians, Clydes, Percherons and Belgians will be on exhibition. Berylwood Stock Farm's record milk producing Holstein will be on display. The California Rhode Island Red show, the National Swiss Mondaine pigeon show, a horse show, a wild west shown daily and some other features.

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55	.01 (clean)	34
Different Speeds	Always skims clean	Cream doesn't change

When you raise the speed from 35 revolutions per minute to 55 you double the capacity of the separator—it skims twice as fast. Raising the speed in the test made the separator run the milk through faster but did not change the thickness of the cream. You do not have to run the SHARPLES at any set speed to get a clean skim.

YOUR DAIRY WILL MAKE MORE MONEY FOR YOU IF YOU OPERATE A SHARPLES. WE WILL SHOW THE COMPLETE LINE AT THE SAN FERNANDO FAIR SEPT. 19 to 24 AND WILL BE PREPARED TO TAKE ORDERS FOR THEM AND ALL OUR STANDARD LINES ON EASY PAYMENTS.

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MASTERPIECE
OF EDGEMOOR

The Greatest of All Guernsey Bulls

Sired by **Royal Rose King of Edgemoor** who was by **Imp. Itchen May King, grand** champion of the P. P. I. E. in 1915 and grand champion of the 1920 National Dairy show. **Imp. Itchen May King** also sired **Dauntless of Edgemoor,** grand champion of the 1919 National Dairy show and **Vedas May King** who won championship honors atPortland last year.

Royal Rose King of Edgemoor was out of **Belladia,** the highest record Guernsey in California, who made 934 lbs. of butter fat in 365 days in a certified milking barn.

Masterpiece of Edgemoor

is out of **Jesebel of Edgemoor** the highest record daughter of the great **Ne Plus Ultra.** She is the State Champion in her class and stands 4th in her class for the U. S. with12,434.9 lbs. of milk and 748.3 lbs. of butter fat at 2½ years of age.

Edgemoor Farms will sell 40 young Guernsey Cows and Heifers, mostly bred to Masterpiece of Edgemoor—and 10 young Bulls at

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Rhoades and Rhoades Sale Pavilion
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Sale in Charge of California Breeders Sales and Pedigree Co.
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A HOLSTEIN BULL

from the Maxwell Farms must carry a big percentage of the highly popular Ormsby blood. The blood of Sir Pietertje Ormsby Mercedes, Sir Ormsby Hengerveld De Kol, Pietertje Maid Ormsby and Sir Ormsby Skylark has produced many of the greatest animals of the breed.

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Exceptional Yearly Record Backing

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ITALIAN VINEYARD CO.
Alex. M. Wilson, Supt. **Guasti, Cal.**

LIVESTOCK THE BIG FEATURE AT SACRAMENTO

(Continued from Page 281.)

The dairy cattle show in all departments, save the Holstein, was declared the best yet seen at Sacramento. The Guernsey show was especially strong. The Ayrshire exhibit was probably the best yet seen in this state, and the Jersey show was in every way up to standard. The Holstein classes suffered considerably because a number of the old timers did not bring out herds, but that situation was somewhat compensated for by the appearance of a goodly number of new men who came forward with a class of cattle entirely creditable to the breed.

The swine show was a real surprise to all. Not so many hogs of the leading breed were in the pens as last year but, taken as a whole, the show was better balanced and decidedly more quality was noted throughout. Nearly every exhibitor reported better sales than for several years past, due, no doubt, to the wide margin between barley and hogs. Eastern judges and representatives of the breed associations expressed genuine approval of the stamp of hogs now being produced in California.

The sheep show was considered up to the usual standard, which is always good, but in no way representative of the importance of the industry in this state.

The draft horse show lacked the quality and numbers of former years owing to the fact that several of the leading stables, notably the Blackhawk Ranch, were not entered. There are a lot of good draft horses being produced in California, but not many were on hand at the state fair. Exhibitors stated that the demand for horses, while still light, is showing much greater strength than for many years.

A new record was established when the milk goat breeders staged the best show ever seen at the state fair. The quality was declared to be equal to the best in the West and the numbers sufficient to require two new barns.

For the most part the awards were placed by men of known ability and the exhibitors generally were satisfied with the ratings or were such good sports as to take their defeats gamely.

BEEF CATTLE

The Shorthorns

Never in California was such a splendid showing of Shorthorns made. It was easily the top showing of the West, and class after class came forward to establish new records and to truly astonish those who had failed to keep in touch with the activities of the breed. Every available stall was occupied, sometimes exhibitors doubled up, and finally a new barn had to be erected to care for the overflow. The show not only established records as to numbers but the quality was such as to be a distinct credit to the breed. Capt. T. E. Robson of Canada made the awards:

Five aged bulls led off the day's showing, and five good bulls they were, most any of which might have been a winner a few years back. The massive dark roan imported bull, Corston Masher, appeared an easy top, his bulk and thickness and good front carrying him above last year's champion, Imp. Scottish Lord shown by Glide. The latter bull has done well since last year. He is thicker, deeper and very smooth. The third bull was of good type, well balanced fore and aft but lacked the scale of the two above him. Pacheco was fourth and Miller fifth.

Only three two year olds were out. The judge preferred the more stylish and upstanding bull of Glide's to the deeper, thicker rich red shown by Miller. The second bull carries a lot of mellow flesh and handles about as well as any red bull ever did. He was a trifle flat in his rib and hardly so strong on top. Count's Baron is a bull of considerable style but hardly so smooth and level as the first two.

The five senior yearling yielded to the attractive white shown by Pacheco whose style, quality, levelness and balanced fore and rear carried him through to final honors. He was junior champion at last year's show. Just below him was a roan from the Caledonia herd that lacked but a bit of smoothness at his tail to make trouble. His general type is not to be criticised. Fronted with a beautiful head, capital in his crops and excellent in his flank and quarters he was an easy second over the red and white shown by Glide. Elberg was represented with a light and mellow roan with a lot of scale and the sort of bone that western men like but he was off a bit at the tail. The fifth bull lacked somewhat in condition and was light behind.

The junior yearlings were topped by a flashy roan son of Caledonia that boasted a real head, carried with style, excellent quarters and a splendid flank. He was not so strong in the heart as the blocky and sappy calf from the Straloch herd that stood second and whose depth, thickness and quality made him friends. Third place fell to a calf with more scale than the others but a little plain at the tail head. Dibblee took the next two places with white calves, the last place going to a calf that lacked a little in size but that was better balanced than the fourth.

The eight senior calves made a strong show. Two Caledonia youngsters were to the fore, the top calf being one of the most attractive seen in a California show ring. He is a youngster of rare type and quality, quite level in his lines and fleshed very smoothly. He was particularly good at his tail and down into his quarters but was hardly as large as his stable mate nor was he as good in his heart. The third calf took his place by virtue of his depth and thickness over the smooth fellow from the Glide herd. Dibblee was fifth with a nicely balanced calf that lacked size to get higher.

The juniors were headed by a highly attractive youngster from the Straloch herd that was a bull from his burly head to his deep and thick quarters. Caledonia was second with a younger calf of great smoothness and quality but lacking as attractive front as the winner. The next three calves took their rating rather naturally.

The aged cows showing with a calf at foot furnished no competition to the famous Little Sweetheart from the Glide herd. For the third time this remarkable cow downed all competition and calmly awaited the awarding of the purple. Little Sweetheart is a remarkable cow. After four years of campaigning all over the coast and as far east as Chicago she appears about as attractive as ever. She may be a little plainer at the shoulder but she looks a bit neater at the tail and still retains her wonderful thickness, quality and rare character. The second place went to a very thick fleshed matron from Pacheco who easily stood above a thin cow from the Nevada herd.

But three aged dry cows yielded an easy top in the splendid roan from the Caledonia herd. This cow was quite outstanding with her great width and depth; her levelness and thickness; her quality and smoothness. She is a great cow that needs but a more attractive horn to carry her a long way. Glide was second and the Nevada herd third.

The two year olds fell in behind the good white from Pacheco and the same herd furnished the second. Glide was third with a two year old with quality that appeared a bit upstanding. Murphy was fourth.

The ten senior yearlings was not an especially strong class after the tops were taken out. Elberg won with a good handling daughter of Crescent Dale over a white from Pacheco that was perhaps a better type but not so good at the shoulder. Caledonia was in third with a very compact little red with a beautiful front and nice balance but entirely too small and that would have looked better either at the top or at the bottom. Straloch held the next two places in an easy manner with a roan and a red that bid fair to give a better account of themselves in the future.

The junior yearlings, 14 of them, had the honor of constituting the largest class of Shorthorns ever shown in California. A dark roan from the Nevada herd found early favor with the judge who liked her general lines and good front. Pacheco was second with a roan that handled well but was a trifle light at the shoulder. Caledonia was third and fourth with a roan and white, the latter of which had a good many friends for top rat-

ing. Dibblee was fifth with a roan that was quite smooth but with none too strong a top.

The honor that went with the junior yearlings was but short held for 18 seniors stepped into the ring—the largest class ever in a California ring. Carruthers had an acceptable top in his white of splendid type. This little lady needs only a mellower hide to make her bad medicine among the younger things. Caledonia was second with a red of great quality and smoothness and third with a white of ample scale and nice lines. Straloch was fourth with a roan and a Nevada heifer stood next and above a white from the Miller herd.

The nine juniors made a strong lot and developed one of the sensations of the show in the winner, a little white lady from the Caledonia herd that was generally acclaimed to be the best young thing ever seen in a western show ring and in every way good enough to hold her own in any show in the country. She was later made junior champion with the approval of all. Glide was in second with a nice calf while Pacheco was third and Carruthers fourth.

Generally speaking the judging up to the group classes was satisfactory to exhibitors and spectators but in the younger groups—especially in the get of sire class there was scarcely a man about the ring that agreed with the judge when he left the two Caledonia entries third and fourth. These entries had been expected by all to win.

When the groups were being shown there was hardly room for the judge after the cattle were in the ring.

The awards follow:

Exhibitors: Caledonia Farms, West Sacramento; W. M. Carruthers, Live Oak; Thos. B. Dibblee, Lompoc; Edinger-Johnston Co., Hood; Henry M. Elberg, Woodland; T. S. Glide, Davis; Thomas T. Miller, Hollister; H. L. and E. H. Murphy, Perkins; Pacheco Cattle Co., Hollister; Straloch Farm, Woodland; Howard Vaughn, Dixon; Warm Creek Land and Livestock Co., Wells, Nevada.

Aged bull—1, Warm Creek on Corston Masher (Imp). 2, Glide on Scottish Lord. 3, Vaughn on Right Sort Jr. 4, Pacheco on Dalmeny Count.

Two year old — 1, Glide on Cheerful Count. 2, Miller on Milmar Matchless. 3, Carruthers on **Count's Baron.**

Senior yearling—1, Pacheco on Pacheco Lad 215th. 2, Caledonia on Pine Grove King 21st. 3, Glide on King's Count. 4, Elberg on Roan Champion.

Junior yearling—1, Caledonia on Caledonia King 2nd. 2, Straloch on Straloch Adjutant. 3, Elberg on Missie's Parkdale. 4, Dibblee on Star of Cluny. 5, Dibblee on Knight Avon. 6, Warm Creek on Victoria's Gallant.

Senior calf—1, Caledonia on The Caledonia. 2, Caledonia on Caledonia Marshall. 3, Elberg on Rosie's Champion. 4, Glide on Hillcrest Lord. 5, Dibblee on Royal Crescent. 6, Miller on Stamp of Milmar.

Junior calf—1, Straloch on Helsman. 2, Caledonia on Matchless King. 3, Edinger-Johnston Co. 4, Warm Creek on Missie's Masher. 5, Warm Creek on Missie's Masher 2nd.

Aged cow and calf—1, Glide on Little Sweetheart and calf. 2, Pacheco on Pacheco Lass 118th. 3, Warm Creek on Hope (Imp.) and calf.

Aged cow—1, Caledonia on Glen Bessie 3rd. 2, Glide on Village Lassie. 3, Warm Creek on Sweet Rose.

Two year old—1, Pacheco on White Pacheco. 2, Pacheco on Pacheco Doris. 3, Glide on Village Rose. 4, Murphy on California Orange.

Senior yearling—1, Elberg on Crescent Lady. 2, Pacheco on Sultans Dale. 3, Caledonia on King's Honour. 4, Straloch on Oakdale Beauty.

Senior yearling—1, Warm Creek on Nevada Hope. 2, Pacheco on Pacheco Doris 2nd. 3. Caledonia on Glenbrook's Memory 43rd. 4, Caledonia on Sultan's Bessie. 5, Dibblee on Princess Royal. 6, Straloch on Silver Rosebud.

Senior calf—1, Carruthers on Lady Rubert 2nd. 2, Caledonia on Caledonia Queen. 3, Caledonia on Caledonia Bud. 4, Straloch on Straloch Maria. 5, Warm Creek on Sweet Golden Rose. 6, Miller on White Milmar.

Junior calf—1, Caledonia on Caledonia Mischief 2nd. 2, Glide on Village Rose 2nd. 3, Pacheco on Matchy's Lass. 4, Carruthers on Roan Lady 2nd. 5, Glide on Village Lassie 2nd. 6, Carruthers on Roan Lady 2nd.

Senior champion bull — Imp. Corston Masher. Junior champion—Pacheco Lad 215th. Grand champion — Pacheco Lad 215th. Senior champion female—Little Sweetheart. Junior champion—Caledonia Mischief 2nd. Grand champion — Little Sweetheart.

Aged herd—1, Glide. 2, Pacheco.

Breeders' young herd—1, Pacheco. 2, Caledonia. 3, Glide. 4, Dibblee.

Calf herd—1, Caledonia. 2, Caledonia. 3, Glide. 4, Dibblee.

Get of sire—1, Glide. 2, Pacheco. 3, Caledonia. 4, Caledonia.

Produce of dam—1, Caledonia. 2, Pacheco. 3, Dibblee. 4, Pacheco.

The Herefords

While taking second place to the Shorthorns in point of numbers the Herefords boasted as much quality all down the line as their contemporaries in improving the quality of California beef. The showing this year was but a reflection of the fine progress being made by the breeders of the Whitefaces.

E. A. Noyes & Son, making their first show, had an easy win in the aged bull class with Pacific Corker, a bull of fine type, carrying an excellent and smooth covering of deep mellow flesh. This fellow with his attractive head and horn and great heart only needed to carry his width better back to his tail-head and down into his quarters to have walked through to top honors. At that, he had many admirers. Jacks went into second place with a son of Woodford over a good kind of poll shown by Emmons.

Five two year olds were headed by The Peer, from the Bunting herd. This bull is of the right sort throughout—an excellent front, well covered shoulders, strong crops and girth, even width from front to rear and carried down into his quarters to make a nice balance, needed considerable more condition to carry him past the senior championship that he won. Briggs had an easy second with Lincoln Domino over Yolo Fairfax shown by H. H. Gable for W. D. Duke. The Bar N herd came fourth with a very growthy fellow that lacked condition to make him show to advantage. Barngrover had the fifth place.

Gable furnished the top in the senior yearlings with Louis Fairfax. Baldwin was second with a bull that showed rather sore but was right in his place above the Jacks entry.

The junior and grand champion of the show was found among the junior yearlings in the Cazier entry, Blanchard 1st. This youngster, fitted to perfection, is fronted with a head full of character and style. He is nicely covered throughout and is especially attractive in his rear set-up—few bulls being smoother at the tail or better in the quarters. He could show a bit more girth at the heart. Baldwin was in second with a calf just 20 days too old to show as a senior, but despite this handicap his type and quality and remarkable character about his superb head was enough to land him second. Howard, also making his first show, was third with a fair stamp. Cazier and Noyes filled the other places.

The five senior calves were not especially strong. Cazier had the two outstanding calves and John A. Bunting, Jr., the youngest Hereford exhibitor in the West, was third with a calf of more scale but lacking somewhat in condition. Jacks was fourth with a little fellow over a very plain and poorly fitted calf.

The seven juniors were led by a nicely balanced calf from the Bunting herd that was not so thick as the Briggs calf but was stronger in the heart and crops. Cazier was third and Briggs fourth. Emmons was fifth with a poll.

The four aged cows acknowledged last year's champion, Bocaldo Beauty, the outstanding winner and she went through with little opposition to the same rating this year. This cow is a superior type from any angle and like her Shorthorn contemporary could hold her own in any show. She has grown since last year and though she may not handle quite so well, she is outstanding in any company. Noyes was second with a massive, thick-loined cow that needs width in her quarters. Gable was third and fourth with two good sorts that were simply in too fast company.

The top pair of two year olds furnished real competition. Howard won with a desirable kind in every way whose sweet character and even lines found favor with the judge over Jacks' Ruth Domino that was a bit thicker and handled better and was smoother at the tail. They were two good ones. Jacks was also third and fifth and Briggs took fourth.

Cazier topped the senior yearlings in easy fashion with a heifer of splendid type and quality. Briggs was second with a good kind whose somewhat nicer front put her above the Baldwin entry of much the same type. Bunting was fourth over a rather upstanding but stylish heifer shown by Howard.

The eight junior yearlings made a strong class. The Nevada herd was out in front with two very attractive little ladies, either of which could have worn the blue. The judge, however, leaned to the one with more size. Briggs was third with a highly desirable kind. Beautifully fronted, quite level and well balanced throughout and very thick but handling a bit overdone. Had she handled better the story might have been different. Howard also had a good one that handled hard. Noyes was fifth with a nice fronted heifer that was hardly so smooth as the others.

The 12 senior heifers made up the largest class of the show. Cazier and Briggs went 50-50 on the top four places, the former taking first and second with daughters of Beau Blanchard 76th. The third calf was nice but small. Baldwin was fifth with a fair sort.

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Runs so easily, bowl spins *25 minutes* after you stop cranking unless you apply brake. No other separator needs a brake. Bowl chamber is *porcelain lined.*

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At the State Fair

I Showed

10 Duroc Hogs 10

They Were Awarded

22 Ribbons 22

Grand Champion Sow

Senior Champion Sow, Reserve Senior Champion Sow, Reserve Junior Champion Sow, Junior Champion Boar, 1st Senior Yearling Sow. 1st and 4th Junior Yearling Sows, 1st, 2nd and 3rd Junior Boar Pigs, 1st and 3rd Junior Sow Pigs, 1st and 2nd Junior Futurity Boars, 1st and 3rd Junior Futurity Sows, 1st Futurity Litter, 2nd Aged Boar.

The following three awards were forfeited because of my error in entering them: 1st Get of Sire, 1st Produce Dam,

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Fannie's Orion King assisted by Uneeda Orion B, 2nd prize aged boar at State Fair, 1920, and grand champion at Glenn County Fair, 1919, and Valley View's Sensation, 3rd prize junior bear pig and litter mate to 1st prize and reserve champion at State Fair, 1920, and a wonderful string of prize winning sows and gilts, including Miss Sensation, 1st sow pig and reserve champion at State Fair

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Mr. W. H. Dupee, Owner of Edgemoor Farm Santee, Cal., Will Offer

51 Registered Guernseys 51

41 Females—10 Bulls

AT PUBLIC AUCTION

Rhoades & Rhoades Sale Pavilion, Hynes, Cal.

Thursday, October 20, at 10 A.M.

In making this public sale offering Mr. Dupee is making an effort to help meet the very large demand for registered Guernseys in California, a demand that has been unsatisfied for several years because of the great scarcity of such animals available for purchase.

The 41 females in this sale are all heifers with their whole useful lives before them, and a very large percentage of them sell bred either to

MASTERPIECE OF EDGEMOOR, one of the very greatest young sires of the breed, he being sired by a son of Belladia, California's highest record Guernsey cow, and out of the highest record daughter of the great Ne Plus Ultra

or to

DEANIE'S MAROSE OF APPLETREE POINT, the undefeated young show bull that was first in the 1920 National Dairy Show and other major shows last year.

The 10 bulls are bred in most approved lines and include individuals of most attractive type, offering a selection for both breeders and dairymen.

Every animal positively guaranteed to be a breeder; every animal Tuberculin Tested and sold subject to 60 day retest.

TERMS OF SALE: Cash unless arrangements for credit are made prior to sale with the sale managers, California Breeders Sales and Pedigree Co., who will make terms of one-third cash, balance in three, six, and nine months to responsible parties on approved notes.

Auctioneers: RHOADES & RHOADES Los Angeles

Management California Breeders Sales and Pedigree Co. C. L. Hughes, Sales Manager, Sacramento, Cal.

The junior heifers did not stage a strong showing.

Frank W. Van Natta made all the ratings in his usual efficient and expert manner.

The awards follow:

Exhibitors: H. A. Baldwin, Pleasanton; H. M. Barngrover, Taylorsville; William Briggs and Son, Dixon; John Bunting Jr., Mission San Jose; John H. Cazier and Sons Company, Wells, Nevada; W. D. Duke, Gazelle; G. W. Emmons, Danville; H. H. Gable, Esparto; C. S. Howard, Willets; L. C. Marshall, Vacaville; Mission Hereford Farm, Mission San Jose; E. A. Noyes & Son, Sutter.

Aged bull—1, Noyes on Pacific Corker. 2, Jacks on Woodford 34th. 3, Emmons on Junior Grove.

Two year olds—1, Mission on The Peer. 2, Briggs on Lincoln Domino. 3, Duke on Yolo Fairfax. 4, Noyes on Bar N King. 5, Barngrover on Beau Blanchard 94th.

Senior yearling—1, Gable on Louis Fairfax. 2, Baldwin on The Anxiety 3rd. 3, Jacks on Crimean 1st.

Junior yearling—1, Cazier on Blanchard 1st. 2, Baldwin on Don Domino. 3, Howard on Colorado Fairfax. 4, Cazier on Sir Blanchard 2nd. 5, Noyes on Milo Corker.

Senior calf—1, Cazier on Blanchard 4th. 2, Cazier on Blanchard 6th. 3, Bunting on Mission Wing. 4, Jacks on Glenwood. 5, Marshall on Prince.

Junior calf—1, Mission on Mission Van. 2, Briggs on Red Rupert. 3, Cazier on Blanchard 10th. 4, Briggs on Dominant. 5, Emmons on Marvel Pride 15th.

Aged cow—1, Jacks on Bocaldo Beauty. 2, Noyes on Beauty 2nd. 3, Gable on Normalene. 4, Gable on Anxiety Fairfax.

Two year old—1, Howard on Belle Donald 21st. 2, Jacks on Ruth Domino. 3, Jacks on Miss Rupert 8th. 4, Briggs on Miss Era 14th. 5, Jacks on Belle Grove.

Senior yearling—1, Cazier on Granation 4th. 2, Briggs on Miss Donald 33rd. 3, Baldwin on Pansy Domino. 4, Mission on Miss C. 32nd. 5, Howard on Miss Mansell 159th.

Senior calf—1, Cazier on Aloha 2nd. 2, Cazier on Miss Defiance 7th. Briggs on Miss Dare 20th. 4, Briggs on Lucille Domino. 5, Baldwin on Oneida 4th.

Junior calf—1, Cazier on Bonnie 3rd. 2, Noyes on I. B. Mischief. 3, Cazier on Nevada 6th. 4, Mission on Mission Fleda. 5, Briggs on Domino Princess.

Senior champion bull—The Peer. Junior champion—Blanchard 1st. Senior champion cow—Bocaldo Beauty. Junior champion—Standard Eyes 4th. Grand champion bull—Blanchard 1st. Grand champion cow or heifer—Bocaldo Beauty.

Aged herd—1, Jacks. 2, Noyes.

Breeders' young herd—1, Cazier.

Calf herd—1, Cazier. 2, Cazier. 3, Mission. 4, Jacks.

Get of sire—1, Cazier. 2, Mission. 3, Noyes. 4, Jacks.

Produce of dam—1, Cazier. 2, Noyes. 3, Mission. 4, Gable. 5, Jacks.

Angus

James Marwick of Santa Barbara won practically everything in the Angus classes with individuals from his high class herd—mostly imported cattle.

But few steers were entered in the single classes. W. M. Carruthers won both single classes and the championship.

The Hammond Estate Co., Corning, had the winning carload—a load of big Shorthorns, well fatted.

DAIRY CATTLE

Guernseys

The Guernsey show was the largest ever held at the state fair and the quality was generally above the average.

The fight for first place was usually between A. B. Humphrey of Escalon and the Brant Rancho of Owensmouth and they divided the honors.

Humphrey's bull, Nobleman of Maple Hill, defeated Brant's bull, May King of Fern Ridge, the last year's grand champion, in the aged bull class and had clear sailing for senior and grand champion. Escalon Fancy Lad shown by Humphrey was junior champion and was sold to W. H. Dupee of Santee before he left the ring.

In the aged cows Brant's Sylvia of Frankland was first over the Leonard Estate cow and Brant's Princess of Meadowbrook who has often been grand champion at this show. She was later made senior and grand champion.

The Guernsey Cattle Club prize for the best cow in milk bred by the exhibitor was won by Humphrey.

The Leonard Estate of Grants Pass, Oregon, was present with a nice herd of females and was generally up in the money.

L. W. Wing made the awards which follow:

Exhibitors: Brant Rancho, Owensmouth; Calla Grove Farm, Manteca; Loring Farnam, Ojai; A. B. Humphrey, Escalon; Leonard Estate Company, Grants Pass, Oregon; James Marwick, Santa Barbara; Palo Alto Stock Ranch, Palo Alto; L. D. Smith, Hydesville.

Aged bull—1, Brant on Nobleman of Maple Hill. 2, Brant on May King of Fern Ridge. 3, Palo Alto on Argie's Prince. 3, Leonard on Nella Girl's Diamond of Pencoyd. 5, Smith on Mysie's Lady of Claremont.

Two year old — 1, Brant on Itchen Daisy's King of Revada. 2, Smith on Babe's Boy of Claremont.

Senior yearling—1, Smith on Claremont Renown.

Junior yearling—1, Brant on May Day of the Rancho. 2, Humphrey on Escalon Rex. 3, Farnam on Angus King of Hollow Hill Farm. 4, Smith on Claremont Don.

Senior bull calf—1, Humphrey on Escalon Fancy Lad. 2, Brant on Noble King of the Rancho. 3, Humphrey on Escalon Bopeep's Pride. 4, Humphrey on Escalon Bullion. 5, Smith on Claremont Chief.

Junior bull calf—1, Brant on Golden Glow of the Rancho. 2, Marwick on Rube Langdon of Hollow Hill Farm. 3, Humphrey on Escalon Itchen Prince. 4, Leonard on River Banks Bonny Jay. 5, Leonard on River Banks Jay Lyons.

Aged cow—1, Brant on Sylvia of Frankland. 2, Leonard on Red Lady of Sunnyside Farm. 3, Brant on Princess of Meadowbrook. 4, Humphrey on Golden Ann's Fairy. 5, Leonard on Red Lady of River Banks Farms.

Aged cow—1, Humphrey on Revada Lily Bell. 2, Brant on Little Queen of the Rancho. 3, Smith on Queen of Claremont.

Two year old—1, Humphrey on Escalon Lassie. 2, Brant on Elsie of the Rancho. 3, Leonard on Sunny Lady of River Banks Farm. 4, Smith on Mysie's Hope of Claremont 2nd.

Senior yearling—1, Humphrey on Mayhews Bonnie Lass. 2, Leonard on Imp. River Banks Valentine. 3, Brant on Jeannie of the Rancho. 4, Brant on Pet of the Rancho. 5, Humphrey on Pearl Souffle of Revada.

Junior yearling—1, Leonard on Imp. Osceola Misty Morn. 2, Brant on Felois Tungsten Priscilla. 3, Smith on Claremont Mollie. 4, Humphrey on Escalon Queen. 5, Smith on May of Claremont.

Senior heifer calf — 1, Humphrey on Escalon Pearl. 2, Leonard on Imp. Osceola Water Lily. 3, Brant on Fascination of the Rancho. 4, Humphrey on Escalon Marigold. 5, Brant on Melissa's Queen of the Rancho.

Junior heifer calf—1, Humphrey on Escalon Naomi. 2, Brant on Fenix of the Rancho. 3, Leonard on River Banks Nella Girl. 4, Brant on May King's Rosemary of the Rancho. 5, Humphrey on Escalon Phyllis.

Senior champion bull — Nobleman of Maple Hill. Junior champion—Escalon Fancy Lad.

Senior champion female — Sylvia of Frankland. Junior champion female—Escalon Naomi.

Grand champion bull — Nobleman of Maple Hill.

Grand champion female — Sylvia of Frankland.

Aged herd—1, Brant. 2, Humphrey. 3, Leonard.

Breeders' young herd — 1. Brant. 2, Humphrey. 3, Smith.

Calf herd—1, Humphrey. 2, Brant. 3, Smith.

Get of sire—1, Humphrey. 2, Humphrey. 3, Brant. 4, Smith.

Produce of dam—1, Brant. 2, Humphrey. 3, Leonard. 4, Smith.

Dairy herd 5 cows in milk—1, Brant.

Ayrshires

Exhibitors: Elkhorn Farm, Watsonville; Lathrop Bros., Grants Pass, Oregon; E. Wyndham, Redding.

Aged bull—1, Lathrop on Willowmoor Ben Hur 24th.

Two year old—1, Elkhorn on Elkhorn Masterpiece. 2, Wyndham on David of Shasta. 3, Wyndham on Prince Rupert of Grants Pass.

Junior yearling—1, Elkhorn on Elkhorn Pilot.

Senior calf—1, Elkhorn on Elkhorn Ben. 2, Wyndham on unnamed. 3, Lathrop on Sunny Brook Jim.

Junior calf — 1, Elkhorn on Elkhorn Rover. 2, Lathrop on Oregon. 3, Wyndham on Tanglewyld Duke of Ayres.

Aged cow — 1, Elkhorn on Highland Ithan. 2, Elkhorn on Polly Puss 3rd. 3, Wyndham on Aaggie of Darrock. 4, Wyndham on Tanglewyld Princess 2nd. 5, Lathrop, on Blossom of Sunny Brook.

Two year old—1, Lathrop on Blossom's Mickey of Sunny Brook.

Senior yearling—1, Elkhorn on Elkhorn Heathflower 2nd. 2, Elkhorn on Elkhorn Princess. 3, Lathrop on Ben's Lady of Sunny Brook. 4, Wyndham on Shasta's Dream. 5, Wyndham on Maid of Shasta.

Junior yearling—1, Elkhorn on Elkhorn Polly Puss. 2, Lathrop on Sunny Brook May.

Senior calf — 1, Elkhorn on Elkhorn Bonnie Queen. 2, Elkhorn on Elkhorn Bonnie Bell. 3, Wyndham on Darling of Shasta. 4, Lathrop on Blossom's Mollie of Sunny Brook. 5, Lathrop on Mickey's Lottie of Sunny Brook.

Junior calf — 1, Elkhorn on Elkhorn Thistledown. 2, Elkhorn on Elkhorn Blue Belle. 3, Lathrop on Judy. 4, Wyndham on Tanglewyld Princess 5th. 5, Lathrop on Flo.

Cow having official yearly record—1, Elkhorn on Pully Puss 3rd. 2, Elkhorn on Highland Ithan. 3, Lathrop on Blossom of Sunny Brook. 4, Wyndham on Aaggie of Darrock. 5, Lathrop on Blossom's Mickey of Sunny Brook.

Senior champion bull—Elkhorn Masterpiece. Junior champion bull — Elkhorn Pilot.

Senior champion cow—Highland Ithan. Junior champion cow — Elkhorn Bonnie Queen.

Grand champion bull—Elkhorn Pilot.

Grand champion cow—Highland Ithan.

Breeders' young herd—1, Elkhorn. 2, Wyndham. 3, Lathrop.

Calf herd—1, Elkhorn. 2, Lathrop.

Get of sire—1, Elkhorn. 2, Wyndham. 3, Lathrop.

Produce of dam—1, Elkhorn. 2, Elkhorn. 3, Lathrop. 4, Wyndham.

Dairy Shorthorns

Exhibitors: Alexander & Kellogg, Davis; J. D. Rowe & Sons, Davis; Thos. T. Harrison, Santa Rosa; W. T. Roberts, Penngrove.

Aged bull—1, Harrison on Count Tickford. 2, Alexander & Kellogg on Innisfail Favorite.

Junior yearling—1, Alexander & Kellogg on Innisfail Perfecter. 2, Alexander

& Kellogg on Innisfail Roan.
Senior bull—1, Alexander & Kellogg on Snow White. 2, Harrison on Santa Rosa Viscount. 3, Harrison on King Viscount.
Junior bull calf—1, Harrison on Count Crystal. 2, Harrison on Count Marshall. 3, Alexander & Kellogg on Snowdrop. 4, Alexander & Kellogg on unnamed.
Aged cow—1, Alexander & Kellogg on Bellevue Daisy. 2, Alexander & Kellogg on Princess Clay. 3, Alexander & Kellogg on Alma. 4, Harrison on Miss Utility.
Three year old—1, Harrison on Welfare's Belle. 2, Alexander & Kellogg on Innisfail Dairymaid.
Two year old—1, Harrison on Frantic Girl. 2, Alexander & Kellogg on Gipsy Girl. 3, Alexander & Kellogg on Valley Belle 6th.
Senior yearling heifer—1, Harrison on Lovely Perfection. 2, Alexander & Kellogg on Valley Belle 7th.
Junior yearling heifer—1, Roberts on Roan Bess. 2, Alexander & Kellogg on Innisfail Daisy 2nd.
Senior heifer calf—1, Alexander & Kellogg on Innisfail Betty. 2, Alexander & Kellogg on Innisfail Betty Jane.
Junior heifer calf — 1, Harrison on Santa Rosa Butterfly. 2, Harrison on Santa Rosa Pearl. 3, Alexander & Kellogg on Innisfail Evelyn. 4, Alexander & Kellogg on Innisfail Daisy 3rd.
Cow having official yearly record—1, Alexander & Kellogg on Bellevue Daisy. 2, Alexander & Kellogg on Princess Clay.
Senior champion bull—Count Tickford. Junior champion bull—Crystal Count.
Senior champion female — Bellevue Daisy. Junior champion female—Santa Rosa Butterfly.
Grand champion bull—Count Tickford. Reserve—Crystal Count.
Grand champion female — Bellevue Daisy. Reserve—Santa Rosa Butterfly.
Aged herd—1, Harrison. 2, Alexander & Kellogg.
Breeders' young herd—1, Alexander & Kellogg.
Calf herd—1, Alexander & Kellogg. 2, Alexander & Kellogg. 3, Alexander & Kellogg.
Produce of dam—1, Harrison. 2, Alexander & Kellogg. 3, Alexander & Kellogg. 4, Alexander & Kellogg.
Dairy herd—1, Alexander & Kellogg.

Ayrshires

The Ayrshire show comprised three herds with a total of 38 animals. This was a marked improvement over the showing of last year when only one herd was present.

Elkhorn Farm of Watsonville was the heaviest winner, taking all the championships as well as 14 firsts. The grand champion cow was Highland Ithan who was also grand champion at the fair when she was shown in 1919. The competition between this cow and her herd mate, Elkhorn Bonnie Queen, the junior champion, was exceedingly keen, for the highest honors. Judge Kildee's final remarks were: "A grand old cow against a most wonderful young thing."

The grand champion award in the male class gave Elkhorn Pilot the decision over his mate, Elkhorn Masterpiece.

The other herds showing were from Wyndham Ayrshire Farm of Redding and Lathrop Bros. of Grant's Pass, Oregon. Mr. Wyndham is one of the new breeders in the state and he has some fine foundation animals which he recently brought into this state from Canada.

This year considerable interest was shown in the breed and many interested spectators watched the award of the ribbons. All of which goes to show that the Ayrshire is becoming better known and more popular in California.

Jerseys

Jas. E. Thorp of Lockeford came loaded to the gunwales in the Jersey classes this year, and after the battle was over he had all the purples but one and the lion's share of the blues. Thorp had a wonderfully balanced herd, of excellent type and well fitted. M. Fortini of Orland who won practically everything last year was present with only six head but was in the money with all of these. Fortini won the two year old cow and junior champion bull classes and together with Guy Miller pushed Thorp to the limit in nearly all Jersey classes.

Thorp's great old cow, Salome of Mossdale, was grand champion and his aged bull, Jolly Senator Raleigh, was grand champion male.

L. W. Wing Jr. served as judge in place of E. W. Majors who was unable to officiate because of illness.

The awards follow:

Exhibitors: John Bruce, Galt; Austin Clark, Orland; Marguerite Conant, Modesto; Anna May Conoly, Orland; A. Cruikshanks, Sacramento; Ernest Forbs, Orland; M. Fortini, Orland; Wm. Gibson, Galt; E. E. Greenough, Merced; S. Leigh Howard, Merced; Charley Krause, Orland; Max Krause, Orland; Guy H. Miller, Modesto; Harold Mordecai, Petaluma; Norman Neal, Petaluma; Newton M. Peterson, Sebastopol; Oscar B. Peterson, Sebastopol; J. H. Sawyer, Galt; Mae A. Sawyer, Galt; Seavy & Son, Galt; Mildred Seavy, Galt; P. N. Smith, Florin; J. E. Thorp, Lockeford; H. G. Van Pelt, Waterloo, Iowa (by J. H. Sawyer, Galt).

Aged bull—1, Thorp on Jolly Senator Raleigh. 2, Miller on Jap's Perfection Owl.

Two year olds—1, Thorp on Biddy's King of Mossdale.

Senior yearling—1, Thorp on Fairy Boy of Mossdale. 2, Van Pelt on Financial Corrector.

Junior yearling — 1, Fortini on Sir Lancelot of Tintagel. 2, Miller on Ramona's Perfection Owl. 3, Thorp on King's Fresno Buttercup King of L. 4, Max Krause on Noble Dulcet King. 5, Miller on Jap's Foxy Owl.

Senior calf—1, Fortini on King Mark of Tintagel. 2, Forbs on Lora's Undulata. 3, Fortini on Orlando of Tintagel. 4, Thorp on King of Mossdale Jr. 5, Cruickshanks on Golden Lucy's Belleview Dick.

Junior calf—Thorp on King's Tip of Mossdale. 2, Seavy and Son on Blonde Beauty's King. 3, Miller on Lucilles Owl. 4, Sawyer on unnamed.

Aged cows—1, Thorp on Salome of Mossdale. 2, Sawyer on Valet's Fresno Lemola of L. 3, Fortini on Silverine Pearl's Duchess. 4, Thorp on Nomie of Venadera. 5, Miller on Gladys of Venadera.

Three year olds—1, Thorp on Bonnie of Mossdale. 2, Thorp on Fair Salome of Mossdale. 3, Miller on Ada of Venadera. 4, Thorp on Goldie's Nehalem Cowslip.

Two year olds—1, Fortini on Jewel of Tintagel. 2, Thorp on Oxford Nora's Daisy. 3, Thorp on Gladys of Mossdale. 4, Miller on Diana of Venadera. 5, Miller on Laurie of Venadera.

Senior yearling heifer—1, Sawyer on Goldie's Dame Onota. 2, Thorp on Girlie of Mossdale. 3, Thorp on Jolly Emerita of Mossdale. 4, Thorp on Sonny's Blossom of Mossdale. 5, Henry on Violet's Betty Fox.

Junior yearling heifer—1, Thorp on Ramona of Mossdale. 2, Charley Kruse on Pearl of Willow Wood. 3, Irvin Hayworth on Verna of Venadera. 4, Miller on Emblem of Venadera. 5, Marguerite Conant on Fox's Sunshine Betty.

Senior heifer calf—1, Thorp on Wardress of Mossdale. 2, Fortini on The Gay Prince of Tintagel. 3, Fortini on The Briar Rose of Tintagel. 4, Thorp on King's Daisy of Mossdale. 5, Miller on Carmen of Venadera.

Junior heifer calf—1, Thorp on King's Miss of Mossdale. 2, Peterson on Violet's Induction of Waikiki. 3, Peterson on Waikiki Indiana Girl. 4, Miller on Signet of Venadera. 5, Sawyer on unnamed.

Senior champion bull—Jolly Senator Raleigh.

Senior champion cow—Salome of Mossdale; reserve, Jewel of Tintagel.

Junior champion female—Goldie's Dame Onota; reserve, Wardress of Mossdale.

Grand champion female—Salome of Mossdale; reserve, Goldie's Dame Onota.

Senior champion bull — Jolly Senator Raleigh.

Junior champion bull—King Mark of Tintagel; reserve, Sir Lancelot of Tintagel.

Grand champion bull— Jolly Senator Raleigh; reserve, King Mark of Tintagel.

Aged herd—1, Thorp; 2, Miller; 3, Thorp.

Young herd—1, Thorp; 2, Miller.

Calf herd—1, Thorp; 2, Miller.

Get of sire—1, Thorp; 2, Miller; 3, Thorp; 4, Miller.

Produce of dam—1, Fortini; 2, Thorp; 3, Thorp; 4, Miller.

Five cows in milk—1, Thorp; 2, Miller.

Milking Shorthorns

J. D. Rowe & Sons of Davis, lesees of the Alexander and Kellogg herd, fought it out with Thos. Harrison of Santa Rosa for the honors in the "dual purpose" show.

Harrison was best in the bulls with Count Tickford while the Rowe's great red cow, Bellevue Daisy, won the honors in the females.

The Rowes were successful in winning with their breeders young herd and their grand champion cow was first in the class for official record cows.

The milking Shorthorn is a great breed and while many of the animals shown could have placed in the beef classes their records for production equal those of many of the strictly dairy breeds.

Interest in this breed is growing steadily and before long there will undoubtedly be other exhibitors in the field.

Holsteins

Account of the exhibit of Holsteins is not received from Sacramento, but as general statement we may say that in number of entries the Holsteins did not come up to former years, but in general quality a finer class was never shown.

The awards were:

Exhibitors: Manuel Azavedo & Sons, Patterson; H. G. Ball, Tulare; Dr. H. N. Belgium, Richmond; Smith H. Bibens, Modesto; California George Jr. Republic, Chino; Edward Charters, Woodland; J. M. Christen, Martinez; Del Paso Heights Stock and Swine Breeders' Association, Del Paso Heights; V. F. Dolcini, Davis; Evelyn Foster, Petaluma; E. F. Gleason, San Juan Bautista; W. J. Higdon, Tulare; R. L. Holmes, Modesto; August Lauchert, Galt; Jouquia Lucio, Tulare; Palo Alto Stock Farm, Palo Alto; Thelma Peterson, Petaluma; The McCloud River Lumber Company, McCloud; Sierra Vista Stock Ranch, Perris; Six Bros. Dairy, Turlock; Clay Stammerjohan, Turlock; Katie Stammerjohan, Turlock; Loney Stammerjohan, Turlock; Reuben Stammerjohan, Turlock; Stella Stammerjohan, Turlock; William Stammerjohan, Turlock; D. E. J. Weldon, Sacramento.

Aged bull—1, George Jr. on Dichter Spofford Korndyke Lad 5th. 2, Del Paso on Bonita Sir Cornucopia Glista. 3, Stammerjohan on Inka Fraske De Kol.

Two year old—1, Lucio on Prince Bonie Walker. 2, Sierra Vista on Sir Ormsby Skylark Rauwerd.

(Continued on Page 307.)

A HIGH CLASS OFFERING

47 REGISTERED HOLSTEINS 47

Owned by ROBERT T. CURTIS & SON, Exeter, Cal.

Selling at

Tulare Sale Pavilion, Tulare, Cal.

Wednesday, October 5

at 10 A.M.

This is not a dispersal sale, but the owners are selling the cream of their herd, retaining some of the older cows to mate with KING PRILLY MEAD as the foundation for another herd.

The breeding of the herd is most substantial, with a number of outstanding individuals, and includes:

COLOMA BEAUTY BUTTER MAID, the great heifer that made 34.72 lbs. butter in 7 days as a junior 4 year old, after making 875.3 lbs. butter from 20,202.7 lbs. milk in one year as a junior 3 year old.

THREE DAUGHTERS OF KING KORNDYKE PONTIAC 20TH, the $12,000.00 son of Miss Valley Mead De Kol Walker. One of them out of Coloma Beauty Butter Maid, and one out of a 26 lb. daughter of the great foundation cow Winifred Hotaling.

GRANDDAUGHTERS of Tilly Alcartra, King of the Pontiacs, Pontiac Korndyke, Pontiac Aaggie Korndyke, Johanna McKinley Segis, and a group of 13 granddaughters of King Dollar.

A REAL HERD BULL PROSPECT

The sale includes a young son of KING KORNDYKE PONTIAC 20TH, out of a dam that made 773.12 lbs. butter from 22,637.9 lbs. milk in one year as a junior 3 year old. Six of his seven nearest dams have yearly records, four of them made as 3 year olds, and the six average 808.27 lbs. butter and 19,318.5 lbs. milk.

Every animal positively guaranteed to be a breeder; every animal over six months old Tuberculin Tested and sold subject to retest by the buyer.

Auctioneers.
Ben A. Rhoades, Los Angeles
Geo. W. Bell, Tulare

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

103 REGISTERED HOLSTEINS 103

At Public Auction

Rhoades and Rhoades Pavilion, Hynes, Cal.

Friday, October 21, at 9.30 A.M.

The first individual public sale offering made by ROBT. N. CLAPP, Proprietor of SYCAMORE ACRES, Nuevo, Calif.

Featuring the Blood of KING SEGIS PONTIAC

The sale list includes a considerable number of daughters and a large number of granddaughters of KING SEGIS PONTIAC, and most of the bred females are in calf to the youngest and last son of KING SEGIS PONTIAC.

Show Cattle!

Records Up to Over 32 lbs.!

Mostly Young Cattle!

This is the greatest offering of KING SEGIS blood ever made in a single Western sale, and positively one of the typiest large offerings ever made in California.

SEND FOR A CATALOG OF THIS SALE NOW!

Every animal positively guaranteed to be a breeder; every animal over six months old Tuberculin Tested and sold subject to 60 day retest except as announced at sale.

TERMS OF SALE: Cash unless arrangements for credit are made prior to sale with the sale managers, California Breeders Sales and Pedigree Co., who will extend terms of one-third cash, balance in three, six, and nine months, to responsible parties on approved notes. We will extend credit to anyone in Southern California approved by Rhoades & Rhoades.

Auctioneers:
RHOADES & RHOADES
Los Angeles

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

Prevents Hog Cholera—Cresy-lol

A standardized Disinfectant. Dilute 1 part with 50 parts of water and use as spray or dip. Manufactured by

ARTHUR R. MAAS, Chemist

308 E. 8th St., Los Angeles, Calif. Write for circular

THE SWINE

Poland Chinas

The Poland Chinas carried off all honors for number of hogs shown at this year's fair.

They did not come up to last year in numbers but they beat all the other breeds.

The show was above the average in quality and the type was pretty generally settled.

All things considered it was the best show the breed has ever made

Honors did not come easily and the prize money was well split up. There were probably never three such boars in one ring in this state as competed for the senior championship. Buster Bob, first prize aged boar shown by the Eastman Ranch, had the good wishes of Southern California, while Navy Boy, shown by Stephens and Gatewood of Fresno, and Western Rainbow, owned by Bassett Bros. of Hanford, divided the good will of the San Joaquin Valley folks.

Navy Boy was made senior and grand champion with Western Rainbow reserve.

In the juniors Straloch Farm of Davis won with Western C, a son of Liberty Girl 3rd, the grand champion sow of last year.

In this breed the junior yearling was the strongest aged female class with 12 showing. Hazel C., shown by Bassett Bros., won the class and later was made grand champion. Bassett Bros. also won the junior championship with Princess Pat.

The futurities were well split up and no one got too much money. The entire futurity allotment of $1,050 was competed for and claimed.

The silver cup awarded by the California State Poland China Association for the best sow under one year bred by exhibitor went to Bassett Bros., while Straloch Farm won the cup for boars. Straloch Farm also won the cup for the new exhibitor winning most money. The Eastman Ranch was close in line for this prize.

J. C. Meese, who judged the Polands, congratulated the breeders on their showing and said that many of their hogs could win in any eastern show, proving that they were right in regard to type and conformation and that they can go ahead.

Exhibitors—Bassett Brothers, Hanford; Buckland & McNeil, Fresno; George V. Beckman & Sons, Lodi; California Swine Corporation, Escalon; W. L. Choisser, Turlock; Fred A. Clark, Orland; J. H. Cook, Chico; Charles E. Dack, Fresno; A. J. Elliott, Turlock; Norman F. Eastman, San Fernando; Charles Gatewood, Fresno; Johnnie Glusing, Winton; H. A. Johansen, Fresno; P. B. Long, Tulare; Charles Stephens and Fred Gatewood, Herndon; Straloch Farm, Woodland.

Aged boar—1, Eastman on Buster Bob. 2, Bassett Bros. on Model Giant. 3, Cook on Orange Grant.

Senior yearling—1, Stephens and Gatewood on Navy Boy. 2, Buckland & McNeil on Giant Prospect. 3, Eastman on Eastman's Korver. 4, Beckman & Sons on Calivator. 5, Buckland & McNeil on El Capitan.

Junior yearling—1, Bassett Bros. on Western Rainbow. 2, Bassett Bros. on Cal. Rainbow. 3, Cook on Orange Yankee. 4, Elliot on Model Jones. 5, Elliot on Long Jones.

Senior pig—1, Dack on High Spot of Berma. 2, Stephens and Gatewood on Fresno Boy Jr. 3, Buckland & McNeil on Giant Checkers. 4, Elliot on Fortuna Boy. 5, Bassett Bros. on Liberator Buster 2nd.

Junior pig—1, Straloch on Westerner C. 2, Eastman on Topper. 3, Bassett on Peter Jones. 4, Straloch on Yankee Fashion. 5, California Swine Corp.

Aged sow—1, Buckland & McNeil on Hawkeye Maid. 2, Straloch on Miss Yankee. 3, Clark on Lady Jumbo. 4, Buckland & McNeil on Polandale Bettie. 5, Bassett on Janie Jones.

Senior yearling—1, Buckland & McNeil on Prospect Mollie. 2, Bassett on Timm's Jumbo Girl. 3, Elliot on Big Bone Orange Maid 3rd. 4, Calif. Swine Corp. on Iowa Maid. 5, Lillie Mae Wood on Lady Orphan.

Junior yearling—1, Hazel C., Bassett Bros. 2, Orange Giantess, Bassett Bros. 3, Long Babe, Elliot. 4, Lakeside Beauty, Beckman & Sons.

Senior yearling—1, Princess Pat, Bassett Bros. 2, Willows' Lady, Elliot. 3, Eastman's Choice, Eastman. 4, May Belle, Buckland & McNeil. 5, Orange Bobbie, Elliot.

Junior pig—1, Liberty Girl, Straloch Farm. 2, Buster's Giantess, Eastman. 3, Lady Victoria Sunland 4th, Johansen. 4, May Belle, Buckland & McNeil. 5, Long Maid, Elliott.

Senior champion boar—Navy Boy; reserve, Western Rainbow; junior champion boar, Western C.; grand champion boar, Navy Boy; reserve grand champion boar, Western Rainbow.

Senior champion sow—Hazel C.; reserve senior champion, Hawkeye Maid; junior champion sow, Princess Pat; reserve, Liberty Girl A.

Grand champion sow—Hazel C.; reserve, Hawkeye Maid.

Aged herd—1, Bassett Bros. 2, Buckland & McNeil. 3, Beckman & Sons.

Young herd—1, Straloch Farm. 2, Bassett Bros. 3, Eastman.

Breeders' young herd—1, Eastman. 2, Dack. 3, Beckman & Sons.

Get of sire—1, Bassett Bros. 2, Straloch Farm. 3, Elliott.

Produce of dam—1, Bassett Bros. 2, Straloch Farm. 3, Elliott.

Fat barrow—1, Gatewood. 2, Bassett Bros. 3, Bassett Bros.

Pen, 3 barrows—1, Bassett Bros.

Duroc-Jerseys

For a time at least during the summer it looked as though the red hog show would be pretty slim this year but when the breeders from the south woke up it became a show which, while not as big as the one last year was ahead of it on average quality. There were not as many outstanding good hogs as last year nor were there so many outstanding poor ones. The slump in hogs during the past year has served to eliminate most of the reds of poor quality.

William V. Mong of Your Duroc Farm at Whittier was the winner of the most money. Mong's herd, which is headed by My Partner, contains some very fine individuals and they were generally at the top. In the females, Pathfinder's High Lady, who was first in a class of 21 junior yearlings, trotted right out ahead of the field for senior and grand champion. Her herd mate, Colonel Pathfinder's Lady, was reserve senior champion.

Early in the show it was conceded that the sow which won in the junior yearling class would be champion as this was the best balanced and strongest class in the show. The man who could have picked 10 of these beauties for a foundation would never need to worry about his future in the hog business.

In the aged boars Choice Wonder 3rd, last year's grand champion shown by V. F. Dolcini of Davis, was first but was beaten for championship honors by the great boar, Royal I. Am shown by Cash & Kyne. This boar who was junior champion at Los Angeles in 1920 is generally conceded to be the best champion ever shown. He is just about all that a Duroc boar should be and weighs 800 pounds.

In the junior boar pigs Mong stepped out and captured first, second and third places and also won first in junior sow pigs and in the futurity litter contest. His futurity winnings amounted to $202. He also won both junior champions.

J. C. Craig of Owensmouth was a constant contender and won the much sought for blue in the herd bred by exhibitor class.

J. E. Thorp of Lockeford won the aged sow class and reserve grand champion.

In the barrow class H. P. Slocum & Son of Willows took practically all the honors.

Professor H. H. Kildee of Iowa state agricultural college made the awards:

Exhibitors: Lowell J. Beaver, Fresno; Harvey M. Berglund, Dixon; Fred M. Buck, Woodland; J. C. Craig, Owensmouth; William V. Mong, Whittier; Ordway and Snyder, Hughson; L. W. Pray, Durham; J. D. Rowe and Sons, Davis; Sierra Vista Stock Ranch, Perris; Cecil Slack, Napa; H. P. Slocum and Son, Willows; J. E. Thorp, Lockeford; The Western Laboratories, Stockton; Witherow and Stafford, Live Oak.

Senior pig—1, Dolcini on unnamed. 2, Sierra Vista on Lena Sensation. 3, Craig on Wanda 1st. 4, Craig on Wanda 2nd. 5, Dolcini on June Acres Wonder Lady 2nd.

Junior pig—1, Mong on Sensation Ellen. 2, Craig on Wanda 4th. 3, Mong on Sensation Annie. 4, Thorp. 5, Thorp.

Senior champion boar—Royal I Am. Reserve—Choice Wonder 3rd.

Junior champion boar—Hilong Sensation. Reserve—Prince of Pathfinder.

Senior champion sow—High Pathfinder's Lady. Reserve—Col. Pathfinder's Lady.

Junior champion—J. E. Thorp. Reserve—Sensation Ellen.

Grand champion boar—Royal I Am. Reserve—Choice Wonder 3rd.

Grand champion sow — High Pathfinder's Lady.

Aged boar—1, Dolcini on Choice Wonder 3rd. 2, Mong on My Partner. 3, Berglund on King Cherry Orion. 4, Western Laboratories on Western Regulator. 5, Slocum & Sons on Goldfinder.

Senior yearling — 1, Sierra Vista on Royal I Am.

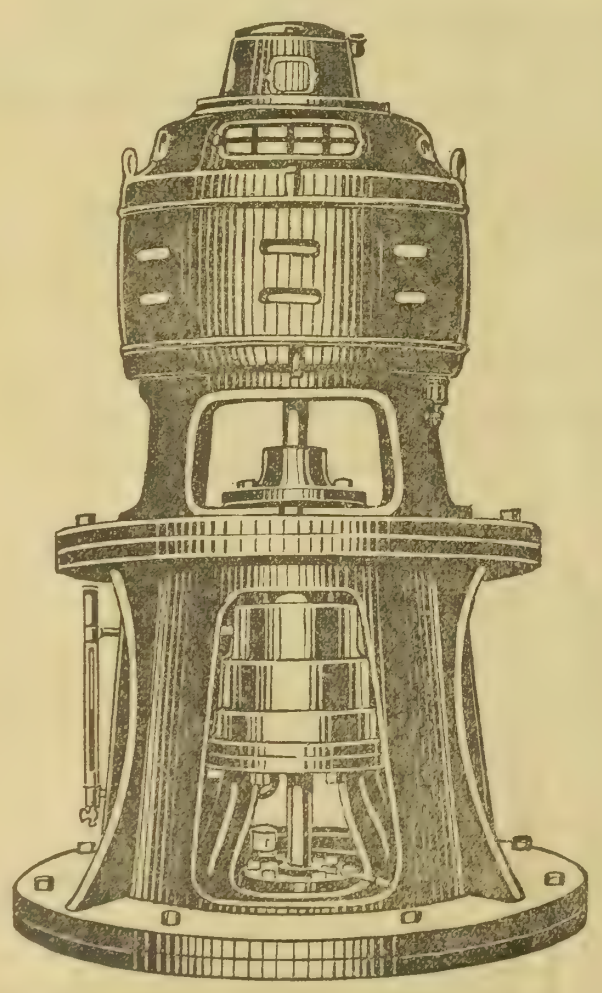
Junior yearling — 1, Slack on King Orion Defender. 2, Slocum on Key of Giant Jr. 3, Craig on Orion High Pathfinder. 4, Beaver on Falfadale's Sensation. 5, Slocum & Son.

Senior pig—1, Craig on Prince of Pathfinders. 2, Dolcini on June Acres Mabaska Wonder. 3, Slocum. 4, Craig on Rainbow Pathfinder. 5, Slocum.

Junior pig—1, Mong on Hilong Sensation. 2, Mong on Ainti Sensation. 3, Mong on Sensation Bankroll. 4, Thorp.

mammoth pump capacity
– a Layne & Bowler Achievement

Pictured below is the type of Layne & Bowler Pump recently installed on the Arroyo Ditch Company's property at Rivera, California. This pump produces 3,480 gallons of water per minute and is one of the largest producers on the Coast. L. & B. Pumps are manufactured in sizes and capacities to produce 180 to 4,500 gallons per minute.



Layne & Bowler Water Engineers At Your Service

Our organization includes the largest corps of expert water engineers to be found in the country. No matter what your water requirements may be our engineers can assist you in selecting the type of pump best adapted to your needs. If you contemplate the installation of a new pump or the development of a new water supply, secure authoritative advice from our engineers. This places you under no obligation to purchase L. & B. Pumps.

LAYNE & BOWLER CORPORATION

900 Santa Fe Ave., Los Angeles

5, Ordway & Snyder.
Aged sow—1, Thorp. 2, Witherow & Stafford on Lady Loraine. 3, Western Laboratories on Borges Lucey Wonder. 4, Craig on May Rose Blossom.
Senior yearling—1, Mong on Col. Pathfinder's Lady. 2, Sierra Vista on Classy Sensation. 3, Craig on Model Sensation Lady 1st. 4, Dolcini on June Acres Defendress 2nd. 5, Craig on Wanda Pathfinder.
Junior yearling—1, Mong on High Pathfinder's Lady. 2, Thorp; 3, Western Lab. on Sensation's Orion Cherry. 4, Mong on Lady Pathfinder. 5, Dolcini on June Acres Wondress.
Aged herd—1, Mong. 2, Dolcini. 3, Sierra Vista.
Young herd—1, Craig. 2, Sierra Vista. 3, Thorp.
Breeders' young herd—1, Craig. 2, Dolcini. 3, Craig.
Get of sire—1, Mong. 2, Dolcini. 3, Thorp.
Produce of dam—1, Mong. 2, Thorp. 3, Craig. 4, Craig.
Fat barrow, any age of the breed—1, Slocum. 2, Slocum. 3, Slocum.
Pen 3 barrows, any age of the breed—1, Slocum. 2, Slocum. 3, Dolcini.

Hampshires

The biggest Hampshire show and the best the fair has ever known was the feature this year. Hayes & Harter of Grant's Pass, Oregon, brought down an excellent herd and James Marwick of Santa Barbara had another. Most of the honors went to one or the other of these herds with the outsiders cutting in occasionally. The awards follow:

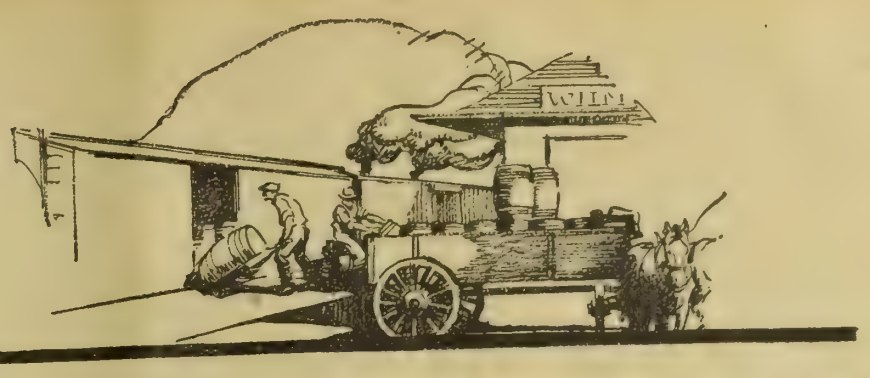
Exhibitors: J. M. Christen, Martinez; Everett Elmore, Hornbrook; Hayes & Harter, Grants Pass, Oregon; Hans J. Knudsen, Perkins; James Marwick, Santa Barbara.
Aged boar—Marwick on Exalted Ruler. 2, Elmore on King Sapphire.
Senior yearling—1, Elmore on Diamond Prince. 2, Elmore on Siskiyou Lad.
Junior yearling—1, Hayes & Harter on Model's Defender. 2, Knudsen on Routier. 3, Elmore on Klamath King. 4, Elmore on Miss Agate Prince. 5, Elmore on Pilot Rock Duke.
Senior pig—1, Marwick on Braemar Pershing. 2, Marwick on Braemar King. 3, Elmore on Silver King. 4, Elmore on Sapphire Boy. 5, Elmore on Maple Leaf Tommy.
Junior pig—1, Hayes & Harter. 2, Hayes & Harter. 3, Hayes & Harter. 4, Hayes & Harter. 5, Christen on Diablo King.
Aged sow — 1, Hayes & Harter on Sunny Slope's Princess. 2, Marwick on Tipton's Maid 2nd. 3, Christen on Empress. 4, Elmore on Tariet. 5, Elmore on Pride of Peace.
Senior yearling—1, Marwick on Ronnie Lass. 2, Hayes & Harter on O. U. R. Cornet. 3, Hayes & Harter on O. U. R. Cornflower. 4, Marwick on Blossom of Braemar. 5, Elmore on Snowflake.
Junior yearling — 1, Christen on Miss Emma. 2, Elmore on Dixie Queen.
Senior pig—1, Marwick on Lady Pershing. 2, Christen on California Lady. 3, Marwick on Braemar Queen. 4, Marwick on Braemar Princess. 5, Marwick on Braemar Duchess.
Junior pig—1, Hayes & Harter. 2, Hayes & Harter. 3, Marwick. 4, Christen. 5, Elmore.
Senior champion boar—Model Defender. Reserve—Exalted Ruler.
Junior champoin boar—Hayes & Harter.
Senior champion sow — Sunny Slope Princess. Reserve—Bonnie Lass.
Junior champion sow—Lady Pershing.
Grand champion boar — Model's Defender.
Pen 3 barrows any age of any breed—1, Marwick.

Berkshires

There were not so many Berkshires on exhibition this year as last, but the quality was never higher. From the first boar class to the carload of fat barrows there were plenty of outstanding individuals and so few plain ones that they were not noticeable.

The carload of Berkshire barrows shown by the Napa state hospital were January pigs and weighed 275 pounds. They have been fed slop from the hospital and soaked barley. Most of them were sired by a son of Star Leader. Last year's sensational load, which beat Mr. Bassets' really wonderful load of Polands, had some sows. This year it was a straight load of 30 head of barrows. The single barrow shown by Alex Wilson of the Italian Vineyard Company was an exceptional animal, a splendid type and wonderfully finished.

In the aged boar class there were five good ones, headed by Humphrey's Escalon Artral Leader 3rd, the best fitted and smoothest fleshed of the big ones. The judge liked the second prize boar, Escalon May Star, shown by Bastanchury, mighty well. He is big and long and stretchy, but lacked fitting. Only two senior yearling boars were shown, but they were big growthy ones. The junior yearling class was a big one with a lot of good ones. Cannon, a comparatively new but very enthusiastic breeder, won first and later reserve senior champion with a son of Rincon Leader, a boar of Brush breeding. Wilson of the Italian Vineyard Company had an easy winner in the senior boar pig



Why Are Your Railway Rates Higher?

Existing railway rates are high.

Not because railroad capital is seeking or getting a larger return, but because **railroad labor has thus far succeeded in keeping wages and rules of work fixed under war-time conditions,** and because coal and other things railways must buy are still high.

In 1916 the railroads earned a net return of 6 per cent. This return which they earned five years ago is all the Interstate Commerce Commission meant to assure them when it fixed the present rates.

Every increase in rates which has taken place since 1916 has been for the purpose of meeting increased operating expenses, of which labor is the big item.

The compensation paid to the owners of the railroads on capital invested in them has declined, while wages have greatly increased.

Below are the amounts paid by the Class 1 railways in wages to their employees and in dividends to their owners in the years 1912, 1916, 1919 and 1920:

	Wages Paid to Railway Employes	Dividends Paid to Railway Owners
1912	$1,209,716,686	$339,964,855
1916	1,468,576,394	306,176,937
1919	2,843,128,432	278,516,908
1920	3,698,216,351	271,429,999

Increase in wages in eight years, $2,488,499,665, or over 200 per cent.

Decrease in dividends in eight years, $68,000,000, or 20 per cent.

Railways Are Trying to Reduce Expenses

The railway managements for many months have been exerting every effort to bring operating costs down so that rates can be reduced. Railroad employees will not accept reductions in wages without controversy. Any such controversy must go before the United States Railroad Labor Board. The railways cannot under the Transportation Act make any reductions in wages that are not either agreed to by their employees or authorized by the Railroad Labor Board.

Since 1916 **wages have been increased over two billion two hundred million dollars.** They were decreased last July by $400,000,000 a year, **leaving five-sixth of the increase since 1916 still in effect.**

"National Agreements" Are Still In Effect

The railroads are still operating under the costly and wasteful rules and working conditions established by the "national agreements" under government control. They are still compelled to pay millions and millions of dollars for time not actually worked and to employ 3 or 4 or 5 kinds of high grade labor on work that one or two kinds performed before the war.

The railroads are making every effort to get the "national agreements" set aside and establish reasonable rules. The "national agreements" are still kept in effect by the demands of organized labor and the orders of the Railroad Labor Board.

The railroad managements are making every possible saving by increasing the average number of tons carried in each car, the average number of miles each car is moved per day, by reducing the number of their operating divisions, by economies in the use of coal and by refraining as much as possible from buying materials and supplies at present prices.

But all of these economies will not make practical a substantial reduction in rates unless the cost of railroad labor is further reduced.

No "Guarantee" to the Railroads Now

The idea that railroad managements have guaranteed to them a 6 per cent return and have therefore no incentive to economy is absolutely untrue.

Since September 1, 1920, no railroad could receive what it did not earn. Since that time the railroads have failed to earn a 6 per cent return by $518,000,000 and **have lost that sum forever.**

In this period of readjustment the railroads are taking their loss just like everybody else—**only they have no war-time surplus to take it out of.** Unlike many other industries, they accumulated no large surpluses because they were restricted under government control to the same net return they earned in the three years before the United States entered the war.

A decrease in operating expenses sufficient to make possible a general reduction in rates can be secured only by further substantial reductions in railroad operating expenses—including the abolition of war-time rules and working conditions so that the amount of work per day of each railroad employee will be something near what it was before the war.

Association of Railway Executives

61 BROADWAY, NEW YORK — 764 TRANSPORTATION BUILDING, CHICAGO, ILL. — MUNSEY BUILDING, WASHINGTON, D.C.

Those desiring further information on the railroad situation are requested to address the offices of the Association or the presidents of any of the individual railroads.

Humphrey. 3, Italian Vineyard Co.
Young herd—1, Humphrey. 2, Italian Vineyard Co. 3, Italian Vineyard Co.
Breeders' young herd—1, Humphrey. 2, Humphrey. 3, Italian Vineyard Co.
Get of sire—1, Humphrey. 2, Italian Vineyard Co.
Produce of dam—1, Humphrey. 2, Leonard Est. Co. 3, Teasdale.
Barrow, any age of the breed—1, Humphrey.
Pen, 3 barrows, any age of the breed—Humphrey.

In trying to kill two birds with one stone you frequently miss both birds.

Santa Anita Rancho

Percherons

BELLZAR

Pure Bred Registered Percheron, Arabian, Thoroughbred Horses

Mammoth Jacks and Jennets

Holstein-Friesian Cattle

Big Type Poland China Swine

Southdown Sheep

A four year old son of the prize winning stallion Althazar, and out of the imported mare Mabel. Color jet black, weight 2,150 pounds. A stallion of great size, quality and action, with good legs and feet. Good disposition, and broken to service. The Rancho offers for sale at this time along with Bellzar, several high-class two-year-old Percheron stallions of grand conformation and style that weigh over 1,800 pounds. Also several Mammoth Jacks that are top-notchers, with size and quality and broken to service.

The Jacks are Black with white points, the big rangy kind with plenty of bone, weighing from 1,000 pounds to 1,115 pounds, two to four years old. Have a few real good Arabian stallions for sale, two and three years old. For those desirous of purchasing the best, bred and developed right here in California, it would be advisable to visit the Rancho and make a selection. All stock guaranteed.

Correspondence Solicited Visitors Welcome

Santa Anita Rancho
and Anoakia Breeding Farm

SANTA ANITA Anita M. Baldwin, Owner CALIFORNIA

MAKES OWN ELECTRIC LIGHT

With A. F. Swift, prominent dairyman of Talbert, Orange County, efficiency is more than a word; it stands out as a reality at every point. With one exception his dairy business with its model cow barn, silo, complete milking and bottling house and up-to-date milking machine was all that could be desired.

"I was greatly handicapped," said Mr. Swift, "by the lack of proper illumination. My men lost too much time working by lantern light. Experience has taught me that it gives big returns to surround my men with proper working conditions, so when I equipped my place with a Willys Light and Power Plant the results more than met my expectations."

Mr. Swift now runs his milking machine, brine circulating pump and other dairy machinery by electric power. His cow barn, milking house and other outbuildings are lighted by electricity. Three well placed yard lights brilliantly illuminate his entire yard, making working conditions about the whole place ideal, considering the fact that milking operations are started at one o'clock in the morning. The two family residences and bunk house are also illuminated, and the families have the great convenience of the various labor and time saving electrical appliances, such as vacuum cleaners, irons, etc. The results of electrifying his place are reflected in the contented working and living conditions, as now everyone works with precision and dispatch, doing considerably more work in a given time than could formerly be accomplished. Mr. Swift feels that the problem of keeping his men has been solved.

The cost of operating this plant is no greater than formerly required to run the milking machine. "The item alone of money saved that formerly went into less efficient service," says Mr. Swift, "more than pays a liberal dividend on the investment."

Considerable time has been saved by centralizing his power equipment in one place. A number of other ranchers and dairymen in the neighboring district, seeing the many advantages in the saving of time and labor, have followed in the footsteps of Mr. Swift.

GIVE TRACTOR BETTER CARE

It is reported, according to recent investigations conducted by both the United States department of agriculture and a number of state universities, that the average use of a tractor at the drawbar in the Mississippi Valley wheat and corn belt is 30.8 days per year. It is also generally conceded that the use of a tractor in California at the drawbar is something over 150 days per year on the average, in fact, a great many orchard owners with tractors operate continually day and night when ground conditions are most favorable for orchard work.

Another feature indicating marked differences is the fact that the average depth of plowing in the state of Illinois is 6½ inches while the average depth ground is worked in California is ten inches. Cover crops are often plowed in 12 inches deep. The average life of a tractor, as far as it can be determined, in the East is seven years. If this average is correct it would be 215.6 actual working days for the tractor. A tractor that will last seven years in California must be built to work 1,050 days. It is obvious then that a California tractor must have greater care and must not be expected to last so long under California conditions or it should be of the very best construction to compete acre for acre or year for year with the operating expenses existing in competition with the producer in the wheat belt.

It is no doubt true that there is more belt work in the East for tractors than in California. One large and well known ranch in Orange County keeping a record of its tractor operations shows the tractor runs over 200 days per year. It would seem then that the best possible tractor construction is essential to meet California conditions.

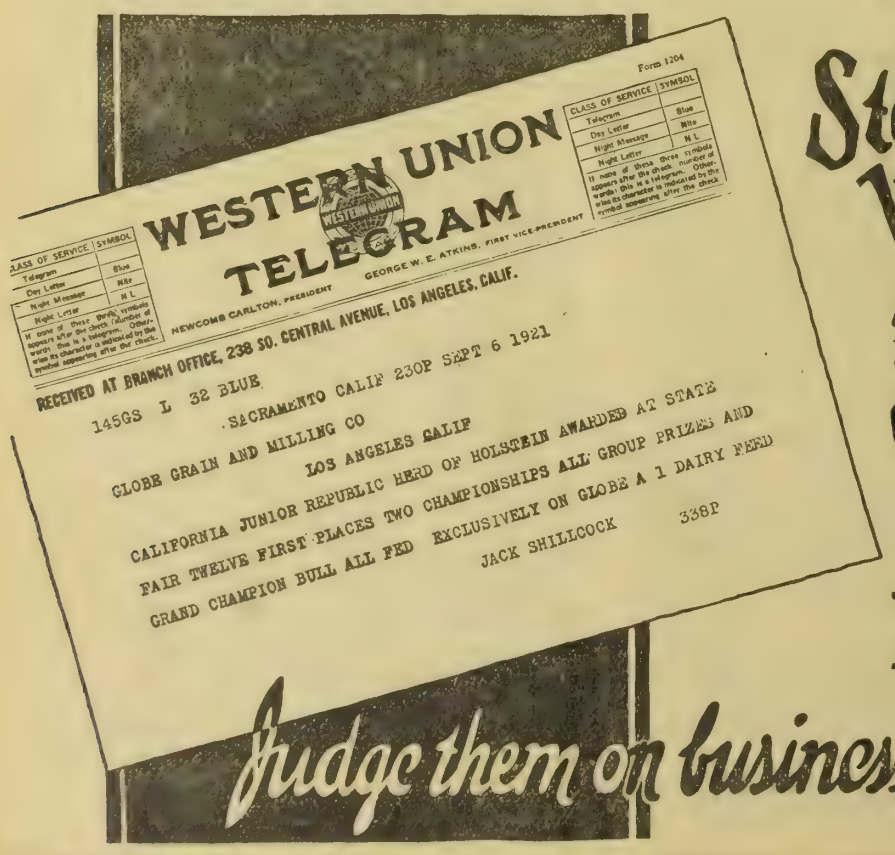
MORE WOOL AND MUTTON

Sheep breeders, ranchmen and animal husbandmen from six or eight states went to the United States sheep experiment station near Dubois, Idaho, this year for the annual shearing. Keen interest attaches to the work done at this station, especially by those who are alive to the importance of producing, if possible, a breed that shall combine weight in mutton and excellence in fleece, with special reference to market demands for fine or coarse grades of wool. In the shearing this year, just reported to the department of agriculture, the Rambouillets scored highest. The report shows: Average weight of wool per sheep—Rambouillets, 11.14 lbs.; Columbias, 10.15 lbs.; Corriedales, 10.08 lbs.; Corriedale grades, 10.00 lbs.

The station at Dubois was established by the bureau of animal industry in 1917 to conduct experiments with which it was hoped to solve some of the big problems in range sheep business. With only a little more than three years' experience the specialists do not consider the results sufficiently conclusive to warrant definite assertion in favor of or against particular range practice, but the work has attracted the attention of sheepmen everywhere, and is expected to become increasingly important as the experiments develop.

"It is quite generally agreed," said one of the sheep husbandmen, "that for the main part of the range sheep country of the Northwestern states the type of ewes obtained in the first cross between the long wools and the fine wools is a very desirable stock ewe. We appreciate the fact that fine wool rams were most popular in 1919, and that this was due in part to the high price of fine wool. Even should fine wool continue to sell above coarser grades, which is doubtful, we still could not afford to neglect the lamb side of the business that has been the cause of such large use of crossbred stock."

Sheepmen concerned in the business of producing sheep that shall combine mutton and the right kind of fleece watch with interest the development of the Corriedale grades and the Columbias. The Corriedale was imported from New Zealand in 1915 by the bureau of animal industry for this work. The Columbia is the Lincoln and Rambouillet cross interbred.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Judge them on business principles.

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The direct selling method from producer to consumer, and a clearing house for over 40,000 subscribers. Weekly Liner rates: Single insertion 4½ cents per word; 45c per issue minimum charge. Cash with Order

Mail all classified copy to Los Angeles Office.

POULTRY

Continued requests are being received by the California Cultivator for varieties of poultry not advertised in our columns. If any of you, our readers and friends, have any you wish to dispose of, send a small advertisement to this office and you will be doing our readers a service as well as yourselves.

Day Old Pullets—Here is your chance to get day old White Leghorn and Ancona chicks guaranteed at least 90 per cent pullets. We are taking orders fast for August and September delivery. We also have R. I. Red and Barred Rock chicks but do not separate the sex. All chicks are from strictly thoroughbred laying stock and are hatched right and shipped by Special Delivery Parcel Post. Send for prices and get your orders in at once. We also have a limited number of pullets from two to four months old and yearling hens. Orange County Hatchery, Santa Ana, California.

Petaluma Hatchery—Established 1902 by L. W. Clark. White and Brown Leghorn chicks from heavy laying free range stock, every Monday and Thursday. We positively guarantee safe arrival and full count of good strong chicks and no questions asked. Send for prices and terms. L. W. Clark, Petaluma, California.

It's no wonder so many poultry raisers make a failure of the business. Without any knowledge of raising poultry people will branch out expecting to make a success. By putting in practice the valuable contents of POULTRY FOR PROFIT, $1.00 postpaid, success is assured in the poultry business. Cultivator Publishing Company, Los Angeles, California.

Baby Chicks hatched in Petaluma Incubators are a superior class. Strong, vigorous, sturdy, grow rapidly, lay early. Buy chicks from hatcheries using Petaluma Incubators. You will find one near you, if not, write us. Catalog free. Petaluma Electric Incubator Co., Petaluma, California.

White Leghorn Baby Chicks — Walter Hogan stock. We get all our eggs from one flock of over 4,000 Walter Hogan hens that have been carefully Hoganized. Our specialty is first class White Leghorn hens that satisfy our customers. We will have chicks September 1st. Lyon Hatchery, Gardena, California.

Foote's Bred-to-Lay Barred Plymouth Rocks. Fancy breeding cockerels from hens with trapnest records of 200 to 250 eggs. Buy now and save money. Will cost double next spring. Price now $5.00 to $10.00. Stanley S. Foote, 1177 East 53rd St., Los Angeles.

Baby Chicks—Barred Rocks and Reds, 25, $5.00; 50, $9.50; 100, $18.00; White Leghorns, 25, $4.25; 50, $8.00; 100, $15.00. Shipped every Monday. Parcel Post, special delivery, prepaid. Established 1915. Hargett & Son, Route 2, Box C, Compton, California.

Chicks Every Week from good layers. Fall Broilers pay. Pullets make good layers. R. I. Reds, Barred Rocks, White Leghorns. Safe arrival guaranteed. Write for circular. Stubbe Poultry Ranch & Hatchery, P. O. Box 67, Palo Alto, California.

Baby Chicks from my heavy laying, carefully selected strain of pure bred S. C. White Leghorns. I am booking orders now for September and October delivery. Good chicks at reasonable prices. Write for particulars. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

White Leghorn Baby Chicks from heaviest laying (Hoganized) stock. Safe delivery live, vigorous chicks guaranteed. No money in advance; pay on delivery. Prices on request. Established 1898. MUST HATCH INCUBATOR CO., 438 Seventh St., Petaluma, California.

Barred Plymouth Rocks — "Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Vodden, Los Gatos, California.

White Leghorn Baby Chix from Petaluma's heaviest producing stock. We guarantee safe arrival. Literature on request. Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

Watch Us Grow: Fall chicks, Rhode Island Reds, B. Rocks, White and Brown Leghorns and Anconas. E. W. Ohlen, Campbell, California.

Regular White Wyandotte cockerels, February hatch. White Feather Farm, Howard Burns, R. R. No. 1, Chowchilla, California.

"Eastman's Bred-to-Lay" Barred Rocks. Fall Chicks—March, April pullets. Fairmead Poultry Farm, Fairmead, California.

Success in business is attained by experience and knowledge. The poultry business can be made to pay by following the teachings and information contained in POULTRY FOR PROFIT, $1.00 postpaid. Cultivator Publishing Company, Los Angeles, California.

SEEDS AND PLANTS

Strawberry Plants for the Pacific Coast, such varieties as Nick Ohmer, Marshall, Kellogg's Premier, Klondyke, and about 30 other varieties; also Dewberries and Raspberries. Ask for free catalogue. V. R. Allen, Seaford, Delaware.

GOATS

Excellent Brush Clearers — Sixty does, good foundation for milk goat herd; bred to purebred Toggenburg buck. Eight dollars each, f. o. b. ranch. H. G. Ranch, Buellton, California.

For Sale—Pure Swiss Toggenburgs, does and bucks, from finest milk strains. La Corona Goatery, R. 1-416, El Monte, California.

FARM LAND FOR SALE

FARM RENTERS

You can become a farm owner on terms very much like those you are now paying to rent land. We have deep, rich soil with complete irrigation and drainage systems. We are willing to cooperate with hard working, reliable men who want to become owners of farms. Sutter Basin (in the heart of the Sacramento Valley) is your opportunity. Write now.

SUTTER BASIN COMPANY,
California Fruit Bldg., Sacramento, Calif.

For Sale—65 acres deciduous fruit land, 15 acres cleared; balance partly cut over pine and oak. Buildings, family fruit, berries; 2,000 feet elevation; pressure irrigation system, R. R. siding adjoining, electricity available; live American community. Good school and church, on main road. $6,000 for quick sale. C. H. Eckles, Paradise, Butte County, Cal.

Lake County Land for Sale—Bearing pear and prune orchards, dairy and stock farms. Alfalfa and grain land and other properties. Address Joe Hyman, Lakeport, Lake County, California.

125 Acres, Tulare County, clear, level, plenty water for irrigation. Sell or trade for Southern California property. $12,000, terms. Inquire owner, Jas. S. Beardsley, Julian, California.

20 Acre Alfalfa Dairy Ranch, none better in Turlock irrigation district; also cows, hay. Harmon Berg, Hughson, Cal.

For Sale — Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

CATTLE

For Sale — Several registered Guernsey bull calves, one old enough for service, Edgemoor Farm breeding, reasonably priced. Apply to Dr. J. A. Woodside, Santee, San Diego County, California.

Guernseys — Grape Wild Farms—Berkshires—Young bulls, from calf age up to 16 months old, of May Rose breeding and out of A. R. cows. Bred sows and gilts, service boars and pigs of both sexes for sale. Grape Wild Farms, Escalon, California. A. B. Humphrey, Proprietor.

For Sale—My herd bull, Finderne Soldene Pontiac Valdessa 206927. His dam, granddam and great granddam were all World's Record cows. Great bargain. Geo. A. Smith, Corcoran, California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Berylwood Stock Farm—Breeders of registered Holstein cattle and Duroc-Jersey swine. Every cow an A. R. O. and T. B. tested. Bulls and females for sale. J. W. Snodgrass, Hueneme, California.

Yearly Record Holsteins—Bulls from 500 to 1,000 pound dams and by World Record sires. A. W. Merris & Sons, Woodland, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Some Choice registered Holstein heifers and bulls of serviceable age for sale. J. W. Scudder, Escalon, California.

Winsor Ranch Jerseys—Bull calves with production behind them, at reasonable prices. BONITA, CALIFORNIA.

MACHINERY

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Reliable Trees and grapevines at a fair price. Write us for price list. We ship on approval. J. F. Miller & Sons, Healdsburg, Cal.

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Weanling Boars and Gilts by Pathfinder Wonder (Great Wonder I Am ex an 800 lb. Pathfinder sow) for $10 each. Bred sows and gilts. Derryfield Farm, Capital National Bank Bldg., Sacramento, California.

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Wanted—Walnut Meats and Cull Walnuts. We have been in this business 16 years; solicit culls for cracking only, paying cash. Fred L. Mitchell & Son, 214 French Street, Santa Ana, California. Phone 551-M.

Want to Hear from owner having farm for sale; give particulars and lowest price. John J. Black, 116th Street, Chippewa Falls, Wisconsin.

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We Will Buy your Calla Lily roots. If you have 100 or more, write us. Sevin-Vincent Co., 512 Washington St., San Francisco, California.

Wanted—Idle canning or evaporating factories. Give full information and lowest cash prices. Address Box 10, Cultivator.

Farm Wanted — Wanted to hear from owner of a farm or good land for sale; possession this winter. L. Jones, Box 748, Olney, Ill.

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Mountain Honey—Best light amber, 5 gallons up at 10c lb. f. o. b. San Diego; sample, 15c. Geo. B. Dickerson, El Cajon, Cal.

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RABBITS

Pedigreed Flemish Giants — No fancy prices. Maud Beeching, 1578 W. 46th St., Los Angeles.

class with Guasti's Leader Champion. One of the most attractive pigs in the show was the junior boar, Guasti's Rival. He was made junior champion and reserve grand champion.

The senior sow class is always the most attractive one in the show and especially so this year. No one has ever shown a better sow in California than Violets Festine, shown by Wilson. She was first in class, senior and grand champion. She just fills the eye, and is one hog that shows herself. Last year's champion, shown by Humphrey, was placed third, but she farrowed a litter of 12 and was not in bloom. Castleview Royal Duchess 2nd was an easy winner in the senior yearling class. Commenting on the aged sow class Jenkins said: "It is a pleasure to look over a ring like this. I have never seen a better one, and there are sows here that did not get in the money that would win at most fairs." The ringside was delighted with the judging and of course with Ralph Jenkins.—W. S. Guilford.

The awards follow:

Exhibitors — D. J. Bastanchury, La Habra; H. W. Cannon, Suisun; A. B. Humphrey, Escalon; Italian Vineyard Co., Guasti; Leonard Estate Co., Grants Pass, Oregon; James Mills Orchard Corp., Hamilton City; H. S. Teasdale, Elko, Nevada.

Aged boars—1, Humphrey on Escalon Artful Leader. 2, Bastanchury on Escalon May Star. 3,Italian Vineyard on Model Leader 3rd. 4,James Mills on Laurel Lustre Boy. 5, Leonard on Pacific Epochal.

Senior yearling—1, Humphrey on Grape Wild Leader 4th. 2, Italian Vineyard on Baron Duke Natomas.

Junior yearling—1, Cannon on Cashier 3rd. 2, Italian Vineyard on Matchless Type 2nd. 3, Bastanchury on La Habra May Star. 4, Humphrey on Grape Wild Champion. 5, Leonard on River Banks Champion.

Senior pig—1, Italian Vineyard on Rosa's Duke. 2, Leonard on River Banks Champion 26th. 3, Humphrey on Grape Wild Emblem 2nd. 4, Humphrey on Grape Wild Duke. 5, Leonard on River Banks Champion 27th.

Junior pig—1, Italian Vineyard on Guasti's Rival. 2, Humphrey on May's Challenger. 3, Humphrey on Grape Wild Leader 10th. 4, Leonard on River Banks Champion 28th. 5, Italian Vineyard on Model Rockwood.

Aged sow—1, Italian Vineyard on Violet's Festline. 2, Humphrey on Grape Wild Rose 8th. 3, Humphrey on Grape Wild Rose 6th. 4, Humphrey on Escalon Artful Belle 5th.

Senior yearling—1, Italian Vineyard Co. on Castleview Royal Duchess 2nd. 2, Italian Vineyard Co. on Real Types Belle 4th. 3, Humphrey on Escalon Belle 6th. 4, Humphrey on Escalon Princess 8th.

Junior yearling—1,Italian Vineyard Co. on Peerless Royal Lady 3rd. 2, Italian Vineyard Co. on Matchless Lady Type. 3, Humphrey on Escalon Belle 12th. 4, Italian Vineyard Co. on Burton's Oregon Lady. 5, Humphrey on Grape Wild Bernice 16th.

Senior yearling—1, D. J. Bastanchury. 2, Humphrey on Grape Wild Laurel 2nd. 3, Humphrey on Grape Wild Bernice 13th. 4, Humphrey on Escalon Ruby. 5, Italian Vineyard Co. on Riverby Duchess 55.

Junior pig—1, Italian Vineyard Co. on Lady Winona's Pride. 2, Leonard Est. Co. on River Banks Laurel 44th. 3, Leonard Est. Co. on River Banks Laurel 45th. 4, Humphrey on Escalon Artful Princess 2nd. 5, Humphrey on Escalon Artful Princess 3rd.

Senior champion boar—Escalon Artful Leader 3rd; reserve, Cashier 3rd.

Junior champion boar—Guasti's Rival; reserve, Guasti's Leader.

Senior champion sow—Violet's Festline; reserve, Peerless Royal Lady 3rd.

Junior champion sow—Bastanchury; reserve, Lady Winona's Pride.

Grand champion boar—Escalon Artful Leader 3rd; reserve, Guasti's Rival.

Grand champion sow—Violet's Festline; reserve, Peerless Royal 3rd.

Aged herd—1, Italian Vineyard Co. 2,

California Egg Laying Contest

By J. E. Dougherty

THE August production of the 540 contesting hens in the California farm bureau egg laying contest at Santa Cruz was 51½ per cent, and the average production of the flock for the 304 days ending August 31 was 166 eggs per hen. Even though the ensuing 61 days of the contest include the least productive months for eggs, the contest flock is undoubtedly going to cross the finish line with an average flock record well toward the 200 mark.

Hanson's entry strengthened their lead over the second high pen this month by 24 more eggs than their lead at the end of July. They are now 64 eggs ahead of Geo. Gray's pen which is still going strong in second place. August production carried S. L. Gibson's pen 30 from 6th to 4th high place and dropped Hollywood's entry back into 6th position. Warren Wood's pen No. 49 climbed into 10th place on its August record but the Santa Barbara ranch entry slowed up so much that it lost its place among the 10 leaders.

A noteworthy individual monthly record was made by O. A. C. Barred Rock No. 72. This hustling lady has been a heavy layer month after month and her August performance jumped her from 6th to 2nd place. She is only 11 eggs behind Miss Hollywood No. 53 now and is evidently going to be a dangerous competitor for the silver cup for high individual at the close of the contest.

Seventy-four more hens passed the 200-egg mark this month than the 24 reported at the end of July. This makes a total of 94 hens that have laid 200 or more eggs to date.

Leading Pens

Hanson's Poultry Farm, Corvallis, Oregon, 2,099 2/3 eggs; Geo. Gray, Santa Cruz, 2,035 2/3; W. H. Marshall, Santa Cruz, 2,031 2-3; S. L. Gibson, Santa Cruz, 2,028 2/3; W. A. Ford, Umatilla, Oregon, 2,018 2/3; Hollywood Farm, Hollywood, Washington, 1,997; Gibson, 1,940 2/3; Gibson, 1,878; Alex Stewart, 1,867; Warren Wood, Santa Cruz, 1,860 1/3.

High Hens

Hollywood Farm, 251 eggs; Barred Rocks, Oregon Agricultural College, 240; White Leghorn, Oregon Agricultural College, 239; J. S. Conrado, Santa Cruz, 238; Hanson's Poultry Farm, 238; Hollywood Farm, 234; La Rita, Santa Cruz, 232; Ed Crewdson, Santa Cruz, 231; Hollywood Farm, 231; Geo. Gray, 230; Hanson's Poultry Farm, 230.

The race for the blue ribbon for high pen for August was very close, S. L. Gibson winning by one egg over Geo. Gray. High pens for the month are: Gibson, 210 eggs; Gray, 209; D. B. Balls, Petaluma, 206; Wood, 204; Hanson, 203 1/3; Gibson, 202; Stewart, 201 1/3.

The ribbon awards for high individuals for August were closely contested for, four pens tying for third place. The awards follow: Walls, Petaluma, 29 eggs, first; O. A. C., Barred Rocks, 28, second; Wood, Santa Cruz, 26, third; Gray, Santa Cruz, 26, third; Walls, Petaluma, 26, third; Walls, 26, third.

The average amount of grain and mash consumed per 100 hens for the 31 days of August was approximately: 9.4 pounds mash, 9.3 pounds dry scratch grain mixture, 4.5 pounds sprouted barley (dry weight), ¼-inch sprouts. The amount of mash consumed for the month was less than anticipated, being brought about by the increase in molting birds. Beginning with September, both the amount of sprouted and dry grain will be decreased with the object of restoring the desired equal consumption of grain and mash.

All birds, unless otherwise indicated, are S. C. White Leghorns. Fractional figures in pen records result from dividing floor eggs by the three entries in each pen.

STORRS EGG LAYING CONTEST

Storrs, Connecticut, August 29, 1921. Report for week ending August 29.

The hens in the contest at Storrs are running a good race. Their production to date is 140,479 eggs and they still have nine weeks to go. The production for the week was 3,381 eggs or a yield of 48.3 per cent. This is 49 more eggs than last week but 29 eggs less than the six year average.

The 500 Leghorns are leading all other breeds with an average egg production of 149.7 eggs per bird. The 270 Reds are second with an average egg production per bird of 134.8 eggs. The 140 Rocks are third with an average of 127.1 eggs per bird. The 90 other birds, which includes the Wyandottes, Brahmas and Black Leghorns, have an average production of 126.7 eggs each.

A pen of Rhode Island Reds owned by Pinecrest Orchards, Groton, Massachusetts, was first for the week with a production of 56 eggs. A pen of White Leghorns owned by Hollywood Farm, Hollywood, Washington, was second with a production of 52 eggs.

The four leading pens in each of the principal varieties are:

Barred Plymouth Rocks

W. H. B. Kent, 1,765 eggs; Rock Rose Farm, 1,517 eggs; Jules F. Francais, 1,455 eggs; James F. MacDonald (White), 1,351 eggs.

Rhode Island Reds

Charles H. Lane, 1,725 eggs; the Orchards, 1,601 eggs; Sunnyfield Farm, 1,586 eggs; H. S. Bickford, 1,564 eggs.

White Leghorns

Hollywood Farm, 1,852 eggs; L. E. Ingoldsby, 1,814 eggs; Jack Trevethan, 1,751 eggs; Burchell & Janson, 1,749 eggs.

Other Varieties

Obed G. Knight (White Wyandottes), 1,935 eggs; H. P. Cloyes (Buff Wyandottes), 1,497; A. E. Hampton (Black Leghorns), 1,371; Harry D. Emmons (White Wyandottes), 1,247 eggs.

Poultry Queries

(Conducted by Jean A. Koethen.)

Fireless Brooder

Will you please tell me how to make a fireless brooder?—Subscriber, Terra Bella.

Fireless brooders may be of different sizes to accommodate 25, 50 or even 100 chicks, but the easiest to make, and I believe the most satisfactory in the long run, is the Philo model. This accommodates 25 chicks, never more, for the reason that 25 chicks can be kept warm by the heat of their own bodies, while a smaller number cannot and a larger number is apt to crowd or to pile up one on top of the other. The Philo brooder is about 13 or 14 inches square and six to eight inches high. The exact height is not important, but the box should not be

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Pasadena—Pasadena H. S. Tire Co., 34 No. Union St.; H. W. Shafer, 30 W. Colorado St.
La Habra—Missouri Garage.
Brawley—Quick Service Vulc. Shop.
El Centro—Swinson Service Station
Calexico—T. J. Northington, 228 Imperial Ave.
Westmoreland—L. W. Norman
Imperial—H. V. Emblem
Brea—Brea Garage
Placentia—Schumacher's Garage.
Atwood—E. P. Francis.
Ontario—American Vulc. Works, 3rd and Thomas St.
Pomona—American Vulc. Works.
Uplands—J. Lynward Grahame.
Redlands—Home Oil Co.
San Bernardino—San Bernardino Rubber Works, 595 3rd St.
Riverside—Riverside Vulc. Works, 303 W. 8th St.
Indio—Indio Garage.
San Diego—Miller Motor Supply, 648 Market St.
Fullerton—Pitts & Wilkinson
Torrance—Palmer & Stapelfeld.
Anaheim—F. W. James, 223 No. Los Angeles St.

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larger than 14 inches square because that leaves too much air space inside with 25 chicks. Any clean box of the right size will do. Now cut a door about four inches wide in one side and fasten the piece you cut out on a cleat in such a way that it can be replaced when the chicks are inside. Next, tack a cleat around the inside of the box five inches from the bottom, and make a light frame to fit loosely on top of the cleat. This is the frame for the quilt which should be of cheese cloth and cotton and thick enough for a baby's bed. Tack this on the frame, not too tightly, for ventilation at first will have to come in around its edge, and let it sag in the middle till it almost rests on the bottom of the box. Hung in this way your quilt is always ready and can be removed quickly. Now, cover the bottom and sides of the box with tar paper, a single piece is best for you do not want it to fit in to the corners. A brooder is better without corners. You are ready now for the nest litter which should be the softest straw or chaff you can find. Put in plenty, and mold it into a deep, round nest. The first few nights the chicks will get air enough around the sides of the quilt, but after that, especially if the weather is warm, the door may be left partly open. This brooder should be used in a coop or house, not out of doors.

Brooder Houses

Would like suggestions for brooder house for raising chicks on commercial scale. In your judgment are the so-called manure brooders suitable, or would you recommend some other type?—Subscriber, Laws.

You will find several types of brooder houses described in "Poultry for Profit," and I am mailing you descriptions of one or two others. I do not understand what is meant by the term "manure brooder." If that is another name for fireless brooder, as I suspect it may be, I can only say that the fireless brooder, while it works very well in small flocks and warm weather, is not well adapted for raising large flocks in winter, and there are few commercial poultrymen, if any, that do not use some form of heated brooder. The big brooder stoves around which a thousand or more chicks may be brooded in one room, with a room adjoining for exercise and a runway to the outside yard, has probably been more largely used on commercial ranches than any other, because it is less work than keeping chicks in small flocks, but a good many poultrymen still cling to the hot water and gas brooders, which brood only 100 chicks under a single hover. Now the electrical brooders are superseding the stoves in some localities. They are somewhat more expensive, but there is less danger of fire. Like the stoves they can be used in any kind of room or shed where there is protection from the weather, and for any size of flock. The simplest wooden building, 12 feet square or 12 by 20 for hot water brooders, with the south mostly glass, can be used for housing any one of these systems of brooders.

Cement Floors

Are cement floors advisable in poultry houses, and how should they be put in? Some claim cement is too cold.—Subscriber, Hughson.

Cement is too cold and too hard for the hens' feet if it is not covered. When covered with six to ten inches of sand and as many of straw on top of the sand it makes the very best possible floor, because it is rat proof, and, if properly built, rain proof. The cement floor should not be built on the level only, like a board floor, but should run up on the sides several inches. This keeps out any water that might drain in.

AN INCLUSIVE STATEMENT

There was a commotion in the poultry house, and the barking of the dog aroused the owner, who sallied forth with a shotgun loaded for business.

"Who's in there?"

No answer.

"I say who's in there "

Silence.

"Who's in there? If you don't answer, I'll shoot."

"Please, white man, dey ain't nobody in hyer but des us chickens."

LARGEST POULTRY FARM IN ARIZONA

By M. E. Bemis

AN EXAMPLE of success due to hard work, attention to details and a careful study of his business, is that of C. D. Bowker of the Roosevelt district near Phoenix.

About nine years ago he was renting land for general farming. His home place was a ten acre tract where a few chickens were kept, but no special attention given to make them a feature of farming operations.

Then it became more difficult to rent desirable land, and about that time he and his wife began to compare notes and they found that the chickens were returning more profits for time and effort expended than any other branch of the farming business. Right then they began to expand in the poultry business and contract in general farming.

Little by little this poultry farm has grown until today they have almost 3,000 layers. Every phase of the business has been studied carefully, and although his methods do not in all ways have the approval of other poultrymen, the fact that Mr. Bowker has made money in his enterprise is sufficient excuse for any methods he has adopted and proves to his own satisfaction at least that they are applicable to poultry keeping in this section.

He expects to gradually increase the capacity of his plant to 5,000. At the present time about one-third of the flock are old hens, the others pullets. One-half of the ten acre tract is used as range for young chicks and to some extent as pasture for horses and cows. The remaining five acres is divided into four equal tracts for the laying stock. Each field is fenced with a nine foot chicken fence. The eggs are marketed in Phoenix and sold as strictly fresh guaranteed eggs, always bringing the top market price.

During the past two seasons a few chicks were hatched and sold as day old chicks. For the most part, however, the plant is run as a commercial egg plant. The hatchery has a capacity of 14,000 chicks. This takes care of some of the surplus stock of eggs during the season of greatest production. As a further check against over production eggs are stored in one of the Phoenix cold storage plants and taken out when egg production begins to slacken.

Profits last year, according to Mr. Bowker's figures, were around $6,000. This is due quite largely to the fact that Mr. and Mrs. Bowker attend to practically all details, giving close supervision and performing most of the work.

The feed is largely barley and bran, very little animal protein, such as beef scrap, being fed.

White Leghorns are bred exclusively and every attempt is made to maintain a high average quality of healthy productive stock.

MORAL HENS

A young married woman who moved into the country, considered the keeping of hens a pleasant and profitable undertaking. As she grew more absorbed in the pursuit her enthusiasm increased.

During one of her animated descriptions of her success a friend inquired: "Are your hens good layers?"

"Oh, yes," she replied, in a delighted tone; "they haven't laid a bad egg yet!"—London Tit-Bits.

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Hens can't make feathers and eggs at the same time. The quicker they get through the molt, the earlier they begin laying.
Get your hens back on the job early—get lots of eggs this fall and winter—get the profits from winter eggs. Help your hens to keep in perfect health—to overcome the strain of feather-making—to avoid the danger of molting-time sickness—to shell out lots of eggs. Give your flock
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the time-tested, guaranteed poultry tonic and conditioner. "Pratts" naturally strengthens and invigorates the whole system—helps the molting hens—hurries the growing pullets to early laying maturity. The natural result is EGGS, more eggs than your flock could lay without this great help. Note how well they can lay with this help. Save Money! Buy Pratts in 12- or 25-lb. pails; 50- or 100-lb. bags.
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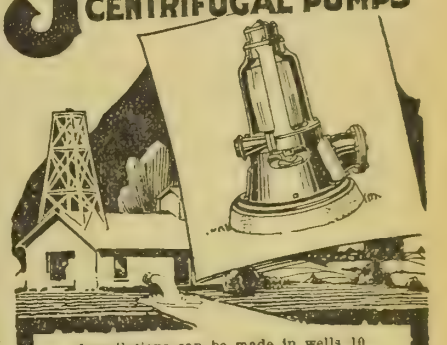

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HOLLY POULTRY RANCH
WHITE LEGHORN BABY CHICKS
LAY AND PAY! Watch for final results of our customers' Laying Contest ending October 1, which will show our chicks, as layers, will lay over 215 eggs per hen in a flock of 600. Can you beat it!
B. R. HOLLOWAY
15248 Sherman Way, Cor. Saugus Ave., Van Nuys Phone 144 Van Nuys

Los Angeles Markets

Los Angeles, September 14, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price 48 cents.

Prices Creamery Extras last week:

Sept.	7	8	9	10	12	13
'21 ...	47	47	48	..	48	48

EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 46; case count, 42; pullets, 35; pewee pullets, 23.

Extras last week and year ago:

Sept.	7	8	9	10	12	13
'21 ...	44	45	46	..	46	46

POULTRY

Price to producers: Hens, 20@27; colored, 33; broilers, 36; roasters, 30; old roosters, 18; fryers, 30; ducks. old, 12; ducklings, Pekin, 3½ up, 25; others, 25; geese, 25; turkeys, live, young tom, 50; dr., 55; old, live, 40; dr., 41; hens, live 40; dr., 44; squabs, 45@47.

Belgian hares, live, 11@16; old, 8.

LIVESTOCK

Los Angeles, Sept. 13.—Weighed and delivered off cars without food or water: Hogs (hard grain fed), 125 to 175 lbs., 10.00; 175 to 225 lbs., 11.00.

Cattle (on foot, gross weight): Steers, good, 6.50; medium, 6.00; cows, good, 5.00; medium, 4.50; bulls and stags, 3.00; calves, 125 to 150 lbs., 8.00; 175 to 225 lbs., 7.00.

Sheep: Ewes, 3.50@4.00; lambs, 7.00@7.50.

POTATOES AND ONIONS

Potatoes: Supplies heavy, demand and movement good, market firm. New stock: Mostly 85@1.00 per lug; White Rose No. 1, sacked, per cwt., choice, 2.25; fancy, 2.50@2.75. Stocktons: Burbanks, choice. 2.75; fancy, 3.00@3.25. Baking stock: Mostly 3.50@3.75; few 4.00. Sweet potatoes: Supplies moderate, movement slow, market steady. Locals: No. 1, 1.10@1.25 per lug; No. 2, 50@75 per lug; jobbing, 3½@4 per lb.

Onions: Supplies moderate, movement moderate, market firm. Locals: Whites, sacked, per cwt., 2.75@3.00; Browns, 2.75@3.00. Per lug: Browns, 1.00@1.15; Whites, 1.15@1.25. Stocktons: Whites, 3.25@3.50; Browns, 3.25.

FRESH FRUITS

Apples: Supplies heavy. Demand and movement very slow, market weak. New stock: Mostly 40@50 per lug; few best, 60. Sebastopol: "B" grade Gravensteins, medium to large sizes mostly 1.75; small sizes, 1.25@1.50. Watsonville: Fancy 4 tier Bellflowers, 1.65@1.75; 4½ tier, 1.40; "B" grade, 4 tier, 1.40@1.60.

Cantaloupes: Supplies heavy, demand and movement moderate, market steady. Homegrowns: Various varieties, small crates, best, 50@75; jumbo crates, best, 1.60@1.70.

Figs: Supplies moderate, demand good, market steady. Locals: Per box, mostly 1.00@1.10; poorer, 60@75; few fancy, 1.40@1.50.

Grapes: Supplies liberal, movement moderate, market steady. Wide range in quality. Muscats, 5@6; Tokays, 8@11; few fancy Black Hamburgs, 6@7; Concords, 13@15; Black Prince, 6@7; Thompson Seedless, 5½@6 per lb.

Peaches: Supplies of good stock light, demand moderate, market weak. Freestones mostly 1.25@1.50; few fancy, 1.75; poorer, 90@1.00 per lug; Clings, fancy, 1.25@1.50; Salways, 5½@6½ per lb.

Pears: Demand and movement good, market firm. Bartletts mostly 5@7; poorer, 4 per lb.

Prunes: Supplies light, demand good, market steady. Various varieties, 3@5 per lb., mostly 4, according to quality.

Quinces: Lug, 75@85.

HAY

Alfalfa Growers of California report: Steady improvement in demand for alfalfa hay, the result of light supplies in hands of users and dealers, free consumption, production below earlier estimates, and realization by buyers that prices are abnormally low and that the market is bound to adjust itself to these conditions.

There were 340 tons of grain and alfalfa hay received on the Los Angeles tracks the week ending September 10, with 70 tons held over.

Prevailing prices last week f. o. b. Los Angeles:

No. 1 Dairy	21.00
Standard Alfalfa	16.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats	18.00@26.00
Barley	16.00@24.00
Alfalfa, Rabbit	20.00@24.00
Alfalfa, No. 1 Dairy	18.00@20.00
Standard	16.00@18.00

San Francisco Markets

San Francisco, Sept. 13, 1921.

Quotations made daily by San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

BUTTER

U. S. Bureau of Markets, San Francisco, September 12:

Wholesale prices given below are based largely upon the reports of actual sales made for cash or ten days' credit, consideration being given to the price at which the larger quantities of each quality are sold. Wholesale prices: 93 score, 45½; 92 score, 44.

Rcts. 2 days ending Sept. 13, 1,642 centals:

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Prices bid on Dairy Exchange quotations, Sept. 12:

Extra	44.16
Extra firsts	39.60
Extra pullets	32.85
Extra first pullets	31.95
Undersized pullets No. 1	18.90
Undersized pullets No. 2	12.60

Rcts. 2 days ending Sept. 13, 61,546 doz.

LIVESTOCK

Western Meat Company quotes:

Cattle: Steers, No. 1, 5¼@5¾; do, second quality, 4¾@5¼.

Cows and heifers: No. 1, 4¼@4¾; do, second quality, 3½@4¼.

Calves: Light weight, 7@8; heavy, 5½@6½.

Sheep: Wethers, 3½@4; ewes, 2½@3.

Hogs: Hard, fat grain-fed, weighing 125 to 200 lbs., 10; do, 200 to 250 lbs., 9½; do, 250 to 350 lbs., 8; light sows, 8; heavy, 7.

POTATOES AND ONIONS

Street prices:

Potatoes: White, fy., per cwt., 2.15@2.25; fy., 2.50; Salinas, 3.00 Sweets, 2½@3½ per lb.; Turlock Nancy Hall, 3½ pe lb.

Onions: New yellow, 2.25; brown, 2.5 @2.75; green, 1.35 bx.

Green Onions: 1.25 per box.

Garlic: 3@5 per lb.

VEGETABLES

Wholesale selling price:

Beets: 1.75@2.00 per sack.

Beans: Blue Lake, 4@5; garden, 5@ 6 per lb.; Lima, southern, 7@8; river, per lb.; Italian, 5@6.

Carrots: Sk., 1.00.

Celery: 3.50@4.00 cr.

Corn: Alameda, 2.50@3.00 sack; 3.00@ 3.50 cr.

Cucumbers: Bay, 40@50; fy. River, 75@ 1.00.

Eggplant: Lb., 3@5; Livingston, 6@7.

Lettuce: Crate, 1.25.

Okra: 1.00@1.50 per box of about 1 lbs.

Peppers: Bells, 3@4 lb.; 50@75 lug 75@1.50.

Squash: Bay, 40@60 per 40 lb. lug Italian, Peninsula, 75@1.25 lug; neck 25@35 lug.

Tomatoes: Sacramento and Peninsula 1.00@1.50; few, 1.75@2.00 per cr.

FRESH FRUITS

Apples: Bellflower, 3½ and 4 tier, 1.75 4½ tier, 1.50@1.60; Gravensteins, 3½ tier 2.25@2.50; 4 tier, 2.00@2.25; 4½ tier, 1.50 @1.75; B grade, 3½ and 4 tier, 1.75@2.00 4½ tier, 1.25; Alexanders, 3½ and 4 tier 1.25@1.50; 4½ tier, 1.00@1.25. Crabapple Oregon, 1.40 per small bx.

Avocados: California, doz., 1.00@2.00; Fla.. 6.00@6.50.

Bananas: Eastern, 6@7; Hawaiian, 7@ 8.

Blackberries: 30@35 per drawer; 70@ 75 cr.

Cantaloupes: Turlock standards, 85@ 1.00; ponies, 60@75; flats, 40@50; orange flesh megs, 1.25@1.50 for standard, 65@ 75 for flats; do, Sacramento, 60@75. Persian melons, 1.00@1.25 small crate; 1.50 large crate. Honeydew melons, 75@1.00 per standard crate. Casabas, 1.00@1.25 per dozen.

Figs: Black, double layer, 1.00@1.15; single layer, 60@75 do, white, single, 60 @85.

Grapes: Per crate: Seedless, 1.15@1.25; Tokay, 1.75@2.00; do, small lugs, 2.25@ 2.50; Black, 1.25@1.50; Malaga, 1.50@1.75 per large lug; seedless, 2.00@2.25; White Cornichon, per crate, 2.25@2.50; Rose of Peru, 3.00@3.25 per large lug; Tokay, 3.00 @3.25 per large lug; Isabella, 1.75@2.00 per crate; Muscat, lugs, 2.00@2.50.

Huckleberries: 12½@20 lb.

Peaches: Per small box, 1.00@1.40; per lug, 2.50@2.75; Strawberry freestone. 1.50; clings, 3.00 per large lug; Oregon packers, 1.50@1.75 per small box.

Pears: Bartletts, No. 1, wrapped, 3.00 @3.75 box; other grades, 1.50@2.25.

Pineapples: 4.00@5.00 dozen.

Prunes: Fy., 2.00@2.25 cr.

Prunes: Cr., 50@75.

Quinces: 1.25@1.50 lug.

Raspberries: 60@75 per drawer; few 75.

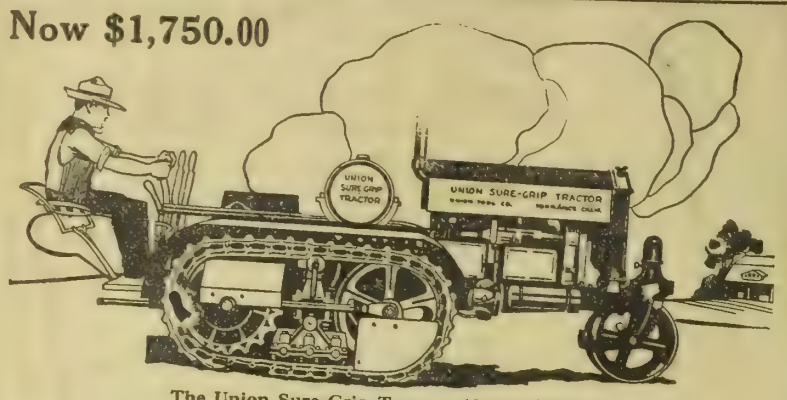
Strawberries: Salinas, cr., 1.20@1.40, drawer, 50@60; Watsonville, cr., 1.10@1.30. 1.10@1.25.

Watermelons: ¾@1 per lb.

BEANS

Below California Bean Growers Association shippers prices choice recleaned:

Now $1,750.00



The Union Sure-Grip Tractor 12-25, Model D

The Lowest Price Ever Placed Upon A High Grade Tractor Like This

After several years devoted to developing and building a tractor which in actual service has proved to be one of the most succesful machines ever produced, this company wishes to announce that it now will discontinue manufacturing this type of equipment. To those persons who plan now or at any future time to purchase a machine of this kind, this policy offers an unusual opportunity.

Old Price $3500.00 ➡ **PRICE NOW $1,750.00**

A Saving of Almost $2,000.00

To insure quick clearance of our tractor shop and warehouse, we have slashed the price of the few remaining tractors on hand to $1,750.00—just half the former price. A written guarantee to maintain a complete and adequate stock of all repair parts during the life of these tractors, goes with each machine.

The reduction in price does not mean that the Union Sure-Grip Tractor is not worth the full price for which it always has been sold. We simply are discontinuing the manufacture of this type of equipment and are willing to stand the loss in order to move the few we have left immediately.

If you ever intend to buy a tractor, investigate this opportunity now. Send the coupon today for full particulars of this offer, also complete specifications and records of these tractors in service. There are only a few left and they will go quickly at this price.

UNION TOOL COMPANY
TORRANCE (Near Los Angeles) CALIFORNIA

Union Tool Co.,
Torrance, Calif.

Send complete specifications and records of your Union Sure-Grip Tractor in service, also full details of your present offer.

Name .....

Address .....

City and State .....

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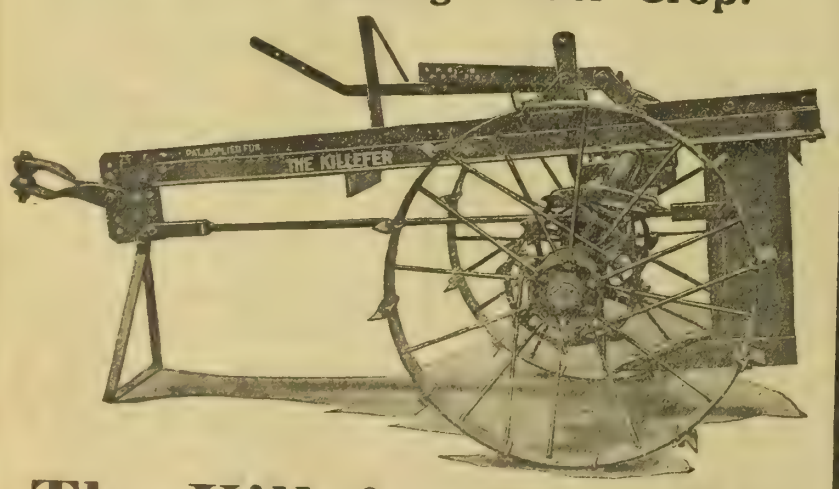
SUBSOIL YOUR ORCHARD
Before Planting Cover Crop.

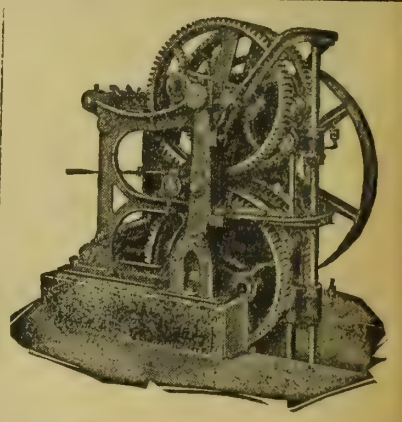


The Killefer Subsoiler

Will do the work behind any kind of tractor.
Strongly constructed hand or power lift.
Built in sizes from one to five standard.

L. M. RAILSBACK CO.

115-119 South Los Angeles St. LOS ANGELES, CALIF.



Pomona

Pumps
For Deep Wells

You will find it true economy to use POMONA Pumps for deep wells or lifts above ground. They deliver an even steady flow of water without jerk, jar or vibration, and their high efficiency will hold down the most important item of expense in your water supply, which is—YOUR POWER BILL.

Pomona Manufacturing Co
POMONA, CAL.
Manufacturers of the POMONA Irrigation Gates and Valves

Large whites	5.20
Small Whites	4.75
Pinks	5.30
Mexican Reds	5.20
Red Kidney	8.10
Henderson Bush	5.00
Cranberries	5.60
Bayos	6.00
Blackeyes	4.00

HAY AND FEED

Wheat Hay No. 1	15.00@18.00
Wheat Hay, fair grade	13.00@15.00
Tame Oat Hay	12.00@15.00
Wild Oat Hay	10.00@12.00
Alfalfa Hay, later cuttings	12.00@14.00
Stock Hay	8.00@10.00
Barley, Ground	31.00@33.00
Rolled	29.00@30.00
Oats, Rolled Feed	34.00@36.00
Bran and Millrun	25.00@28.00
Middlings	40.00@43.00
Linseed Meal, Nominal	37.00@40.00
Cocoanut Meal	22.00@25.00
Alfalfa Meal	22.00@24.00
Cottonseed Meal	35.00@40.00
Sugar Beet Pulp	31.00@32.00
Molasses, Tank, 21.00; bbl.	25.00
Milo Maize	38.00@41.00
Corn Meal & Crkd Corn	38.00@41.00
Scratch Feed	45.00@48.00

GRAIN

Sales on Grain Exchange Sept. 12:

Wheat: Milling, 2.00@2.05; feed, 1.05 @2.65.

Barley: Feed, 1.17½@1.22½; shipping, 1.25@1.30.

Oats: Red Feed, 1.40@1.60.

Corn: California yellow, 1.45@1.50; No. 2 Eastern, in bulk, 1.50@1.57; do, No. 3, White Gyp., 1.75@1.80; Cal. Red Milo, 1.70@1.75.

Citrus Markets

Los Angeles, September 14, 1921.

Shipments

Shipments of citrus fruits to date since November 1, 1920, Southern California: Oranges, 37,020 cars; lemons, 10,502; total, 47,522. To same date last season: Oranges, 28,477; lemons, 7,582; total, 36,059. From Central California to date this season: Oranges, 6,649; lemons, 212; total, 6,861. To same date last season: Oranges, 5,381; lemons, 289; total 5,670. From Northern California to date this season: Oranges, 305; lemons, 5; total, 310. To same date last season: Oranges, 261; lemons, 23; total, 284.

Important to Bean Growers

The handling of beans with a side delivery rake is certainly the most practical and economical way to handle the crop provided the rake used is properly built and properly geared for the handling of beans.

In the ordinary side delivery hay rake the cylinder is speeded entirely too high for beans. When the cylinder runs at a high speed the beans are handled so roughly that a great many are threshed out of the pods and lost. The Thomas Side Delivery Bean Rake is especially geared for the handling of beans. The cylinder moves much more slowly than it does in a hay rake.

Dixon & Griswold at No. 130 North Los Angeles Street have in stock the Thomas Side Delivery Rakes geared especially for beans and also have them in stock geared for hay. They are offering them at a special price of $100.00 each f. o. b. any railroad point in California or Arizona. Your dealer can easily get a Thomas for you at this special price. If there is no dealer in your section you can order a rake yourself by 'phone. The telephone number is 62852 Los Angeles.

LIVESTOCK AT SACRAMENTO

(Continued from Page 299.)

Senior yearling — 1. Ball on Colonel Pride Walker. 2, Azavedo on King Tora Pontiac Prilly. 3, Dolcini on Sir Nase De Kol. 4, McCloud on McCloud Jewel Ormsby Canary.

Junior yearling—1, Geo. Jr. on Dichter Spofford Korndyke Lad 6th. 2, Higdon on King Korndyke Lad Pontiac. 3, Lauchert on Bonita Glista Segis. 4, Ball on unnamed. 5, Christen on Prince Walker Alcartra.

Senior bull calf—1, Geo. Jr. on Republic Spofford Ida Lyons. 2, Holmes. 3, Dolcini on Sir June Acres Aaggie Mercedes. 4, Sierra Vista on S. V. Ormsby Pontiac Goldrop. 5, Palo Alto on Palo Pontiac Farolica.

Bull junior calf—1, Gleason on San Juan Ignaro Burke. 2, Sierra Vista on S. V. Ormsby Aralia Walker. 3, Dolcini on Sir June Acres Alcartra Contentment. 4, Dolcini on Sir June Acres Alcartra Netherland. 5, Holmes.

Aged cow—1, Holmes on Ida Lotta Winnifred Burke. 2, Azavedo on Yuma Princess Alcartra Lass. 3, Geo. Jr. on Juliana Darington of Rock. 4, Geo. Jr. on Snowflake Juliana Fobes of Rock. 5, Azavedo on Clothilde Korndyke.

Three year old—1, Geo. Jr. on Ida De Kol Pearl Lyons. 2, Ball on Prilly Luce Meadmore Segis. 3, Christen on Talmia De Kol Ormsby. 4, Gleason on Stona Alto Pietertje Posch. 5, McCloud on McCloud Parthenia Bonheur.

Two year old—1, Geo. Jr. on Colina Snowflake Korndyke. 2, Higdon on Queen Korndyke Prilly. 3, Geo. Jr. on Lady Dichter Juliana. 4, McCloud on McCloud Bess Bonheur. 5, Azavedo on Bos Butter Girl De Kol Pledge.

Senior yearling—1, Ball on Lady Pontiac Walker Zenobia. 2, Higdon on Charlotte Bonnie Pontiac. 3, Higdon on Ida Lotta Winnifred Burke 2nd. 4, Six Bros. on Hughson Jane Aaggie De Kol. 5, Azavedo on Lady Attica Rag Apple Prilly.

Junior yearling—1, Geo. Jr. on Juliana Dichter Fobes of Rock. 2, Higdon on Dame Korndyke Pontiac Lillith. 3, Kate Stammerjohan on Pietertje. 4, Wm. Stammerjohan on Rag Apple Aaggie Acme. 5, Christen on Talima Hengerveld Glista.

Senior heifer — 1, Geo. Jr. on Doris Nephele Pontiac. 2, Bibens on unnamed. 3, Stella Stammerjohan on unnamed. 4, Palo Alto on Alta Carnation Gertia. 5, Palo Alto on Alta Carnation Pride.

Junior heifer—1, Holmes on unnamed. 2, Loney Stammerjohan on unnamed. 3, Ball on unnamed. 4, Dolcini on June Acres Alcartra Orizaba. 5, Geo. Jr. on Juliana Spofford Korndyke.

Senior champion bull—Dichter Spofford Korndyke Lad 5th. Junior champion bull—San Juan Ignaro Burke. Grand champion bull—Dichter Spofford Korndyke Lad 5th. Senior champion female—Ida Lotta Winnifred Burke. Junior champion female—Juliana Dichter Fobes of Rock. Grand champion female—Ida Lotta Winnifred Burke.

Aged herd—George Jr. Republic. Breeders' young herd—George Jr. Republic. Calf herd—1, Dolcini. 2, Six Bros. Dairy.

Get of sire—1, George Jr. 2, Higdon. 3, Dolcini. 4, Holmes.

Produce of dam—1, George Jr. 2, Higdon. 3, Ball. 4, Ball.

QUESTIONS AND ANSWERS

(Continued from Page 290.)

ly woven muslin. This bag of the arsenate may be shaken over the roasting ears at the time when silk is first forming. Care should be used not to apply too liberally. This has the same effect on the worm which begins eating the roasting ear as it does on the worm when it begins to eat into the sprayed apple.

COMBINATION FARM IMPLEMENT

California ranchers have found almost constant use for various kinds of cultivators, subsoilers and furrowers. J. R. Gardiner, a manufacturer of farm implements at Fullerton and for many years a successful rancher, has been manufacturing a combination of these three implements in one, thereby cutting down the initial cost of a grove owner's outfit. The frame of the implement is made to carry either the cultivator, the furrower, or the subsoiler, the parts being easy to change. A great many California ranchers are operating the Gardiner combination successfully.

WEATHER REPORT

San Francisco, Cal., Sept. 10, 1921.

Stations	Rainfall Wk.	Rainfall Season	Norm.	Temp. Max.	Temp. Min.
Eureka	.00	.01	.41	62	48
Red Bluff	.00	T	.12	96	56
Sacramento	.00	.00	.07	96	54
San Francisco	.00	T	.01	80	53
San Jose	.00	.06	.09	90	46
Fresno	.00	.20	.00	98	60
San Luis Obispo	T	.12	.05	88	48
Los Angeles	.00	T	.00	88	56
San Diego	.00	T	.00	74	61

DISPERSAL

of One of California's Most Highly Esteemed Herds

ELDORADO HERD, Owned by ALEX WHALEY

55 REGISTERED HOLSTEINS 55

Selling at Tulare Sale Pavilion, Tulare, Cal.

Thursday, October 6, at 10 A.M.

Constructive breeding methods as exemplified by official testing, careful selection of breeding females, and unusual foresight in placing at the head of his herd a succession of top notch herd sires, has won for the owner a high standing among the breeders of California, and whenever representatives of the herd have appeared in public sales they have almost always met with high public appraisal.

Now that the entire herd is to be dispersed it affords new breeders an opportunity to buy a class of cattle of excellent qualifications as money makers, high class individuals and of most popular breeding. The sale includes:

MELBA HENGERVELD, the great 30 lb. producing and breeding cow. and her daughter by Sir Veeman Korndyke Pontiac, and granddaughter by King Sadie Vale Idyl Segis. All three of them are due to calve before December 8 to Sir Aaggie De Kol Acme 2nd, five of whose seven nearest dams average 1154 lbs. butter in one year. This family is good enough to add to any herd, and just think of the three calves they will drop shortly!

TWENTY DAUGHTERS OF SIR AAGGIE DE KOL ACME 2ND

ONE out of the 30 lb. junior 4 year old Eldorado Winifred, whose dam is the 32 lb. cow Winifred Hotaling 3d.

ONE out of an 18 lb. 2 year old daughter of the $50,000.00 bull King Segis Pontiac Alcartra.

ONE out of a 27 lb. cow that milked 601 lbs. in 7 days.

ONE out of a 20 lb. 3 year old whose dam milked 627.5 lbs. in 7 days.

TWO out of an 18 lb. granddaughter of Segis Pontiac De Kol Burke.

ONE out of a great 24 lb. cow that was second prize aged cow at this year's State Fair.

OTHERS out of dams with records up to over 23 lbs. butter in 7 days.

AND MANY OF THEM ARE BRED either to a son of the 34 lb. Coloma Beauty Butter Maid or to King Tola Korndyke Pontiac, described below.

KING TOLA KORNDYKE PONTIAC WILL BE SOLD

He is unquestionably one of the highest class young bulls in the state, and is by KING KORNDYKE PONTIAC 20TH, the $12,000.00 son of Miss Valley Mead De Kol Walker, and out of K P Tola the 36 lb. daughter of King of the Pontiacs. If you want a real herd sire take this fellow home with you.

YOUNG BULLS FOR DAIRYMEN

There will be about a dozen young bulls in the sale, many of them sons of Sir Aaggie De Kol Acme 2nd. that should go to good dairy herds.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OLD TUBERCULIN TESTED AND SOLD SUBJECT TO RETEST BY THE BUYER.

Auctioneers
Ben A. Rhoades, Los Angeles
Geo. W. Bell, Tulare

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

Owing to the demands of other business interests, and recent ill health of the owner, Mr. S. O. Walker will make a complete dispersal of his herd of highly bred registered Holsteins.

The breeding of this herd is such as to command attention anywhere, the cattle are in excellent condition, and the herd is mostly composed of young females, including

35 DAUGHTERS OF KING OF THE BLACK & WHITES, many out of A. R. O. dams with records up to over 30 lbs. butter in 7 days.

A 25 POUND daughter of the four times 30 lb. cow Lottie Walker Spafford.

TWO HALF SISTERS TO KING OF THE BLACK & WHITES, one out of a 31 lb. 4 year old daughter of King Segis, the other out of a 23 lb. daughter of King Segis.

Dispersal Sale
70 REGISTERED 70 HOLSTEINS
S. O. Walker Herd
Visalia, Cal.
Tuesday, Oct. 4 at 10 a.m.

A 26 POUND COW due to calve October 12 to King of the Black & Whites.

A 25 POUND granddaughter of King of the Pontiacs out of a 25 lb. 4 year old.

A 25 POUND daughter of the four times 30 lb. cow Lottie Walker Spafford.

A 25 POUND granddaughter of King of the Pontiacs out of a granddaughter of Pietje 22nd's Woodcrest Lad.

HIGH CLASS BULLS

KING OF THE BLACK & WHITES will be sold. He was the first bull whose seven nearest dams averaged over 30 lbs. butter in 7 days, and has one of the largest lists of A. R. O. daughters of any bull on the Pacific Coast. He is ten years old, a quick sure breeder, and sells in excellent physical condition. His service for two or three years in a good herd would justify a substantial valuation on him today.

TWO GRANDSONS OF SIR PIETERTJE ORMSBY MERCEDES, both out of good record dams and both good individuals.

YOUNG BULLS, mostly sired by King of the Black & Whites, and out of some of the best dams in the herd.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; NO TUBERCULIN TEST CERTIFICATES.

TERMS OF SALE: Cash unless arrangements for credit are made prior to sale with the sale managers, California Breeders Sales and Pedigree Co., who will extend terms of one-third cash, balance in three, six and nine months to responsible parties on approved notes.

PLACE OF SALE: S. O. Wakler Ranch, 3½ miles east of Visalia on Mineral King Avenue, then ½ mile south.

Auctioneers:
Ben A. Rhoades, Los Angeles
Geo. W. Bell, Tulare

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

DISPERSAL SALE

37 Registered Holsteins 37

Owned by JOHN SAXER

Modesto, Cal., Wednesday, October 12

This is one of the choicest herds in Stanislaus County, and for type ranks as one of the most attractive in the state. Splendid production records are also present, as well as popular breeding.

COWS WITH OFFICIAL RECORDS up to over 31 lbs. butter in 7 days.

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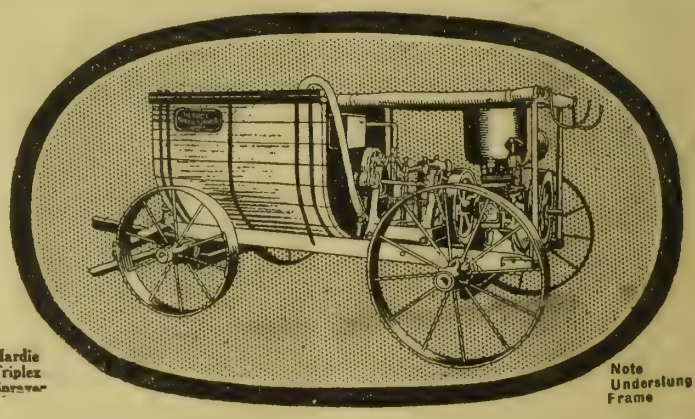

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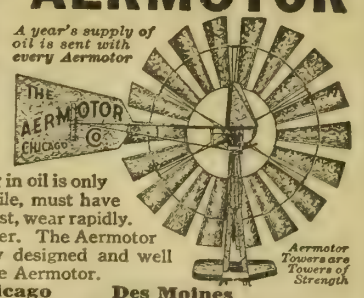

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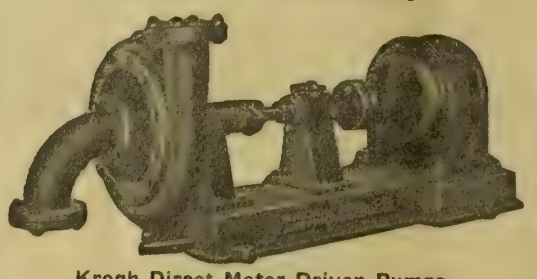

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LVII — September 24, 1921 — No. 13

Know the Game---It Beats Guessing

California leads the world in control of pests affecting agriculture. This state led the nation is agitating for quarantine regulations. Now we are leading in standardization which naturally encourages more perfect pest control.

Information given in this issue of the California Cultivator as to best methods of pest control is general, and perhaps the long time orchardist may have much that is here gathered. But it is placed together in most convenient form. It will prove invaluable and well worth the filing.

For the reader looking for a Royal Road to success in knocking out all pests with one cure-all there will be little help in this issue. For the patient digger after facts we hope it will prove a classic.

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There are insects and insects. There are "insects" that are not insects. We asked Mr. Ryan, horticultural commissioner of Los Angeles County, to help us to separate bugs from beetles, spiders from centipedes, sow bugs from slugs. He suggested that no bug is a beetle, nor the reverse. The old nursery rhyme "Lady bird, lady bird fly away home" correctly locates one of our friends among the insects, but a bug "she" never is and often not a member of the gentler sex. A beetle is this little fellow, not plain, nor simple either it would seem, for the little red and black coat of the species most commonly seen is a gaudy mark and he is well known as a foe to the plant louse.

So what does it matter whether we call him bug or beetle if he does his work well, and how does it help us to get rid of the host of unfriendly insects and "sich," to call them by their right names? Not a great deal, perhaps, except that no two of them are just alike and it takes different kinds of poisons, or clubs sometimes, to kill.

One is much more apt to get the information if he can tell at least just how the damage is done and perhaps what the creature is when writing to the U. S. bureau of entomology, Washington; the University of California, Berkeley; the citrus experiment station, Riverside; the state department of agriculture, Sacramento; the county horticultural commissioner, the county agent, the nearest horticultural inspector, or the California Cultivator. Each will be able to answer inquiries or pass on to other experts who can. One does not need to know the color of its eyes nor its Latin name, but one does need to know whether it is a bug or a beetle.

True bugs obtain their food by piercing the plant with beak or proboscis through which they suck the plant juices, and for practical purposes they are classed as sucking insects. Those which bite and devour the foliage and other portions of plants are known as chewing insects.

Contact sprays, dusts or gasses must be used against the first class, while against the chewing insects internal poisons such as arsenicals are most effective.

In practice some which are not true insects are classed with sucking insects, as red spiders and mites, because they obtain their food in the same or a similar manner and are therefore not susceptible to internal poisons.

Likewise "sowbugs" and "thousand legged worms," though not true insects because they do not have six legs, are classed with the biting insects.

A list of the more common California forms susceptible to contact sprays would include the aphids or plant lice, leaf hoppers, mites, red spiders, thrips and the several scale insects. Arsenicals or other stomach poisons are effective against ants, cutworms, army worms, beetles, caterpillars, codling moth, grasshoppers and many others.

Someone has said that an airplane is nine-tenths operator and one-tenth machine; so it is with spraying. An efficient machine and properly mixed materials are necessary, but unless the application is made at the proper time and a competent operator handles the nozzle, the grower had better hire a small boy with a squirt gun.

To get the sucking insects the spray must reach every part of the tree. Contact spraying means "contact"; high pressure means greater distribution, hence a greater killing.

In applying internal poisons the same principle holds good: it must be thorough. It must be applied when the insect cannot avoid getting it with its food.

Then it is possible to apply poisons in dust. Big power blowers, also the hand or knapsack type, have been perfected and the distribution of a poison, sulphur, or nicotine is made sufficiently economical as to labor to make up for a slight loss in material.

Nor are our pest considerations confined to spraying or fumigating tops of trees and plants. With nematodes, wireworms, woolly aphis, phylloxera, fungous troubles, and on endlessly, there are soil pests. Can we reach these with gasses or chemicals? Anyway, we are most hopeful that with sulphur, carbon bisulphide or certain traps we may yet assure our under-the-surface enemies a warm or suffocating reception. Meantime let us know the game—it beats guessing.

Established 1877 Forty-fourth Year

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and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877

Combined with California Cultivator 1914 Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

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Entered as second-class matter February 12, 1900, at the post office at Los Angeles, California, under the Act of March 3, 1879.

Saturday, Sept. 24, 1921

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If among the more than 40,000 Cultivator's weekly circulation any fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

EDITORIALETTES

At the Panama-Pacific Exposition was a figure in bronze called "The Thinker." Illustrations of this figure have been used in season and out of season, for while there is crudeness in the execution it has a power of suggestion which makes it really fine art. This figure is now in Golden Gate Park.

* * *

An illustration of this figure would have been entirely in order on the cover page of this issue. There is no business which calls for more real constructive thinking than that of farming. It is a case of knowing the game and of eliminating all guessing.

* * *

And yet no form of question comes oftener to the Cultivator trouble-shooting department than that which shows the minimum of thinking before the question was asked. For instance, "How may I kill the bugs which are bothering me greatly." The majority of our growers, of course, either send specimens or definite information as to the plant or animal attacked and the type of insect, but all too often the observation is made that a tree is sickly and needs some attention. "What shall be done?"

* * *

Again, along another line. "My trees are looking sickly. What may I do to the soil to give me good crops?" The Cultivator is here to answer these questions and do its very best to secure help for the inquirer. Give us a foundation to render this service.

* * *

One feature of the fight on injurious insects, which is given hardly as much attention as it deserves, is that of biological control. By biological control we mean bug eat bug. Harry S. Smith of the state department of agriculture gives a most interesting account of one of the beneficial insects which is making life miserable for the black scale. Mr. Smith gives to this insect place of honor as most important parasite introduction of the past year. But we all may recall many other friends of California farmers which have been introduced through the efforts of the U. S. department of agriculture, the state board of horticulture, the horticultural commission or the present department of agriculture.

* * *

To Alexander Craw is doubtless due the honor of being the first to suggest this method of fighting fruit tree pests. Fortunately, one of the first efforts in this direction resulted in such a complete success than continuance of the work has been made possible. The life of the citrus industry was threatened by the cottony cushion or fluted scale, Icerya purchasi. Orange trees were dripping with honey dew and the offal of these pests. Sprays failed and gas fumigation was not yet a success, though it was already dreamed of. But Albert Koebele of the U. S. department of agriculture saved the day when he searched out and sent to the state vedalia cardinalis. It is probable there will never again be so complete a success as was secured by this little predacious insect, but it is felt that so far as black scale is concerned there have been sufficient insect enemies introduced that the time may be near when spraying or fumigation of that scale may not be necessary.

* * *

Speaking with George Compere recently as to the work of Albert Koebele, he remarked: "Do you know, California fruit growers would honor themselves by erecting some memorial in honor of his work."

* * *

And George Compere has done some scouting about the world, gathering in the bugs which should eat the other bugs. He is the oldest in service of the quarantine division of the department of agriculture. He began the work under Alexander Craw considerably more than a third of a century ago. It was he who brought to the attention of California fruit growers at the Stockton convention in 1910 the information that the Australian fruit fly was infesting the fruits of the Hawaiian Islands. This information made possible, even necessary, more stringent quarantine regulations which have made today's quarantine service so effective.

* * *

Speaking of the quarantine service: The other day we were in the office of George Compere at the head of the service in San Francisco. A gentleman entered, also in the service of the state, and he confided to George that he had a friend whose life could only be saved by a diet of papaya, and particularly one grown in Hawaii. Hawaiian papayas, by the way, are contraband. This particular fruit is relished by the Australian fruit fly as well as by some invalids in America. Some of these fruits have been found which were a mass of wriggling "worms." Notwithstanding this we were assured that this case was not the only one in which representative citizens have endeavored to "slip one over" on the quarantine service and get by with the contraband stuff. Compere was quick to come back with the suggestion that the greatest need on the part of all the invalids of San Francisco could not suffice to get one papaya through the Golden Gate.

* * *

One feature of value in impressing the need of thorough quarantine is the fact that California's alfalfa crop, of a value of some $7,000,000, grown on nearly 1,000,000 acres, will be seriously menaced if the alfalfa weevil ever gains access to the state. A measure of control may be secured by disking, dragging and spraying. While it costs only $2 after each cutting to spray each acre, the cost for 1,000,000 acres means a heavy addition to production costs, in other words, $2,000,000 added to our taxes, not annually, but for each cutting. Strength to the arm of our officials along our eastern border.

* * *

Beside the six-legged, there are some four-footed pests. Jacobsen is after them. The last session of the state legislature appropriated $50,000 to fight coyotes, bobs, mountain lions and a few other varmints. This money makes possible employment of 12 men working under the direction of Mr. Jacobsen. Some of them are employed by the U. S. biological survey; others by the state, these two forces often cooperating with the county in securing additional funds. Boards of supervisors are not only willing, but anxious, to cooperate with state and federal forces. This is especially true in sheep growing counties. This is the first really united effort which has been made to control these larger pests of the farm.

* * *

The greatest advancement in spray equipment during the past few years has been in securing more powerful spray pumps giving higher pressure. This was first called for by the spray gun. In order to be effective pressure sufficient to carry to greatest heights of trees was necessary. The pump manufacturers have met the need, and many pumps put up today are able to maintain a 300 pound pressure whereas formerly 200 to 225 was considered sufficient.

In fumigation the gas tight tent has come. "It is a complete success and makes fumigation more economical." "It is not a complete success for, as we proceed, we are learning that reduction in dosage is not possible, at least to the extent we had hoped." Take your choice from these two opinions, which may be had from some of our best fumigators.

* * *

Fumigation kill has not been as complete as desired, and today some sections are changing from liquid gas to the old-time pot method or fumigation machine work. In other sections the use of liquid gas is increasing. This seems to be a transition period; another year should show material advance in fumigation lines.

* * *

At the recent state fair there were five cheeses exhibited. Each one was made from 200 pounds of milk. The first contained five per cent of butterfat. It weighed 25.8 pounds. The next was made from 200 pounds of four per cent milk; it weighed 21.6 pounds. Others: 3 per cent milk, 16.6; 2 per cent, 12.5; skimmilk, 9 pounds. Bear in mind the total weight of the milk in each case was the same. It is to be noted that the butterfat had the capacity of carrying much more than its own weight into the cheese. We do not know how this is accomplished, but there is sufficient in these figures to show that the richer milk makes for greater profit and certainly greater satisfaction on the part of the consumer, hence increased consumption.

ACKNOWLEDGMENT

The California Cultivator owes much to many experts for assistance in compiling formulas and list of pests infesting many host plants, given in the following pages, especially to Prof. E. O. Essig who, when he was horticultural commissioner of Ventura County in 1909, aided materially in arranging the first pest fighting issue; to H. J. Ryan, horticultural commissioner of Los Angeles County, who has given much of his time in revising and suggesting changes, to Bean Spray Pump Co., Roy E. Campbell, U. S. D. A., Lee A. Strong of state department of agriculture, Fred K. Howard and A. W. Morrill.

Unfortunately, much of the material in hand for use in this issue is necessarily held over until the issue of October 8. This includes a large number of engravings, many of which were secured from the state department of agriculture.

THE SAN FERNANDO FAIR

By Ernest Braunton

THE fair is in full swing at San Fernando and on the day of writing (Tuesday) the attendance was very good, more than three times that of the first day. Three huge tents divide the indoor exhibits into soil products, machinery and livestock, the latter from pigeons and chickens to horses, cattle, hogs, sheep, goats and everything that contributes to the human food supply, comfort or companionship.

In the "tent of crops" may be seen everything that California can grow in the soil, beneath the soil or above the soil, for San Fernando Valley grows it all through the alphabet from alfalfa and avocados to watermelons, yuccas and zinnias. Every district and town has its booth in which is displayed the earth's best. The more distant Antelope Valley has a fort-like booth built of baled alfalfa and filled with fruits, vegetables and grains. As one enters the huge tent this fodder fort confronts him, and on the right Lankershim commences with 24 boxes of apples, followed by pears, other fruits, vegetables, grains and so on to the end of possibilities, and where this ends another town or section attracts and interests the visitor until he finds himself back at the fort. Then he has to make the rounds of the interior booths, of which there are scores.

The department of public service of Los Angeles has a miniature reproduction of municipal power plant No. 1, with plane grounds about it. But the best, most educative feature, is the booth of the Los Angeles County horticultural commission. To list and describe all therein contained would require a page, but everything there displayed should be seen by each tiller of the soil and by all interested in agricultural problems. Beneficial and injurious insects, animals and reptiles, diseases affecting trees, plants, fruits and vegetables, pernicious weeds, falsely and poorly packed products, with illustrations and examples of how things should be done rightly is an exhibit that Commissioner Ryan may well be proud of.

California Cultivator

Vol. LVII, No. 13 | Los Angeles, September 24, 1921 | One Dollar Yearly

Quarantine on the Coast

By Lee A. Strong

PLANT quarantine enforcement has been brought to a higher degree of efficiency and popularity the past two years than any similar period in the history of such work.

The farmers, nurserymen, florists and fruit growers of California are and should be intimately concerned and in sympathy with the work and developments of the three major organizations having for their function the protection of the agriculture and horticulture of California, the West and the United States, namely: The bureau of plant quarantine of the California state department of agriculture, the western plant quarantine board and the federal horticultural board. The achievements of these organizations are the more apparent when we consider the problems which have arisen and which have been satisfactorily cared for during the period mentioned, for at no time have conditions called for a greater exercise of judgment and efficiency.

With the discovery of the alfalfa weevil in Nevada, a few miles from California, the California department of agriculture was faced with the necessity of adopting more comprehensive measures for California's protection. The weevil having crossed what had been considered almost impassable natural barriers in the form of desert and mountain ranges, it was immediately realized that quarantine regulations which had been adequate to control commodities carried by common carriers were inadequate to cope with the situation brought about by the presence of the weevil in Nevada. Director G. H. Hecke at once wrote a new quarantine order which was promptly signed by Governor Stephens. This order provided authority to carry on the inspection of the personal belongings of automobile tourists, recognized as being the greatest danger in the possible introduction of the weevil into California. Subsequent inspections of automobiles have, in the finding of many species of insects, among them live alfalfa weevil, demonstrated the wisdom of inaugurating this work and the importance of continuing it.

With the resumption of foreign trade and foreign travel following the war the plant quarantine work at the maritime ports has increased by leaps and bounds. More agricultural products are offered for entry and more passengers arrive from ports in other countries where fruit flies and many other pests exist. The finding of fruits from Hawaii infested with Mediterranean fruit fly, oranges from Mexico infested with the Mexican orange maggot and citrus from the Orient infected with citrus canker are not rare but common occurrences.

The western plant quarantine board, formed at the fruit growers' convention at Riverside in 1918, held its annual convention in British Columbia in June of this year. The membership is made up of the quarantine officers of the 11 western states, Hawaii, British Columbia and Lower California. The object of the organization is the uniform enforcement of quarantine regulations for the protection of the agriculture of the west and the promulgation of just and equitable quarantines after full and thorough joint consideration. Under the leadership of G. H. Hecke, who was chairman of the board the past two years, a more practical and uniform procedure in quarantine matters has been developed throughout the west.

On June 1, 1919, Quarantine No. 37, promulgated by the federal horticultural board, became effective. The object of this quarantine was to correct a condition which had for years been a menace to the agriculture and horticulture of the United States. Until Quarantine No. 37 became effective the United States was used as a dumping ground by all the foreign shippers of plants and nursery stock who had inferior and infested stock to dispose of. No. 37 prohibited the entry of all stock which could be produced in the United States and regulated the entry of novelties, necessary propagating stock, etc. In the early days of the quarantine much criticism was directed at the board, but after a two-year trial, the wisdom of the action of the board has been proven and those in the United States who are truly interested in the development of agriculture and horticulture realize that a long step forward has been taken in practical protective measures. California is directly benefited by close cooperation with the federal horticultural board, the state department of agriculture enjoying the full and hearty support of the board.

A Phase of Biological Control

By Harry S. Smith, State Department of Agriculture

I HAVE been asked to write a brief article on "The Greatest Recent Advance made in Biological Control of Pests of Farm and Orchard Crops." Since the article apparently is to refer to California I have no hesitancy in designating for this honor the introduction into California of the black scale parasite, Aphycus lounsburyi. As everyone connected with the citrus industry knows, the black scale is the most costly pest of citrus with which we have to deal. During the past season there was expended in Los Angeles County alone for fumigation nearly a million dollars, the greater part of which was directed against this pest. Any method of control, therefore, which will tend to reduce this enormous cost is of greatest concern to the growers. J. D. Culbertson, of the Limoneira Company at Santa Paula, where the original colonization of aphycus took place, stated recently at the Lemon Men's Club that the introduction of this parasite had reduced the cost of the black scale control on their properties in 22 months from $10,227.71, the cost for 1919, to practically nothing for the present season. From there the parasite has been distributed rather generally throughout Ventura County and other ranches are now beginning to show parallel cases of effective work by this valuable insect. In fact, it would not be at all surprising if fumigation for the black scale in the larger part of Ventura County would soon be a thing of the past.

Beside the state department of agriculture and the Limoneira Company, several other organizations were quick to recognize the possibilities of aphycus in reducing the cost of black scale control. The Santa Paula Citrus Association several months ago built a model insectary and has gone into the business of propagating and distributing this parasite extensively on the properties of their members. The Ventura County horticultural commissioner has also made extensive colonizations in various parts of his county. The California Fruit Growers' Exchange during the past season has distributed in southern California approximately 200,000 of the parasites, the colonies being located in practically all of the citrus districts. The Los Angeles County horticultural commissioner has also taken part in the distribution work and several local associations are contemplating the building and operation of insectaries for service to their growers. Thus it will be seen that the aphycus is to be given all necessary attention in the way of getting it established throughout the citrus growing areas of southern California.

The introduction of this parasite from Australia and South Africa by the state department of agriculture is without question the most important event in biological control work in recent years. Already it has been instrumental in the saving of many thousands of dollars and what its future will be no one can foresee, but it is bound to become a factor of greatest importance in reducing the cost of production of citrus fruits in California.

State and Federal Quarantine

By C. B. Messenger

THE farmer, whose failure of crops has been traced back to its source and found due (as it so often is), to insect or fungus pests, may wonder if there are any in the world which he has not already had to contend with. A visit to one of the quarantine stations at San Frencisco, Los Angeles or San Diego will show him that there are still pests he knows not of and of which we hope he never will know. Another line of defence (a rather thin one, we admit) is maintained in the mountains along our eastern border to keep out the pests from other states, and while we feel we have some of the worst pests the earth has yet produced, many others are declared to be infinitely more destructive. For instance it has been stated that the Australian fruit fly, if it once gains foothold in California orchards, will mean practically the abandonment of fruit growing. Such surely will be the case unless American ingenuity can devise means for its control. State and federal quarantine officials have fullest appreciation of this fruit tree menace and the watch is kept day and night at ports of entry.

When a vessel from a foreign port passes the Farallones quarantine officials, whose offices are in the Ferry Building, are notified of its approach, when it passes through the Golden Gate the quarantine officials go to the dock where the customs launch is waiting to take them to the quarantine anchorage near the station on Angel Island. They are not admitted to the incoming vessel until the port doctor has made examination of the vessel and the yellow, or quarantine, flag is lowered. Then both customs and plant quarantine officials begin to make their examination of pantry, galley, cold rooms, staterooms occupied by passengers, and, finally, of the baggage of every passenger. Every vessel has its passenger who is bringing home some choice foreign fruits, plants, or some other possibility of pest introduction. Many have plants or fruits not contraband, and in any case, much explanation is necessary in order to save hard feelings but if confiscation is necessary the inspectors are relentless in the hold they maintain on the contraband.

The quarantine offices have for many years been gathering in specimens of fruit flies, beetles, weevils and fungous troubles without number, and California orchardists may well feel satisfaction in knowing they are safely impaled on a pin in the collectors' cases in-

(Continued on Page 322.)

Agricultural News Notes of the Pacific Coast

Northern California

Chico state normal school opened September 12.

"Colusa County Day and School Day" at the Arbuckle almond fair September 30.

The Hayward Poultry Producers' Association held its quarterly meeting September 10.

A shipment of Tokay grapes was sent last week to Liverpool, and another to Havana.

Report has been received that the supreme court has reversed river injunction asked by Antioch.

Farm center meetings in Shasta County: Fall River, 4; Mountain, 25; Millville, 27; Palo Cedro, 28.

Arbuckle is preparing for its almond show beginning tomorrow, Sept. 28, and lasting to October 2.

The 1920 prune crop has been practically cleaned up, says Manager Reynolds of the Chico plant of the C. P. C.

Manager Risser of the California Vegetable Union says that the sweet potato crop will be very short this season.

In the poultry, pigeon and pet stock show at the state fair there were 1688 entries and at all times a crowded exhibit room.

C. R. Thomas is in charge of the California National Livestock Association Show to be held at San Francisco October 22-30.

Foresters are examining the cattle ranges near Salmon Forks in the Klamath forest. Rangers' headquarters are at Sawyer's Bar.

Tehama County farm center meetings: Liberal, September 22; Bowman, 24; Los Molinos, 26; Directors Red Bluff, 24, 10:30 a. m.

The El Dorado County farm bureau exchange is successfully operating a fruit evaporator at Placerville and a meat packing plant at El Dorado.

A wonderful showing of goats was made at the state fair. Goat's milk was third at the booth of the Central California Milk Goat Breeders' Association.

The Poultry Producers of central California in reporting July shipments find that there were 42 per cent more shippers than during the same month last year.

Frank W. Morris of Woodland was re-elected president of the California Holstein-Friesian Association at the annual meeting held at Sacramento during the state fair.

Nearly 3000 cattlemen of Humboldt County gathered at Fortuna Park September 3 for their annual meeting and picnic. There were many visitors from Trinity County.

Alameda County expects to harvest its largest sugar beet crop amounting to 40,000 tons. The Alvarado mill expects to handle 100,000 tons shipped in from other sections.

President Inman of the Pacific Rice Growers says that the general harvest in the Sacramento Valley will commence the last of September. 140,000 acres will be harvested this season.

Guernsey Breeders of California held their annual dinner at Sacramento state fair week. W. H. Saylor of San Francisco was chosen president and D. O. Brant of Owensmouth secretary-treasurer

Central California

There is a strong eastern demand for prunes.

Deer are reported to be plentiful in the Sierras.

Watsonville is planning another big apple show in October.

The picking of Bellflower apples has begun in the Watsonville district.

A new cheese factory is to be located at Oakdale, Stanislaus County.

There will be a farm bureau hog auction sale at McFarland September 30.

Fresno County fair opens next Monday, September 26, and closes October 1.

Tourist travel to Inyo County has been heavier this summer than ever before.

Kern County won third for mineral display at the state fair at Sacramento.

Watsonville, Santa Cruz County, had shipped to date of September 10 468 carloads of fruit.

The chamber of commerce of Lindsay, Tulare County, is planning a small farms campaign.

There was an attendance of over 500 at the county farm bureau picnic at Merced, September 7.

The Elkhorn Ranch of Watsonville, Santa Cruz County, brought home a number of blue ribbons from the state fair.

Stanislaus County reports its grape crop about 60 per cent that of last year, the decrease being due to severe frosts.

The Kerman chamber of commerce is working to secure a packing house of the Associated Raisin Company at Kerman.

The California Alfalfa Growers Exchange reports many sales of chopped alfalfa for fertilizer at $20 a ton grove delivery.

The Kerman News reminds raisin growers that it will soon be time to clean up the old paper drying trays in the vineyards.

A well sunk by the Simon Newman Company in the foothills west of Newman, Stanislaus County, has found a good flow of water.

15,000 acres of new vineyards have been set out in Merced County during the past few years, most of it in the Livingston district.

One effect of the carload shipments of figs to New York has been the strengthening of the San Francisco market. Fig shipments will continue throughout the month.

The Farmers Union of Stanislaus County held its annual picnic at Tulare on September 17. Need of organization of the melon growers was the principal subject discused.

The West Joaquin irrigation district is conferring with Miller & Lux as to organization of a district under the new water storage act to include all the land of the corporation along the San Joaquin River with the proposed West Joaquin district.

Governor Stephens has named W. P. Boone of Dinuba and D. J. Coyne of Los Angeles as executive directors to serve with State Engineer W. F. McClure in the administration of the new California water storage district act.

Southern California

Paderewski has sold his Rancho Ignacio at Paso Robles.

Shipment to San Francisco of Coachella dates sold at 45 cents a pound.

Yucaipa Valley, San Bernardino County, has begun carload shipment of apples.

The Southern California farm bureau egg laying contest begins at Pomona October 1.

San Dimas is shipping about two carloads a day of Valencias and three of lemons.

Yucaipa Valley, San Bernardino County, will hold its annual apple festival Oct. 7-8.

Orange County walnut packing houses are being made ready for the packing season.

Grapefruit growers of Imperial Valley are planning to organize a marketing association.

The cotton gin at Seeley, Imperial Valley, will open within a few days on Pima cotton.

Oxnard bean growers say that their bean fields have suffered somewhat from hot weather.

The Walnut Growers Association will meet in Los Angeles September 28, when prices will be discussed.

The National Orange Show at San Bernardino has received $1,547.50 as premium money from the state allotment.

The annual meeting of the Los Angeles County farm bureau will be held at Ganesha Park, Pomona, September 28.

The Imperial Valley Vegetable and Melon Growers Association, is launching a drive to increase its membership.

Manager Thorpe of the California Walnut Growers Association says the crop will be about the same as that of last year.

The San Bernardino Farm Loan Association expects an allotment of funds from the federal land bank at Berkeley some time this month.

The Palo Verde chamber of commerce is laying special stress in its advertising on the value of that section for dairies and vineyards.

Large quantities of dry orange peel are used in the manufacture of tobacco products, especially plug tobacco. Much also is used in mince meat.

The Imperial and Coachella Valley irrigation districts recently held a joint meeting to investigates the Boulder dam and all-American canal project.

The management of the Southern California fair to be held at Riverside, October 11-16, announces that more than 1500 birds will be entered in the poultry show.

Farm bureau center meetings will be held in Los Angeles County at Burbank, September 26; Littlerock, 27; annual meeting, Pomona, 28; Del Sur, 28; Downey and Glendora, Oct. 3; Alhambra, 4; Zelzah, 5; Lankershim, 6; San Fernando and Whittier, 7.

Alfalfa growers in the Imperial Valley have shipped nearly 100 carloads of alfalfa to San Diego, and plans are now under way to make water shipments by way of Panama to Eastern cities where they expect to get prices high enough to cover charges for the long transportation.

The Coast and General

Northern Arizona reports light frosts.

Marion County, Oregon, will harvest an 800 ton crop of flax this season.

Alfalfa fields in the Yuma Valley of Arizona are ready for a second cutting for seed.

Efforts will be made to hold a poultry show at Phoenix this winter, probably in December.

A Salem, Oregon, concern has contracted for sale of 150,000 pounds of dehydrated pumpkin.

Frosts in April and May and drouth in June have practically destroyed the fruit crops in Holland.

The Fruit Growers Association of Eugene, Oregon, has packed over a million pounds of cherries this summer.

The dairy department of the Oregon agricultural college is exhibiting 34 head of dairy cattle on the fall fair circuit.

The state fair of Arizona is not to be held this year, owing largely to the fact that the mines of the state are for the most part inactive.

Seven hundred miles of Maricopa County, Arizona, roads were graded after the rain of the latter part of August. Caterpillar tractors were used.

During the high water due to heavy rains the members of the Salt River Valley Water Users Association were served water free of charge.

The Prescott national forest reserve in Arizona is sending out notice to all permittees, extending the time for payment of grazing fees to December 1.

Additional evidence of increased interest in dairying in Arizona is the purchase by an Arizona breeder of the pure bred Guernsey bull, May Fly of Beaver Ridge.

The harvesting and processing of sea weed has become an important industry in Holland. Shipments are made to Belgium, England and France and occasionally to the United States.

Several hundred bales of No. 2 Pima Egyptian cotton have been sold recently at 26 cents a pound. Cotton dealers believe that the demand is likely to increase to an extent that will open up the market within a short time.

The Arizona livestock sanitary board is urging stockmen to vaccinate against blackleg, claiming that the recent heavy rains which have changed conditions from scant feed to one of plenty, make favorable spread of the disease.

Very heavy rains throughout a good portion of northern Arizona during the last 10 days of August have greatly improved range conditions and insured adequate stock water until the winter rains come. Livestock losses from now on should be small.

A poultry association has been formed in Pinal County, Arizona, known as the Florence Poultry Association. Meetings and culling demonstrations are being held throughout the Florence and Casa Grande Valleys. It is claimed that poultry products have created more wealth in the Casa Grande Valley than any other single product.

Poisons and Preventives for the Ever Present Pests

FUNGICIDES

1. Commercial Bordeaux Mixture

Several preparations of this sort are on the market in the form of a paste or dry powder to be diluted with water. Objection is sometimes made to these preparations that they will not remain in suspension in water as well as the home-made Bordeaux mixture, but some of them are probably as good or better than the average mixture prepared on the ranch. The commercial preparations are slightly expensive but more convenient for use, and are especially of interest to the small grower.

2. Bordeaux Mixture

The formula ordinarily used, the 5-5-50, is entirely harmless when the plant is dormant. It may also be used on some growing plants; others it will kill or greatly injure. It may be used even stronger than the formula given when the plant is dormant, but these proportions are effective with most fungus troubles. By the 5-5-50 formula is meant:

(a) Copper sulphate	5 pounds
Stone lime	5 pounds
Water	50 gallons

The weaker solution is

(b) Copper sulphate	3 pounds
Stone lime	5 pounds
Water	50 gallons

If hydrate of lime is used add one-fourth more.

To mix, dissolve the copper sulphate with water in proportion of one pound of sulphate to sufficient water to make one gallon of solution for each pound of sulphate used. The stone lime may be slaked and dissolved in water in the same proportions as the sulphate. This gives convenient stock solutions, every gallon of which contains one pound of lime or of sulphate. To make the mixture from these stock solutions take, say, for the formula (a) above, five gallons of the lime solution which will contain five pounds of stone lime and five gallons of the sulphate solution which will contain five pounds of copper sulphate. Five gallons of each of these two solutions may now be mixed with water by pouring simultaneously through a strainer into water sufficient to make 50 gallons. Do not mix the solutions before pouring into the water.

3. Bordeaux Paste

The best cure for gum disease.

Bluestone	1 pound
Fresh burned lime	2 pounds

Dissolve the bluestone in three quarts water, using wooden or earthen vessel, by hanging it in a sack near the top of the water; slake the lime in about three quarts water. Stir together when cool, making a mixture about the consistency of whitewash. Apply with a brush. May be applied to healthy bark as a preventive. Mix fresh each day or two.

4. Bluestone Copper Sulphate

A soluble compound of copper, the raw material for the preparation of most other compounds of copper. This cannot be used on foliage. For dipping grain use:

(a) Bluestone	1 pound
Water	4 gallons

Dip for 3 minutes. Follow by dipping in:

(b) Quicklime	1 pound
Slaked in water	10 gallons

5. Bluestone for Wash Water

Bluestone	1½ pounds
Water	1000 gallons

6. Sulphur

For dusting upon plants for the control of surface mildew, red spider, or other parasites, the fineness of the sulphur is an all important consideration. Flowers of sulphur, the finest and fluffiest grade of sublimed sulphur, has been heretofore recommended for application as a dust. At present, however, there are upon the market several brands of extremely finely ground sulphurs which are finer than the best grade of sublimed sulphur and no more expensive. Some of these sulphurs, which have been specially prepared for dusting, are ground to pass a 200-mesh bolting cloth. These are apt to cake or clog the dusting apparatus. If three parts of sulphur are thoroughly mixed with one part of hydrated lime, kaolin, or other inert powder, these difficulties may be avoided.

7. Corrosive Sublimate (Mercuric Chloride)

Mercuric chlordie (corrosive sublimate) is used for treating seed potatoes and cabbage seed for diseases. It may be purchased at drug stores in the form of tablets costing about 25 cents for 24. Dissolve two large tablets in a quart of water to make a 1 to 1,000 solution. For larger quantities use 2½ ounces to 15 gallons of water. Corrosive sublimate is a deadly poison. It attacks metals and therefore must be used only in a wooden, glass, or earthenware vessel.

8. Formaldehyde (Formalin)

Formaldehyde (formalin) is used for treating seed potatoes, seeds, and soil, to prevent diseases. This is a clear solution of 40 per cent formaldehyde gas in water, which retails at about 50 cents per pint. It is very irritating to the eyes and to cuts, but not poisonous. It does not attack metals. Use 1 teaspoon to a teacup of water, 1 ounce to 2 gallons of water, or 1 pint or pound to 30 gallons of water (for potatoes and onions). It is not an insecticide.

CONTACT INSECTICIDES

The lime-sulphur wash is usually considered an insecticide. It is, however, an excellent fungicide, though where a fungicide only is desired Bordeaux is usually preferred. At full strength it may be used only when trees are entirely dormant.

9. Commercial Lime-sulphur Solution

The growers of the state are being supplied with concentrated commercial lime-sulphur solution of good quality and at reasonable prices. The great bulk of this important pest remedy used in the state is therefore of commercial manufacture, testing between 32 and 34 degrees Baume. It is only necessary to dilute with water before spraying.

For spray on dormant trees dilution of commercial solution is usually at the rate of 1 part commercial mixture to 9 parts water. As a summer spray or when used on trees in full leaf use at rate of 1 to 33.

10. Home-made Lime-sulphur Solution

Stone lime	50 pounds
Sulphur (sublimed or powdered)	100 pounds
Water to make	50 gallons

Heat in a cooking barrel or vessel about one-third of the total volume of water required. When the water is hot add all the lime and at once add all the sulphur, which should previously have been made into a thick paste with water. After the lime is slaked another third of the water should be added, preferably hot, and the cooking should be continued until a clear orange colored solution is obtained (usually 45 to 60 minutes), when the remainder of the water should be added either hot or cold as is most convenient. The boiling due to the slaking of the lime thoroughly mixes the ingredients at the start, but subsequent stirring is necessary if the wash is cooked by direct heat in a kettle. After the wash has been prepared it must be allowed to settle and then be strained through a fine sieve as it is being run into the spray tank. The resultant product is a concentrated solution of lime-sulphur, which should be diluted about six times with water for a winter spray.

11. Sulphur Compounds

For various reasons it is often desirable to mix sulphur and water and apply to plants as a spray. Sulphur, however, is not easily wetted with water and it is a difficult matter to make a uniform mixture of the two. It has been found that a number of substances, soap, glue, dextrin, etc., when mixed with water and sulphur, have the property of counteracting the natural aversion of sulphur to water. Certain of these substances have been used in the preparation of commercial sulphur pastes. These commercial pastes, as now manufactured, contain from 45 to 50 per cent of sulphur in a very finely divided condition, the remainder being water and one of the substances mentioned above. The effect of these pastes is that of dry sulphur. The usual strength to use is:

Commercial sulphur paste	8 to 21 pounds
Water	100 gallons

12. Resin Wash

Resin wash is used extensively as a dip for nursery stock and as a spray for young citrus trees. It is an effective scale killer but is not recommended for use when a crop is on the trees, as it has a tendency to stain the rind and spoil the appearance of the fruit.

Commercial resin wash may be purchased or it may be made according to the following formula:

Resin	20 pounds
Caustic soda (76 per cent)	6 pounds
Fish oil	3 pounds
Water	100 gallons

Put resin, lye and fish oil, with sufficient water to cover them well, into a large iron kettle and heat until all are well mixed and thoroughly dissolved. Add cold or hot water to make when finished 100 gallons of spraying material. This is one of the oldest sprays and very adhesive.

13. Kerosene Emulsion

Kerosene or petroleum distillates are often used most effectively. There are conditions where greatest care must be observed. For instance, on excessively hot dry days there is danger of either tree or fruit injury. Some experiments with these oils have appeared almost foolhardy but at the same time have accomplished results. For instance, in the California Cultivator of March 22, 1919, page 409, Mr. Calkins referred to spraying pure kerosene over trees infested with woolly aphis and pouring over a quart of the oil about the stripped roots and covering immediately with earth. In citrus orchards especial care must be observed during the hot weather. In the form of emulsions the distillate or low grade kerosene sprays are safer but even then do not allow large quantity to run down trunk and saturate the bark.

Kerosene	15 gallons
Liquid soap	¾ gallon
(Or hard soap)	4 pounds
Water	200 gallons

If liquid soap is available, it is preferable to hard soap, since no heating is required. Hard soap, preferably fish oil, is cut in thin slices and dissolved in hot water. The soap is placed directly in the spray tank with 10 to 15 gallons of water or more (the exact amount is not important), and then the engine is started. The oil is now added slowly, and the materials are emulsified by being run through the pump under pressure. After a few minutes the rest of the water may be added, and the spray is ready to apply to the trees.

14. Crude Petroleum

The use of crude petroleum is almost entirely limited to the winter spraying of deciduous trees when the buds are entirely dormant. It is generally applied from November to February. The crude oil emulsion is especially recommended for black scale (Saissetia oleae), European fruit Lecanium (Lecanium corni), European or Italian pear scale (Epidiaspis piricola), cherry scale (Lecanium cerasorum) and other scales infesting deciduous fruit trees. It is practically the only spray treatment which has been effective against the European or Italian pear scale and, to a certain extent, will destroy the winter eggs of many of the aphids, red spider, and some of the defoliating caterpillars.

When crude oil is thoroughly applied it sometimes penetartes the fruit buds to a considerable extent, some of which may be injured and even killed. The great majority of the buds are not injured, however, but appear to be stimulated to a more vigorous growth, producing a character of foliage which withstands attacks of diseases. It is good practice, especially in dry seasons, not to apply crude oil emulsion until there is an indication of the swelling of the buds.

A natural crude petroleum, testing about 23 degrees Baume, is preferred as it contains some of the lighter and more penetrating oils. Heavier crudes than this have given satisfactory results, even those testing 18 degrees and even lower. Residuum oils (the residue of crude petroleum after the lighter portions have been distilled off) can be used if natural crude oil is unobtainable, provided their content of asphaltum is not too high to prevent their emulsification.

Water	175 gallons
Liquid soap	3 gallons
Natural crude petroleum (21-24 degrees Baume)	25 gallons

Partly fill the spray tank with water, add the liquid soap, agitate thoroughly for one minute, add crude oil and continue the agitation, while running in the remainder of the water. If liquid soap cannot be obtained, use 20 pounds of fish-oil soap dissolved in 10 gallons of boiling water to which 3 pounds of caustic soda or lye have been added. To kill moss or lichens on fruit trees add 2 pounds of caustic soda or lye to the formula.

During the spraying operation this emulsion should be thoroughly agitated and great care taken to wet all of the twigs. From 8 to 10 gallons should be used on a tree.

15. Distillate Emulsion and Tobacco Extract

Water	12 gallons
Fish oil soap	30 pounds
Distillate (32 degrees-34 degrees Baume)	20 gallons

The above emulsion is prepared in the ordinary way as a stock solution. For use in the orchard dilute 1 to 20 parts of water. To every 200 gallons of this diluted spray add 1 pint of tobacco extract containing 40 per cent nicotine, or about 3½ gallons of tobacco extract containing 2¾ per cent nicotine.

16. Nicotine Sulphate

Nicotine sulphate is a popular spray for the control of aphids on all sorts of plants. It is efficient and safe.

The following nicotine sulphate formula is recommended for aphis on truck crops:

Nicotine sulphate (40 per cent)	⅜ pint
Soap (dissolved)	2 pounds
Water	50 gallons

This gives 1 part of nicotine sulphate to 1000 parts of water. On some plants with smooth foliage more soap will be needed. If the spray draws together in drops and leaves part of

COMMERCIAL SPRAYS ARE GOOD AND ECONOMICAL

We call attention of users of sprays, dusts, or gases to those which are commercially prepared. Many of the largest users have found these mixtures, compounded by experts in chemistry, more effective and often more economical than the home made. The grower may depend on these tested and proven mixtures, many of which have been on the market for years.

The formulas given in this issue of the California Cultivator are old and tried and have been found most effective. Most of them are for mixing on the farm or in the orchard when ready to use. They are given so that the producer who may not be within reach of ready-to-use commercial mixtures still has information at hand to guide him in the use of simple chemicals

the foliage dry more soap should be added.

COMBINED INSECTICIDES AND FUNGICIDES

Owing to economy of application of combined insecticides and fungicides, Bordeaux is sometimes mixed with acid lead arsenate, basic lead arsenate, Paris green, concentrated tobacco preparations or sulphur. Lime-sulphur solution may be combined with basic lead arsenate, tobacco infusions or concentrated preparations. There are likewise antagonisms between other chemicals. This whole subject has been fully treated in Circular 195, published by the experiment station, Agricultural College, Berkeley.

17. Arsenate-Sulphur

(a) Acid arsenate of lead	8 pounds
Milled or atomic sulphur	5 pounds
Dilute Bordeaux mixture to make	100 gallons

Where apple scab is not a factor use water instead of Bordeaux.

First spraying, to be applied just as the blossoms are falling or in full bloom, according to locality.

Second spraying: apply ten days to two weeks after the first spraying.

(b) Neutral arsenate of lead	6 pounds
Milled or atomic sulphur	3 pounds
Water	100 gallons

Third spraying. Repeat the second spraying formula in about three weeks.

If it is desired to control aphids add one to two pounds of 40 per cent nicotine sulphate.

18. Bordeaux-Arsenate of Lead

Neutral lead arsenate	3 pounds
Bordeaux mixture	50 gallons

Where a stronger poison is desired the arsenate of lead can be increased to four pounds. A more uniform distribution of the arsenate of lead is secured throughout the spray when it is added to the milk of lime instead of placing it in the spray tank.

POISONS FOR CHEWING INSECTS

Lead arsenate (basic or neutral form) is generally used for leaf eating insects, as there is little danger of foliage injury with it. Paris green and white arsenic are used in baits for grasshoppers and cutworms.

The lead arsenates are sometimes sold as a paste containing about 50 per cent of water, or as a dry powder. The paste should be thinned somewhat with water and worked into a smooth cream before adding to the spray tank. The powders may be added directly to the tank and mixed by means of the agitator.

19. Arsenates

Acid Lead Arsenate (Lead Hydrogen Arsenate, Di-Lead Arsenate, often labeled "Standard" or Lead Arsenate. The acid type of lead arsenate contains more poison per pound than the basic type and is a stronger and quicker acting poison. In the moist climate, however, some of the arsenic is apt to be dissolved and cause serious foliage injury. It is not considered as a safe arsenical for use on stone fruits, beans or other susceptible plants.

(a) Acid lead arsenate paste	4 to 8 pounds
Water	100 gallons

Basic Lead Arsenate (usually labeled "Tri-plumbic" or "Neutral." The basic type of lead arsenate contains less arsenic per pound than the acid type, and is a weaker and slower acting poison. It is considered the only safe arsenical to use on stone fruits, beans or other susceptible plants.

(b) Basic lead arsenate paste	5 to 10 pounds
Water	100 gallons

Dry or powdered lead arsenate contains twice as much arsenic as the paste, therefore use only one-half as much in the above formula.

20. Zinc Arsenite

This is a more active and stronger poison than either type of lead arsenate and is useful in controlling the various caterpillars which are troublesome on pears and apples in the early spring, but is very apt to cause injury if the application is made after the time of full bloom.

Zinc arsenite powder	3 pounds
Water	100 gallons

20 (b). Arsenate of Lead for Alfalfa Weevil

Dry arsenate of lead	2 pounds
Laundry soap (not too caustic)	2 pounds
Water	100 gallons

Liquid soap may be used to induce "spreading," but owing to the great variation in liquid content of the soap we can only say use quantity which secures best results.

21. Poison Bran Mash

White arsenic (arsenic trioxide) is only sparingly soluble in water, although sufficiently so to prohibit its use on plants as an insecticide. Its use as a stomach poison is therefore limited to the preparation of poison baits for the control of grasshoppers, army worms, cutworms, etc., and in some other cases where the insecticide is not to be applied to growing plants.

Bran	25 pounds
White arsenic	1 pound
Molasses (cheap blackstrap preferred)	2 quarts

Mix the arsenic and the bran dry, and add the molasses which has been diluted with water. Add enough water and mix thoroughly to make a dry mash which will broadcast easily.

22. Citrus Bran Mash

White arsenic (or Paris Green	1 pound ½ pound)
Molasses (cheap blackstrap preferred)	2 quarts
Lemons (or oranges)	6 fruits
Water (about)	4 gallons
Bran	25 pounds

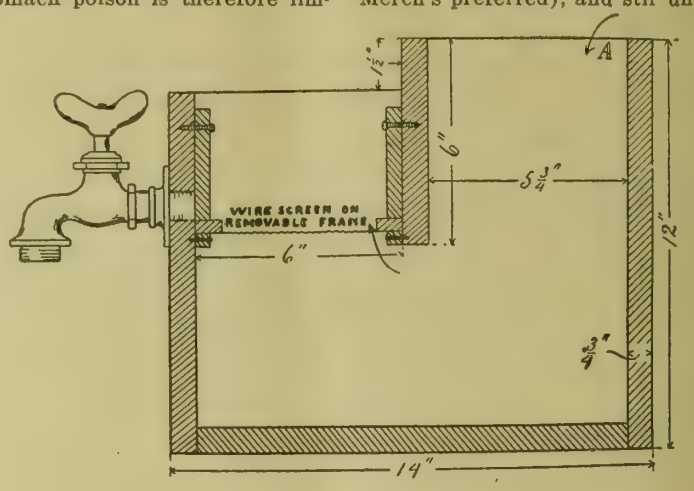
Mix the above materials as follows: Stir thoroughly the white arsenic, molasses, and water first. Grind the lemons, including the rinds, in a meat grinder, or chop fine, and add to this liquid. Then slowly pour this over the bran and stir thoroughly until an even mixture is secured.

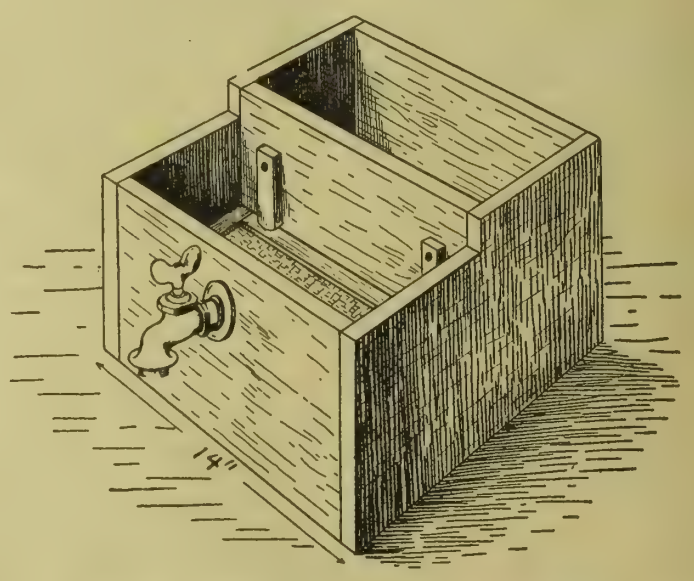
The amount of water to use in the preparation of these baits will vary according to the coarseness of the bran or substitutes. A dry mash is preferable to a wet mash because it does not harden under the heat of the sun and remains palatable, while wet mash becomes baked and unattractive. Distribute in small quantities early in the morning.

23. Argentine Ant Syrup

Place ten pints of water in a suitable container over the fire (gas heat peferred) and heat until lukewarm.

Drop in ¼ oz. tartaric acid (crystals) and stir until dissolved. Add nine grams of benzoate of soda and stir until thoroughly dissolved. Now slowly add 12 pounds of granulated sugar—stirring constantly until dissolved. Measure height of liquid in container as accurately as possible. Place cover on container and bring to a boil over a moderate fire. Boiling is to continue for 40 minutes over a slow fire—adding water to equal evaporation at the end of each 20 minutes. After boiling is complete set syrup to cool. To one pint of lukewarm distilled water add ¾ ounce of sodium arsenite (chemically pure, Merch's preferred), and stir until completely dissolved. Add poison solution to sugar syrup and stir well. Add two pounds of strained honey and stir well. The syrup is now ready for use but if not used at once it should be stored in tightly corked glass receptacles. The formula makes approximately 2½ gallons of poisoned syrup. Follow exactly as to proportions and directions. A two ounce flat top spice tin is preferred for putting out poison.





Stewart's strainer. The sediment collects below the screen instead of on it and does not fill up the screen

In the making of formulas Nos. 1, 2, 3, 10 and others given on Page 313 straining of solutions is necessary. A strainer constructed as above is best.

24. Tartar Emetic for Ants

Simple formula recommended by J. B. Neff:

Tartar emetic the size of a lima bean in three tablespoons of honey. Mix and place in two or three saucers and place where ants are proving troublesome.

DUSTS

26. Lime and Sulphur

Sulphur in powdered form is employed for the destruction of red spider and other mites on plants in foliage. Commercial ground sulphur may be used and, if finely powdered, will be as effective as the more expensive flowers or sublimated sulphur. The sulphur may be used pure or diluted with equal parts of a carrier such as hydrated lime, gypsum, flour, etc. Small hand dusters are available for

Scale Control

Can be Best Accomplished

by

FUMIGATION

USE

AERO BRAND

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With Our New Fumigating Pump

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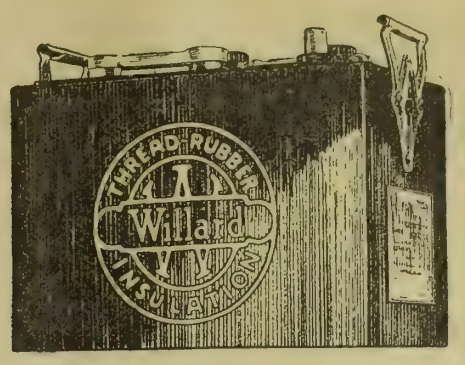
Willard Threaded Rubber Insulation = Insulation + Porosity + Durability



The Thread-Rubber trade-mark tells you that the plates in your battery are *insulated*—not merely *separated*. Willard Threaded Rubber Batteries are selected by the best brains in the automobile business as standard equipment for 184 makes of cars and trucks.

Willard, in the search for a substance which would, all at the same time, INSULATE to keep the plates from contact with one another—be POROUS to permit free circulation of battery solution, and be DURABLE to avoid need for reinsulation—started with rubber. Rubber had two of the necessary qualities—it insulates and it resists wear—Willard found the way to make it porous. Willard Threaded Rubber Insulation, made porous by thousands of tiny threads, is found only in the Willard Threaded Rubber Battery—the battery selected by the builders of 184 cars and trucks.

You can buy the Willard Threaded Rubber Battery of any of the dealers in your territory listed below. They all give authorized Willard Service:

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Alameda, Auto Elect. Serv. Co.
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Anaheim..Anaheim Ign. Depot
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Bakersfield, Auto Elect. & Batt. Co., Inc.
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Brawley, Valley Auto Elect. Co.
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Chico.....Vaughan & Fordyce
Coalinga....Coalinga Batt. Co.
Colton..... G. B. Vaughan
Colusa.....D. R. Hart
Concord....Ward's Service Sta.
Corona..Corona Auto Elec. Co.
Covina...Covina Sto. Batt. Co.
Dinuba.....Elam & Call
Dunsmuir, Callisch Elect. Sta.
ElCentro.....Valley Auto Elect. Co.
Eureka.....Eureka Batt. Co.
Exeter, Weaser Bros. Serv. Sta.
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Fresno.....L. A. Bobo
Ralph E. Jost
Fullerton...Orange Ign. Works, Inc.
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Glendale....E. W. Cizek Co.
Hanford.....Crow & Railsback
Hayward...Hayward Batt. Co.
Healdsburg, Healdsburg Batt. & Ign. Co.
Hollister, Hollister Batt. Co.
Huntington Pk., Huntington Pk. Auto El. Co.
King City, King City Batt. Co.
Kingsburg, Kingsburg Batt. & Tire Co.
Lemoore...Lemoore Batt. Wks.
Lindsay.....E. M. M. Service
Livermore, Auto Elec. Serv. Co.
Lodi.....J. W. Blair
Lompoc.....King Serv. Sta.
Los Banos, Los Banos Batt. & Tire Co.
Long Beach.....A. C. Walker
Los Angeles, Acme Auto Elec. Wks.
Hollywood Auto Elect. Co.
L. A. Duncan
E. E. Mason
Vaughn-Schuler Co.
Western Auto El. Corp.
C. D. Wilson
Los Gatos, Gem City Serv. Sta.
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Marysville...Raymond Lawton Co.
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Modesto.....Mission Batt. Co.
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Napa, Auto El. & Batt. Serv.
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Oakland....Auto El. Serv. Co. (2 stations)
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San Jose...Electric Batt. Sta.
San Pedro, Ross Sto. Batt. Serv.
San Rafael.....Sparrow Bros.
Santa Ana, Orange Co. Ign. Wks., Inc.
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Santa Cruz, Santa Cruz Batt. Co.
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Sausalito, Linderman's Serv.Sta.
Selma, Selma Battery & Tire Co.
Sonora, Gibbs Sto. Batt. & Ign. Wks.
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Visalia....Ferguson Elect. Co.
Watsonville, Watsonville Batt. Co.
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Willows.....Dean's Batt. & Elec. Co.
Woodland, Woodland Batt. Co.
Yreka....The Elec. Supp. Co.

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Carson City.....Carson City Elect. Shop
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WILLARD STORAGE BATTERY COMPANY
Cleveland, Ohio

Made in Canada by the
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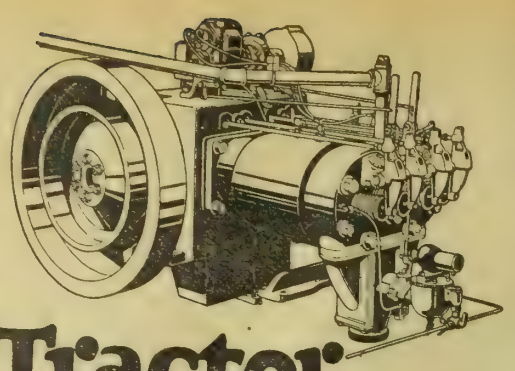
Willard THREADED RUBBER BATTERY

The Motor is the Heart of the Tractor



REMEMBER, it's the motor in the tractor that furnishes the power. Upon the motor's design and construction depend largely the service and satisfaction the tractor gives. The motor in the Waterloo Boy is a real farm tractor motor —the type for heavy, continuous duty. It is extremely simple —only two cylinders—only half the parts ordinarily required.

WATERLOO BOY KEROSENE TRACTOR

The motor has a long stroke and large bore, and develops its full rated horsepower at the low speed of only 750 R. P. M.

It is specially designed for kerosene-burning. Its consumption of fuel and oil is exceptionally low. Its economy has been proved in many competitive tests.

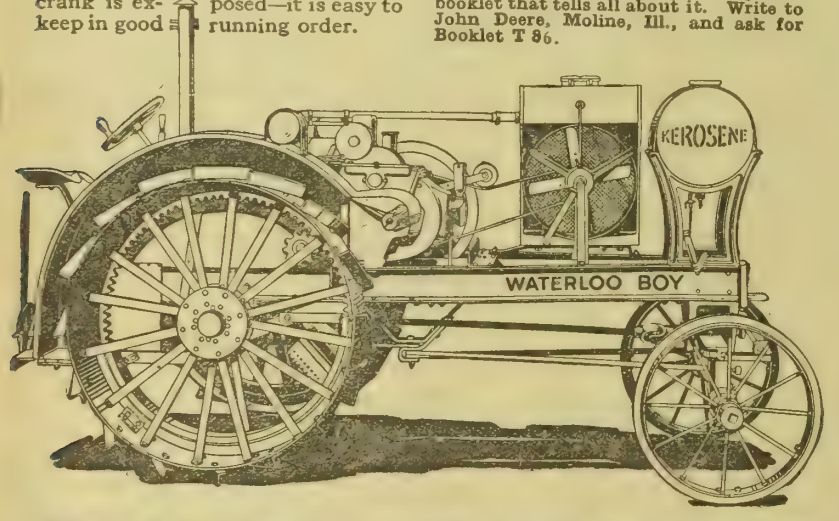
Its positive gear-driven governor insures an even and responsive flow of power to meet the variations in power required at the drawbar and at the belt.

The motor is accessible from a standing position. By merely taking off the crank case cover, the crank is exposed—it is easy to keep in good running order.

A combination force sight feed and spray oiling system insures proper lubrication of all engine parts under all conditions. The transmission of the motor's power to the wheels is accomplished with little loss of power. The Waterloo Boy furnishes 12 H. P. at the drawbar and 25 H. P. at the belt, with a reserve power always available to meet emergencies.

Thousands of users are operating the Waterloo Boy with economy and satisfaction. It's a tractor that will make a profitable investment for you.

See the Waterloo Boy at your John Deere dealer's and get our big free booklet that tells all about it. Write to John Deere, Moline, Ill., and ask for Booklet T 86.



JOHN DEERE

THE TRADE MARK OF QUALITY MADE FAMOUS BY GOOD IMPLEMENTS

The Standard Oil

ZEROLENE

For Motor Cars

A grade for each type of engine

STANDARD OIL COMPANY (CALIFORNIA)

Get a ZEROLENE CORRECT LUBRICATION CHART for your tractor

treating a few plants or trees, and power machines are on the market for orchard work.

29. Tobacco Dust

The tobacco dust may be discharged over tree or plant, but as a rule it is diluted with 50 per cent of either kaolin or hydrated lime. Tobacco dust is largely discontinued because of variation in strength, depending on freshness.

30. Nicotine Sulphate Dust or Nicotine Dust.

Nicotine dust is a compound largely of kaolin, hydrated lime or sulphur or, more often, a combination. The mixture was first developed by Prof. Smith for use on walnut aphis. It is now used largely for all aphis and even other forms of insects. In buying and applying this mixture the user should keep in mind that there is a material difference between nicotine and nicotine sulphate. Nicotine sulphate as ordinarily sold contains 40 per cent pure nicotine. As high as a 10 per cent content of the sulphate has been recommended in some cases, but this necessitates a cost which is prohibitive excepting with high priced products. A dusting with such mixture would cost approximately $10 per acre for truck crops. Hence the following formulas, which are more often used:

(a) 2 per cent nicotine sulphate equals 0.8 per cent nicotine.
(b) 4 per cent nicotine sulphate equals 1.6 per cent nicotine.
(c) 5 per cent nicotine sulphate equals 2 per cent nicotine.
(d) 6 per cent nicotine sulphate equals 2.4 per cent actual nicotine.

Nicotine seems to give better results on some crops when applied with sulphur. Sulphur, however, should never be applied to cucumbers and melons because it would cause burning. For other crops sulphur may be used up to 60 or 70 per cent of the total.

31. Nicotine-Arsenate

Kaolin (about)	67 parts
Hydrated lime (about)	16 or 17 parts
Nicotine sulphate (40 per cent)	1 or 2 parts
Dry arsenate of lead	15 parts

FUMIGATION

32. Hydrocyanic Acid Gas

Liquid gas manufactured at a plant and delivered in the field for use is still the favorite for scale control on citrus, but here and there growers are trying the generating machine of a few years ago and others are using the cyanide and the pots of old times. From certain districts come reports that better results than for several years past have been secured with the liquid, while others are demanding a change from present methods. At least four different machines for applying the liquid gas are in the field this year besides the pots and generating machines, so the grower has some six different methods to choose from.

It is certain that orchard inspections next summer will show some interesting comparisons between different methods and it is to be hoped that it will be possible to find uniformity through one method or another.

For those who understand handling this deadly gas we give formula which may be used in manufacturing gas either for orchard trees under tent or for fumigating rooms, this dosage for every 100 feet of space. For warehouse stronger dosage may be used if preferred.

Sodium cyanide	1 ounce
Sulphuric acid	1½ fluid ounces
Water	2 fluid ounces

The acid and water are mixed in the vessel and the cyanide dropped in at the last moment.

33. Carbon Bisulphide

Carbon bisulphide is a liquid which evaporates quickly when exposed to the air, forming a heavy and inflammable vapor of great penetrating power. In using the material for fumigation it is essential that it be placed at the top of the room in a shallow container in order that the heavy vapors as they are driven off will thoroughly diffuse with the air container in the space to be fumigated. The proper amount to use depends upon the type of room being fumigated and ranges up to about 5 pounds to 1000 cubic feet in ordinary rooms where the walls and floor have not been made especially tight, even 10 pounds per 1000 for larger room or other than small, tight bin. Where possible 48 hours' exposure to gas should be secured. The best results are obtained by doing this work when the temperature is above 75 degrees Fahrenheit.

MISCELLANEOUS

Sulphur Fumigation. (See article by W. B. Hems on page 326.)

Growers have been longing for, and chemists have been endeavoring to provide, a royal road to weed eradication through the use of chemicals. However, the satisfactory chemical weed killer that is brought within reasonable cost is yet to be proven out. Several proprietary offerings have been made to growers and arsenic-caustic soda, sulphate of iron and others are still being experimented with. The use of sulphate of iron for controlling mustard and some other weed pests of the grain field is fairly satisfactory.

34. Sulphate of Iron for Weeds

Many weeds are susceptible to a spray of sulphate of iron and some, especially mustard, are so sensitive to it that spraying a grain field will often eradicate the mustard and still leave the grain growing lustily. A very strong solution is used:

Sulphate of iron	100 pounds
Water	50 gallons

Dissolve by constant agitation.

35. Arsenic-Caustic Soda for Weeds

Caustic soda (sodium hydroxide), or a good grade of concentrated lye, is much more active in dissolving arsenic than either sal soda or soda-ash, and much less is required, although the cost per pound is greater. Very little heat is required in the preparation of sodium arsenite by means of these materials. If made in large quantities (five gallons or more) the use of heat is unnecessary.

Granulated Caustic Soda (98 per cent)	10 pounds
White Arsenic (arsenic trioxide, 99 per cent)	20 pounds
Water, to make	5 gallons

Dissolve the caustic soda in about 2 gallons of water in a metal or wooden vessel (preferably iron), and while still hot add the dry arsenic, about a pound at a time at a sufficient rate so that the solution is just at the point of boiling, but does not actually boil. Stir continuously during the addition of the arsenic and until all is dissolved. Considerable heat is produced by dissolving the caustic soda. Additional heat is furnished by the chemical reaction involved in the union of the caustic soda with the arsenic to form sodium arsenite. After all the arsenic is dissolved let the solution cool and add water to make exactly five gallons.

(Caution.—Do not add cold water to the hot solution. An explosion may result as the solution is hotter than the boiling point of water.)

36. Torch for Dodder

Dodder, a most perplexing pest of alfalfa and other crops, may be controlled by the use of a gasoline torch burner. The kind with a chamber for compressed air and of large capacity is necessary. After cutting alfalfa, use the torch over infested spots in the field or burn the patches out thoroughly with dry hay or rubbish.

37. Tree Whitewash

In order to prevent sunscald whitewashing the trees or protecting by shade is at times necessary. Where a tree has been severely cut back or where a protecting limb has been broken off apply to the exposed limbs and trunk the following, known as California tree whitewash:

(a)	Quicklime	30 pounds
	Tallow	4 pounds
	Salt	5 pounds
	Water enough to make the mixture flow freely.	
(b)	Waterproof Whitewash	
	1. Quicklime	62 pounds
	Water (hot)	12 gallons
	2. Common salt	2 pounds
	Sulphate of zinc	1 pound
	Water (boiling)	2 gallons
	3. Skimmed milk	2 gallons

(1) Slake the lime thoroughly; (2), dissolve the salt and sulphate of zinc in the two gallons of water; pour (2) into (1) and add (3). Mix thoroughly Two pounds of flour paste (dissolved

in two gallons of hot water) may be added instead of the skimmed milk.

38. Lasting Whitewash

The formula 37 is perhaps the best tree whitewash, but where one wants one quickly made which is fairly durable, it may be made simply of quick lime, water and salt.

Quick lime	5 pounds
Salt	½ pound
Sulphur	¼ pound

Slake the lime slowly with water and add the salt and sulphur while it is boiling. Add enough more water to make a good wash.

39. Tree Barriers

Tree barriers, such as "Tanglefoot" or other sticky mixtures, are not as generally used as formerly owing to occasional injury to tree trunk on which they were smeared. Cotton or burlap bands are still used.

Cotton Bands. A four inch strip tied around the tree by a string at the lower edge, and the top then pulled down over the string is in use against Fuller's rose beetle on the orange, and other beetles and worms.

40. Asphaltum

Melt asphaltum (grade C or D) and paint while heated in four inch strip around crown of tree, clearing away soil six or eight inches. The ground should be cleared and afterwards filled back against the asphaltum.

41. Potato Bait

Wireworms which have become a serious pest in bean fields and with many of the garden or truck crops may be controlled to an extent by placing potatoes in the ground as a bait before planting the beans. The work should be started a week or so before the beans are put in and the potatoes should be pulled out by an attached wire every two or three days until the wireworms have been reduced to a minimum. After a few days these are lifted and the wireworms which have been attracted to the potatoes may be shaken into oil or other liquid and destroyed. The potatoes are located by cloth which is attached to a wire showing above surface of the ground. It is claimed the cost of this treatment is not over $5 or $6 per acre. This is only recommended in case of severe infestation in preceding years. It has been successfully practiced on a large scale in Ventura County.

42. Poisoned Barley

Following is the latest government formula for preparing poisoned barley for California ground squirrels:

Barley (clean grain)	16 quarts
Strychnine (powdered alkaloid)	1 ounce
Bicarbonate of soda (baking soda)	1 ounce
Thin starch paste	¾ pint
Heavy corn syrup	¼ pint
Glycerin	1 tablespoon
Saccharin	1-10 ounce

Mix thoroughly 1 ounce of powdered strychnine and 1 ounce of common baking soda. Sift this into ¾ pint of thin, hot starch paste and stir to a smooth, creamy mass. (The starch paste is made by dissolving 1 heaping tablespoon of dry gloss starch in a little cold water which is then added to ¾ pint of boiling water; boil and stir constantly until a clear thin paste is formed.) Add ¼ pint of heavy corn syrup and 1 tablespoon of glycerin and stir thoroughly. Add 1-10 ounce of saccharin and stir thoroughly. Pour this mixture over 16 quarts of clean barley and mix well so that each grain is coated.

(Caution: All containers of poison and all utensils used in the preparation of poisons should be kept plainly labeled and out of reach of children, irresponsible persons and livestock.)

* * *

THE HOST PLANT AND THE PEST

Following are helps in knowing the pests.

APPLES, PEARS AND QUINCES

Insect Pests

Aphis, Green (Aphis mali). Apply commercial lime-sulphur 1-10 or formula 10 just before buds open if orchard has been badly infested in past years. Also experiments on a small scale indicate that this species is easily controlled by nicotine dust, preferably when containing at least 1.6 per cent nicotine with 60 per cent or 70 per cent sulphur in the carrier.

Aphis, Leaf-Curling (Aphis sorbi). 9 or 10 plus nicotine sulphate, one pound to 100 gallons. Apply when the buds are beginning to open, pink showing in a few blossoms; spray very thoroughly.

Aphis, Woolly (Schizoneura lanigera). Spray with 15 whenever this pest appears above ground. Use at least 150 pounds pressure. For underground forms proceed as follows: Remove soil until upper roots are exposed at the base of the tree. Pour several gallons of 15 or solution of nicotine sulphate around crown and replace soil when it has soaked in. Repeat often. This insect has also been found to be susceptible to a nicotine-sulphur dust containing at least 1.6 per cent nicotine and 70 per cent sublimed sulphur in the carrier. Particularly recommended for the control of woolly aphis above ground in home orchards or in young orchards where the trees are not over 10 or 12 feet in height.

Pear Thrips (Euthrips pyri). Apply 5 per cent nicotine dust which should be guaranteed to contain not less than 1.6 per cent pure nicotine, preferably with carrier containing from 60 per cent to 75 per cent sulphur. Begin dusting as the thrips become numerous on the trees. Inspection should be made frequently after the buds begin to swell. Use about ¼ pound of nicotine dust on average sized tree.

Bud Moth (Lithophane antennata). Use 9 or 10 in winter and 17 before leaf buds open and after blossoms fall. Repeat every ten days if necessary.

Brown Apricot Scale. (See Apricots.)

Canker Worms, Fall Canker Worm (Anesopteryx pometaria Harris) Spring Canker Worm (Paleacrita vernata Peck). Apply 19 when worms first appear. Spray as often as needed. Bands on trees are very effective in keeping the caterpillars from the trees.

Codling Moth (Cydia pomonella L.). Apply 18 or 19. Continue to spray at intervals of ten days or two weeks throughout the season (at least four times). Arsenate of lead in dust form may be used under proper weather conditions. Except where strong winds are too constant to make the use of dust practical, dust applications may be used as effectively as a wet spray. Dusting for the control of the codlin moth is especially advisable in small home orchards where power sprayers are not available. Hand operated dusting machines with bellows of large capacity are especially suitable for this class of work.

Flat-Headed Borer. Apply 37 to prevent sunburn. Dig out borers. Prevent injury or dead spots on bark as the borer usually enters through dead areas.

Oyster Shell Scale (Lepidosaphes pomorum) and Greedy Scale (Aspidiotus camelliae). Apply 9 or 10 when trees are dormant.

Pear Slug (Caliroa cerasi). Dust on Paris green or pyrethrum or with lime and dry arsenate.

San Jose Scale (Aspidiotus perniciosus). Apply 9 or 10 when trees are dormant. If 9 is used follow instruction of manufacturer, or approximately 1 to 9.

Tussock Moth. Spray in full bloom with 20, 6 pounds to 200 gallons, and follow in ten days with neutral lead arsenate, 15 pounds to 200 gallons. Run over egg masses during winter. Apply cotton bands to tree trunk.

Fungoid or Bacterial Diseases

Apple Mildew. Cut off infested tips both winter and summer, also prune back all twigs somewhat as apricots are pruned. Spray with arsenites and Bordeaux combined or with lime-sulphur.

Bitter Rot (Glomeralla ruformaculans). Apply 1 or 2 (b) at first appearance of rot. Repeat every two weeks if needed.

Black Spot Canker (Myxosporium curvisporum Sacc.). Apply 2 (a) the first and fifteenth of November.

Moss or Lichens. Apply 1 (a), 2 (b), 9 or 10 when trees are dormant.

Pear Blight. No spray effective. The only treatment consists in cutting off blight as fast as it appears. Cut below affected parts so that good live wood is secured. Sterilize implements after eaoh cut by dipping them in 7. Recently planted orchards have taken advantage of resistant stocks.

Peach Growers

Prepare Now for Fall and Winter Spraying

Niagara Soluble Sulphur

is the best of all sulphur sprays for PEACH BLIGHT, LEAF CURL, and for scales, moss, and as a general clean-up.

COMPARE our DIRECTIONS for use, and PRICE with any other spray compound.

SOLUBLE SULPHUR has been used in many peach orchards in California for the past six years, and has been found effective when used.

14 POUNDS to 100 GALLONS water in fall spraying for PEACH BLIGHT.

12 POUNDS to 100 GALLONS water in spring spraying for LEAF CURL.

Saves your crop and cuts the cost of spraying.

Orange and Lemon Growers

Spray with **SOLUBLE SULPHUR** for Red Spider control. We have a new and important combination of SOLUBLE SULPHUR and **finely divided free sulphur** put up in **dry form,** and readily available for liquid spraying, — a contact spray and free sulphur in one. **TRY IT.**

NIAGARA DUSTING MACHINES, DUSTING MATERIALS, — DUSTING SULPHUR, NICO-SULPHUR, and NICODUST are efficient and reliable.

They Are Made Right by People Who Know How

Note Our Change in Office Address

F. A. FRAZIER

Western Representative

283-285 Minna Street, San Francisco

Powdery Mildew (Podosphaera oxycanthae). Apply 1 to 2 (a) when trees are dormant, then 2 (b) during spring and early summer. Remove mildewed tips in winter. Apply 9 or 10 just before buds open.

Sappy Bark. Cut away diseased parts when trees are dormant.

Scab (Venturia inaequalis, Winter). Apply 1 or 2 (b) before buds start. Spray again with 2 (b) as soon as blossoms fall. Repeat several times at intervals of three or four weeks. (This should be done especially if the weather is damp.)

It is a good plan to give through winter or dormant season spraying with 9 or 10 or crude oil emulsion in order to clean up insects, mosses and other fungus pests.

CITRUS FRUITS

Insect Pests

Army Worms (Various species). Apply 21 or 22 under trees; also if they have not already secured access to orchard, surround trees with deep furrow, vertical side toward trees. If cover crops are growing, remove such growths as project up into branches of the trees. Paint tanglefoot bands around tree trunk. (See 39.)

Black Scale (Saissetia oleae). Fumigate with 32 during period between September 1 and January 1. Spray young trees with 12 or 14 during the months of September, October and November.

Coccus citricola. This has become a serious pest in past few years. Treatment given is generally fumigation. (Formula 32.)

Fuller's Rose Beetle (Pantomorus fulleri). This insect cannot fly and can be kept from the tree by means of tanglefoot bands.

Hemispherical Scale. (See Black Scale.)

Long Scale (Lepidosaphes gloverii). Fumigate as soon as found with 32.

Mealy Bugs: Long Tailed Mealy Bug (Pseudococcus longispinus); Citrus Mealy Bug (Pseudococcus citri). This pest is being successfully handled by the introduced insect Cryptolaemus Montrouzieri, colonies of which may be had by applying to G. H. Hecke, Director, State Department of Agriculture, Sacramento.

Orange Aphis (Aphis gossypii glover). Spray with 14 or 15 as soon as found. Citrus aphis and citrus thrips, together with many other forms of aphis, may be combated by nicotine dust known to contain not less than 1.6 per cent nicotine, with carrier containing 60 or 75 per cent sublimed sulphur.

Purple Scale (Lepidosaphes beckii). Fumigate.

Red Scale (Chrysomphalus aurantii). Same as Purple Scale.

Red Spider (Tetranychus mytilaspidis). Apply finely ground or flowers of sulphur (see 6) if by hand or knapsack type of machine, pure sulphur without diluent such as hydrated lime or kaolin; if by powder machine, ¼ lime may be used. Some prefer spraying with commercial lime-sulphur. Dry sulphur is effective only when a warm summer temperature prevails. The requirement for proper fuming of the sulphur is generally stated to be a temperature above 75 degrees.

Fungoid and Bacterial Diseases

Brown Rot (Pythiacystis citrophthora). Sow cover crop in orchard. Plow under in spring and cultivate well under the trees. In fruit washer use 5, bluestone, or permanganate of potash. Eliminate infected fruit and disinfect boxes and picking sacks.

Gum disease, formerly considered a physiological trouble, now best treated by raking away dirt from trunk of tree, scraping off all diseased bark or tissue and painting with 3.

Mottle Leaf (Physical). Improve physical condition of tree by deep culture. Make applications of lime and manure to soil. Examine soil as to hardpan, and if it exists, break up.

Smut (Meliola camelliae, Sacc.). A fungous growth caused by honey dew exuded by scale insects, plant lice and white fly. Remove pest and smut will disappear.

Wither Tip (Colletotrichum gloeosporioides, Penz.). Apply 1 or 2 (b) as soon as it appears and repeat as often as necessary.

DATES

Marlatt Scale. (Phoenicococcus marlatti). Dip young plants or spray old ones with a solution of phenol.

Parlatoria Scale (Parlatoria blanchardi). Most effective treatment burning with gasoline torch.

OLIVE

Insect Pests

Black Scale. Best treatment, fumigation with 32 October-January. If sprayed use 12, 13 or 14. When young insects appear in large numbers on leaves and stems apply spray. Two or three sprayings may be necessary.

Twig Borer (Polycaon confertus). Cut off twigs and burn.

Fungoid and Bacterial Diseases

Keep trees free from other pests, well pruned out so as to admit light and air.

Olive Knot. A bacterial disease in the form of a woody tumor. Attacks most vigorous trees. Distributed principally by pruning tools. After pruning dip tools in 7. Cut off all tumors, removing the entire twig, and burn.

Peacock Leaf Spot (Cycloconium oleaginum). Fungus on leaves and fruit. Spray with 1 or 2 (a).

PEACH, NECTARINE AND APRICOT

Insect Pests.

Aphis, Black Peach (Aphis persicaeniger). For those above ground use 29. Destroy the underground forms by pouring carbon bisulphide into holes in the ground (made by a crowbar) six inches to six feet away from the tree and about two feet apart. Pour 15 around base of tree often.

Apricot Scale (Eulecanium armeniacum). Apply 13, 14 or 15 just as soon as the leaves fall. All applications should be made before the first of December.

Black Scale (Saissetia oleae). Same treatment as Apricot Scale.

Borer, Peach Tree (Sanninoidae pacifica Riley). Dig out and kill, or destroy by inserting a flexible wire into their burrows and applying 37, 38 or 40.

Bud Moth (Lithophane antennata). Use 9 or 10 during winter months when tree is dormant. Use 19 just before leafbuds open and just after blossoms fall. Repeat every ten days if necessary.

San Jose Scale (Aspidiotus perniciosus). Spray with 9 or 10 when trees are dormant.

Twig Borer (Anarisa lineatella). Spray with 9 or 10 when buds are swelling.

Fungoid and Bacterial Diseases

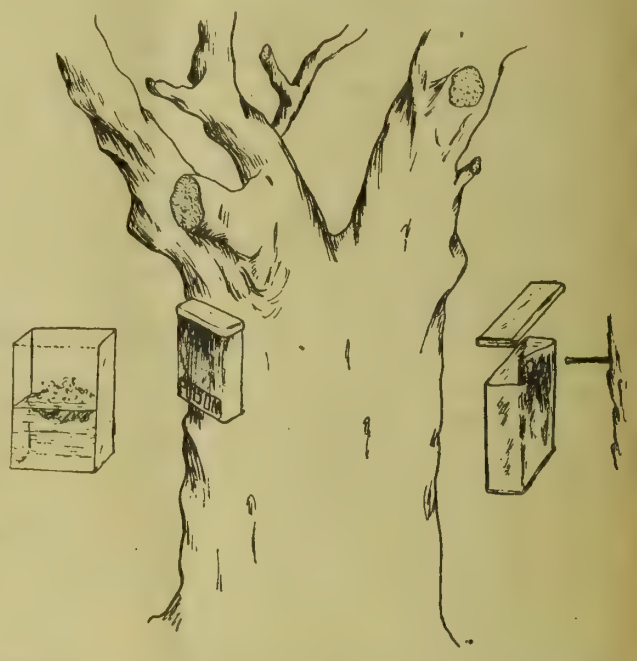
Blight, Peach (Coryneum beyerinkii). Spray last of November or before December 15 with 1 or 2 (a) or 9 or 10.

Brown Rot, Blossom Blight, Gumming Twig Blight, Green Rot, Shot Hole. Destroy mummies in fall. Spray with 9 or 10 as buds are swelling and again when first blossoms are open. If rainy while "jackets" are on, spray with lime-sulphur 1-30. For the control of brown rot of the fruit, summer spraying with sulphur paste or the so-called self boiled lime-sulphur is often recommended. In California such practice has resulted quite frequently in injury to the trees and must therefore be tried with caution. The injury consists in a yellowing of the foliage, stunting of the fruit, disfigurement by sediment on the fruit, and failure of the trees to bloom the following season.

Curl Leaf (Exoascus deformans, Fuckel). Spray thoroughly with 1 or 2 (a) in spring before blossoming. Later spraying should be made with 2 (b).

Shot-hole Fungus (Coryneum sp.). Spray with 1 or 2 (a) about ten days before buds open and with 2 (b) when fruit is about one-fourth grown.

Diseases, such as little leaf, exanthema, dieback, mottled leaf, rosette, bitter pit, dry rot, blossom-end rot in which the cause is not known and which seem unlike the usual effects of unfavorable conditions or parasites. Most of these troubles show a relation to soil conditions and occur especially in dry, sandy, gravelly, or hard pan soils, those very deficient in humus, or under conditions of irregular soil moisture. Trees standing over old barnyards or corrals or where excessive amounts of manure have been applied are also likely to show some of these conditions. The best possibilities of treatment lie along the line of increasing the humus content of the soil by means of green manure crops



ANTS!

Ants are an awful household pest. The Argentine ant is becoming a serious tree pest. Kill em!

Mix formula 23 as given on Page 314 or the formula as given by Mr. Herms on Page 327. Place about the house or where convenient on trunks of trees as indicated in this illustration.

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There's no doubt about it—now. Citricola and black scale in Southern California can be overcome—and red spiders routed —with Balfour, Guthrie & Company's patented formulas for spraying. Your trees—like those our experts sprayed on 20,000 acres in Tulare County—can produce fancy packs and bigger profits.

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Triumph	2½ gallons	or	Triumph	2½ gallons
Glue	1 lb.		Glue	1 lb.

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and mulches, breaking up all hard pan and plow soles, more careful irrigation to insure the maintenance of a proper and uniform moisture condition of the soil down to a depth of several feet, and throughout the season until rains occur, and planting of alfalfa in orchards where plenty of water is available. The soil in areas where these troubles occur should be examined for alkali or other injurious substances. Where any of these diseases are serious and persistent it may be better to grow some other crop than to keep on with one which is seriously affected.

Bud Blight. Spray with commercial lime-sulphur 1.8 or formula 10.

CHERRIES, PRUNES, PLUMS

Insect Pests

Cherry Slug (Caliroa cerasi). Spray with 19, or, perhaps better, give treatment recommended for pear slug.

Prune Aphis (Aphis prunifolii). Spray in the fall with 9 or 10 and as soon as the lice appear with 29.

Thrips. (See Pear Thrips.)

Black Peach Aphis (Aphis persicae niger Sm.). See Peach Aphis.

Borer (Aegeria opalescens). See Peach.

Canker Worm (Paleacrita vernata and Alsophila pometaria). See Apple.

Tent Caterpillar (Malacosoma disstria). See Apple.

Brown Day Moth (Pseudohazis eglanterina). Attacks particularly the prunes and cherries. Spray with 19 or 20 or apply 21 under tree.

Red Hump (Schizura concinna). Spray early with 19. Burn cocoons. Also dust with 27.

Fungoid and Bacterial Diseases

Brown Rot or Fruit Mold (Sclerotinia fructigena Sch.). Produces a rot on the fruit. Spray with 1 or 2 (a) early in the spring, and with 2 (b) as soon as the buds begin to open.

Leaf Curl or Witches Broom (Exoascus cerasi Fuckel). Cut out and burn infested parts. Spray with 1 or 2 (a) early, and with 2 (b) as soon as the buds begin to swell.

Leaf Spot or Shot Hole Disease (Cylindrosporium padi Karst). Produces a shothole effect upon the leaves. Spray in early spring with 1 or 2 (a), when the buds begin to open with 2 (b), and when the fruit is one-fourth grown with 2 (b).

Powdery Mildew (Podosphaera oxycanthae DC.). Appears on the leaves late in the season. Spray as soon as found with 26 and repeat if necessary.

Crown Gall (Pseudomonas tumefaciens Erw. Smith and Town). If on young trees recently set from nursery, remove and burn. If on bearing trees, chisel away until only the healthy wood remains. Paint with 3. Watch for a reappearance and treat as before.

Gummosis. Dig out the gum pockets and wash out with 1, 2 (a) or 3.

NUTS

Insect Pests

Aphis. Walnut aphis has developed as a major pest within the past few years. Dust with nicotine sulphate diluted with kaolin or hydrated lime. Nicotine dusts are on the market, which are proving very successful in combating this pest. Or apply 30.

Red Spider of Almonds. Apply 9 or 10 summer mixture, or, perhaps better, 6.

Codling Moth of Walnut. Apply 31.

Fungoid and Bacterial Diseases

Crown Gall. If young trees, dig up; if older, chisel to healthy wood and paint with 2.

Dieback. Physical disturbance. Correct soil conditions.

Blight. Sprays ineffective. Plant resistants.

GRAPE

Insect Pests

California Root Worm (Adoxus obscurus L.). A black beetle whose larvae attack the leaves, stems, petioles, roots and fruit of the vines. Cultivate deeply around the base of the vines. Spray with 19 as soon as beetles appear.

Erinose (Eriophyes vitis). This so-called disease is produced by a small mite, which is characterized by forming swellings upon the upper surfaces of the leaves. Dust plants lightly with 6 when they are wet with dew.

Flea Beetle (Haltica carinata Germ.). It infests the foliage and may be handled by spraying liberally with 19.

Grape Leaf Folder (Desmia funeralis Hub.). The larvae roll themselves up in the leaves which they eat. Spray with 19.

Grape Phylloxera (Phylloxera vastatrix). Attacks roots and foliage of the vines. Plant resistant stock. Be sure of your nursery stock. When possible long continued flooding of fields is beneficial.

Grasshoppers. (See Beans.)

Hawk Moth (Philampeles achemon Drury). The large green larvae of this moth feed upon the foliage. Hand pick, or if too numerous spray with 19.

Nematode Root Gall (Heterodera radicicola Mull.). A minute worm attacking the small roots. Destroy all infested vines. Sterilize soil with heat or 33. Plant only hardy varieties where this exists.

Vine Hopper (Typhlocyba comes Say). Infests foliage of the vines. Use hopperdozer in spring before adult females deposit their eggs. Spray as soon as the young begin to appear with 13, 14 or 15.

Fungoid and Bacterial Diseases

Powdery Mildew (Uncinula spiralis and Uncinula necator Schw.). Grows upon the canes, leaves and fruit. Dust often with 6 as soon as the disease appears. Spray early with 1 or 2 (a).

Downy Mildew (Peronospora viticola DB.). Attacks all green portions of the plant—leaves, young shoots, and berries. Spray with 1 or 2 (b) as soon as first appearance.

BLACKBERRIES, RASPBERRIES, LOGANBERRIES, STRAWBERRIES

Insect Pests

Rose Scale (Aulacaspis rosae Bouche). A white scale thickly infesting the canes just above the surface of the ground. Spray with 13, 14 or 15.

Strawberry Plant Louse (Myzusfragaefolii Ckll.). A light yellow louse attacking the buds, blossoms and young fruit. Spray with 13 or with 15.

Fungoid and Bacterial Diseases

Orange Rust (Gymnoconia peckiana Tranz.). Forms orange-red colored masses on the leaves, which finally kill the plant. Dig out and burn all diseased plants as soon as rust first appears.

Leaf Spot on Blackberry and Raspberry (Septoria rubi West.). Produces small pale spots on the leaves. Spray with 1 or 2 (b) when leaves are half grown and repeat every two weeks if necessary.

Leaf Spot of Strawberry (Mycosphaerella fragariae Lind.). This disease first appears as small discolored spots upon the leaves which destroy the tissues of the plant. Spray before the flowers open with 1 or 2 (b). If the disease appears late, mow off and burn the leaves. Spray the newly appearing leaves with 1 or 2 (b).

Powdery Mildew of the Strawberry (Sphaerotheca humuli). Produces a whitish powdery covering on the foliage which soon kills the plant. Dust with 6.

Crown Gall (Pseudomonas tumefaciens Erw.). Affects, especially, the blackberry. Dig vines as soon as this trouble appears; there is no cure. Secure new, clean stock and plant on fresh ground.

CURRANTS AND GOOSEBERRIES

Insect Pests

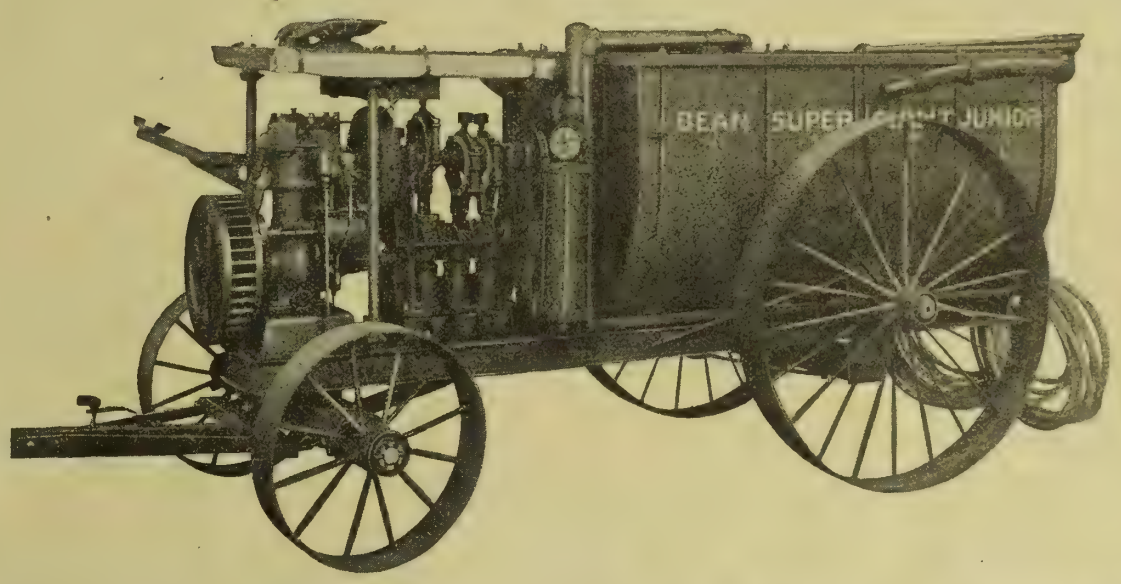
San Jose Scale (Aspidiotus perniciosus Comst.). A small scale infesting the stalks. Spray when dormant with 9 or 10.

Currant Stem Borers (Sesia tipuliformis and Chrysobothris femorata). Small white larvae which bore into the stalks of the plants. As a preventive, wash plants in the spring with strong soap solution.

Imported Currant Worm (Nematus ventricosus Klug.). Attacks the leaves in the spring. Dust plants with white hellebore when they are wet, or spray with 15.

Leaf Hopper (Empoasca albopecta Walsh). Usually appears in great numbers on the undersides of the leaves. Spray with 13 as soon as the first ones are noticed.

Currant Leaf Louse (Aphis ribis). Usually works upon the ends of the tender shoots and stunts their growth. Spray with 13 or 15.



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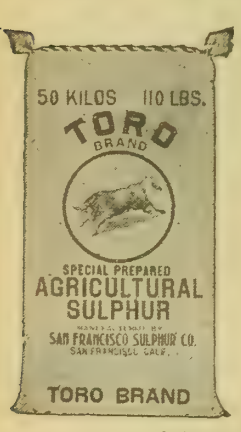

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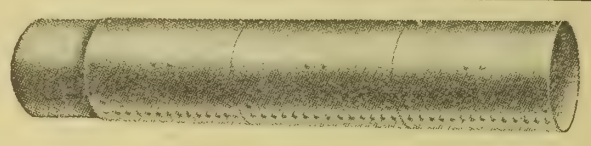

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Fungoid Pests

Leaf Spot (Septoria ribis Desm.). Produces large pale spots with brown borders upon the leaves. Spray with 1 or 2 (b) as soon as first spots appear and repeat as often as is necessary to keep down the disease. Spray with 2 (b) twice after fruit has been removed.

Anthracnose of Currant (Pseudopeziza ribis Kleb.). Produces small brown spots upon the leaves, petioles, young canes, fruit stalks and fruits. Spray with 1 or 2 (a) before leaves appear and with 2 (b) while leaves are unfolding and repeat every three weeks until fruit ripens.

Gooseberry Mildew (Sphaerotheca morsuae B. & C.). Produces a mildew upon the stems, leaves and particularly upon the berries, causing them to spoil. Spray with 2 (b) just as the buds are breaking open and repeat every 12 days until about July 1. Spray plants in winter with 9 or 10.

ALFALFA, PEAS, BEANS, VETCH, CLOVER

Insect Pests

Alfalfa Weevil. Not yet in California. About the only treatment is to disk early in spring. Cut as soon as eggs are laid, about first or middle of May; or the three essentials are: dust, heat and starve; drag the field with brush drag or spray with 20 (b).

Wireworms (Various species). Affect beans and many other garden plants. Rotation of crops to starve out the infestations is perhaps the best treatment. Where this cannot be done, the use of carbon bisulphide in sandy ground is advised. Fertilize with nitrate of soda or kainit. Also use 41.

Bean Aphis (Aphis rumicis L.). Works on the leaves, young shoots and tender pods, causing much damage. It is usually cared for by an internal parasite and by a predacious ladybird (Scymnus sordidus), but if it becomes too destructive spray with 13 or 15 or nicotine dust containing not less than 1.6 per cent nicotine, with carrier containing 60 to 75 per cent sulphur.

Green Pea Aphis (Macrosiphum pisi Kalt). Also attacks vetch, geraniums, malva, and many other plants. Spray with 16½. Dust with nicotine dust containing not less than 2.4 per cent nicotine with carrier containing 60 to 75 per cent sulphur.

Cut Worms (Peridroma saucia, Agrotis ypsilon.) Do great damage to all crops at certain seasons. Plow around field so as to have straight side of furrow next to the crop. Poison with 21 or 22.

Grasshoppers (Various species). Are very difficult to handle. Poisoned baits as given in 22 have given good results. Fall plowing of breeding grounds essential.

Bean Weevil (Mylabris obtectus Say). **Pea Weevil** (Mylabris pisorum L.). Fumigate seed with 33 and be sure that no infested seed is planted. Test by placing in water; infested seeds will float.

Fungoid and Bacterial Diseases

According to some investigators bean rust cannot be controlled by either wet or dry sprays. In circular 204, California experiment station, sulphur as dust is recommended. At the Virginia agricultural experiment station, the following varieties were found to be "rust free": Improved Goddard, Mexican Red, White Kidney and Wells Red Kidney. The following were reported as "rust proof," showing little if any rust injury: Yellow Eye, Dwarf Horticultural and French's Horticultural.

Bean Anthracnose (Colletotrichum lindemuthianum B. & C.). Produces brown sunken areas upon the pods. It also attacks the young plants. Treat seeds with 8 before planting. Spray with 1 or 2 (b) as soon as young seedlings are well under way. Repeat if necessary. Practice clean cultural methods.

Bean Blight (Bacillus phaseoli). Attacks pods and produces wrinkled and distorted seed. Treat seed with 8 before planting, or, better, pod selection is effective. Seed three or four years old still better.

Rust (Uromyces appendiculatus Lev.). Produces rust colored spots on foliage. Spray with 1 or 2 (b). Burn all infested plants.

Downy Mildew (Phytophthora phaseoli Thax.). Turns foliage dark and causes it to wilt and die. Select clean seed. Spray with 1 or 2 (b).

Downy Mildew of Alfalfa (Peronospora trifoliorum). Spray with 1 or 2 (b) or dust with 6.

Pea Mildew (Erysiphe polygoni DC). Appears early and late, covering plant with a white felt-like powder. Spray with 1 or 2 (b) or dust with 6.

Dodder. Dodder usually comes because of infested seed at planting time. However, where irrigation waters are from gravity flow from mountain streams the seed may be introduced by them. Where patches appear in alfalfa burn by piling straw over infested spot or use gasoline blast torch. Keep close watch and destroy every portion of the vine as soon as it appears. Where appearing in grapevines or trees a measure of control may be had by spraying with 2 (a) in winter time and when trees are in leaf 2 (b).

ONIONS, LEEKS, GARLIC, ETC.

Insect Pests

Onion Thrips (Thrips tabaci Lind.). Attack the leaves and flowers, causing considerable damage in some localities. Spray with 16½ as an insecticide or use nicotine dust containing 1.6 per cent nicotine.

Cutworms. See Beans, Peas, etc.

Fungoid Diseases

Downy Mildew (Peronospora schleideniana DB). Produces a white mould on the leaves, causing them to wilt and die. Spray with 1 or 2 (b).

Onion Smut (Urocystis cepulae Frs.). First appears in the form of dark spots upon the leaves and later as longitudinal rifts upon the bulbs. The following drilled into the soil at the rate of 150 pounds per acre has given good results: lime, 50 pounds mixed with sulphur 100 pounds. Also treat seed with 7 or 8 as they are being drilled into the soil.

CABBAGE, CAULIFLOWER, KALE, TURNIP, RADISH, MUSTARD

Insect Pests

Harlequin Cabbage Bug (Murgantia histrionica Hahn). Attacks all cruciferous plants, cultivated and uncultivated, as well as many other hosts. Keep weeds from the field at all times; plant late trap crops of kale or cabbage and burn when they become infested, or kill the bugs with pure kerosene. Hand pick adult insects as soon as they first begin to appear. Spray with 13.

Cabbage Aphis (Aphis brassicae). Attacks a wide range of cruciferous plants, cultivated and uncultivated. In time, it is subdued by parasitic and predacious enemies, but often not until it has done great damage. It can be controlled by spraying with 13 or with 40 per cent nicotine sulphate, 1 pound to 100 gallons, or, perhaps better, with nicotine dust guaranteed to contain not less than 1.6 per cent nicotine preferably with a carrier containing 60 per cent to 75 per cent sulphur.

Cabbage Worms (larvae of Pontia brassicae, the Large White Butterfly, and of Pontia rapae, the Small White Butterfly). The latter is more common. Dust with arsenate of lead, using a 10 per cent mixture with lime or nicotine dust, the latter when the cabbage louse is to be controlled at the same time.

Diamond Back Moth (Plutella maculipennis Curtis). Tiny Moth. Treat as above.

Cutworms. (See Beans, Peas, etc.)

Fungoid and Bacterial Diseases

Club Root (Plasmodiophora brassicae Wor.). A disease producing a peculiar enlargement of the roots giving the plants an unhealthy appearance and finally causing their death. The disease may be carried over in the soil, so the following has been recommended as a means of control: lime the soil at a rate of 100 bushels per acre, every few years. Rotate crops. Employ clean culture methods.

Black Rot (Pseudomonas campestris Smith). A bacterial disease first producing a burnt margin on the leaves and finally causing them to drop. The disease is readily carried from year to year in the seed. Before planting treat the seed with 7 or 8. Eliminate infected plants as soon as they appear in the beds. Rotate crops.

TOMATO, POTATO, EGG-PLANT, TOBACCO, ETC.

Insect Pests

Tomato Fruit Worms (known also as

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Nobody appreciates the perils of motoring so much as the pedestrian.

"corn ear worms" and "cotton bollworm." Frequently exceedingly destructive to tomatoes. Dust with arsenate of lead undiluted, or (33 1-3 to 50 per cent) with hydrated lime. If fruit nearly ripe use great care with poisons. Do not spray within two weeks of coloring. Begin applications when fruit begins to set and continue at 10 or 15-day intervals, using from one to two pounds of arsenate of lead per acre for each application, according to the size of the plants. Plant sweet corn at suitable periods to serve as trap plants. The moths prefer the fresh silks of corn to tomato plants when depositing their eggs. If corn is used as trap, destroy all worms before they reach maturity.

Tomato Worms. (Are the larvae of two Sphynx Moths, Plegethonitus quinquemaculata How. and Plegethontius sexta Joh.). These large green caterpillars feed upon the foliage and are easily recognized. Due to their large size, it is very effective to hand pick the infested area. If very numerous spray with 19, or dust with arsenate of lead, using 50-50 mixture with hydrated lime.

Flea Beetle (Epitrix parvula Fab.). A very small beetle which works on the leaflets. As a repellent spray with 2 (b); for an insecticide, 19.

Twelve Spotted Cucumber Beetle. (Diabrotica soror Lec.). A small green beetle with 12 black spots on the elytra. The larvae work on a great variety of plants. Spray with 19. Repellant same as flea beetle or use 30 (c).

Cutworms. (See Beans, Peas, etc.).

Fungoid and Bacterial Diseases.

Winter Blight or Downy Mildew (Phytophthora infestans DB). Attacks nearly all of the plants of this family, killing the leaves and injuring the tubers. Plant clean seed. Disinfect doubtful seed with 7 or 8. Spray plants with 1 or 2 (a) as soon as symptoms first appear.

Root and Stem Rot (Corticium vagum var. solani Burt.). Causes a "damping-off" of seedlings. Also attacks the tubers of potatoes, the subterranean parts of the tomatoes, and the fruits touching the soil. Apply lime to aerate the soil. Rotate crops.

Dry Rot of Potatoes (Fusarium oxysporium Schl.). **Wilt of Tomatoes** (Fusarium lycopersici Sacch.) and **Wilt of Egg Plant** (Fusarium sp.). All produce a wilt upon the host plants, affect the roots, and may even cause a "damping-off" of seedlings. Treat seed with 7 or 8 before planting. Keep weeds out of fields in winter. Rotate crops, so as to have clean soil each year.

Early Blight (Macrosporium solani E. & M.). A typical leaf blight causing brown spots to appear on the foliage. Affects potatoes, tomatoes and daturas. Spray with 1 or 2 (a) when the plants are six inches high and repeat with three applications two weeks apart. Treat seed with 7 or 8 before planting. Rotate crops.

Potato Scab (Oosporascabies Thax.). Produces large rough blotches on the tubers. This disease cannot be dealt with while the plants are growing. Great care must be exercised in the matter of seed selection. Treat all seed of doubtful origin with 7. Rotate crops so as to keep the soil fresh.

SQUASH, PUMPKINS, CUCUMBERS, MELONS, ETC.

Insect Pests

Melon Aphis (Aphis gossypii Glov.). Attacks all parts of the vines, particularly feeding on under side of leaves, and is usually accompanied by a black smut which grows upon the honey-dew secreted by the louse. Spray with 16½ or dust with 30 (c).

Cucumber Beetles, Striped (Diabrotica Vittata Fab.) Twelve-spotted (Diabrotica soror Lec.). The larvae and adults of these beetles destroy flowers and foliage of the plants and gnaw the rinds of the fruit. Methods of control are as follows:

Repellents—Dust with gypsum or lime containing arsenate of lead on 50-50 basis. Insecticides—Dust with 30 (c).

Squash Bug (Anasa tristes DG.). Hand pick early in the season; also pick off eggs and destroy. Eggs are deposited in clusters on the leaves when the vines are very young. Trap bugs by laying boards loosely on the ground under which they crawl for protection. If very troublesome use 16½ or 30 (d). As soon as crop is harvested, gather and burn vines. Do not allow weeds to grow on the ground during winter months.

Fungoid and Bacterial Diseases

Downy Mildew (Pseudoperonospora cubensis Rost.). Disease first appears in the center of the vine and spreads outwardly. Spray with 1 or 2 (b) to which is added one gallon of sulphurous acid to every 100 gallons of spraying material. Repeat every ten days.

Leaf Blight (Alternaria brassicae nigrescens Pegl.). Produces spots on the leaves which spread very rapidly. This disease hastens ripening, injures production, and destroys the quality of the fruit. It particularly affects cantaloupes. Destroy affected plants as soon as they first appear. Spray often with 1 or 2 (b). Rotate crops.

Anthracnose (Colletotrichum lagenarium E. & H.). Forms circular dead spots on the leaves and long shrunken areas on the stems. The fruits of the watermelon are often badly spotted by this disease. Spray with 1 or 2 (b) as soon as fungus appears.

Common Wilt (Bacillus tracheiphilus Erw. Sm.). Produces a sudden wilt of the vines by stopping up the water-carrying vessels of the stems. Destroy infected plants as soon as infection appears.

Fusarium Wilt (Necosmopora vasinfecta var. nivea). Can be handled only by crop rotation.

Powdery Mildew of the Cucumber (Erysiphe polygoni DC.). Attacks other members of this group also. Forms a white powdery coating on the leaves and stems and soon kills the plants. Spray as soon as it first appears with 1 or 2 (b).

Seed houses often have admirable suggestions for the gardener and are usually able to supply small hand equipment which greatly facilitates spraying and dusting.

CELERY, CARROTS, PARSNIPS

Insect Pests

Celery Leaf-tyer (Phlyctaenia ferrugalis Hbn.). Destroys foliage, and its presence may be told by the many leaves which are curled and fastened together by this insect. It is particularly bad in greenhouses. Spray when worms first appear with 19 not later than three weeks before marketing crops, because of the danger of poisoning. Hand pick.

Cutworms. (See Beans, Peas, etc.)

Fungoid Diseases

Celery Blight, Early Blight (Cercospora apii Fr.). Produces spots upon the leaves causing them to turn yellow, to wilt, and finally kills them. This disease also affects parsnips, and usually appears early in the season. Spray early and repeatedly with 1 or 2 (a).

Late Blight (Septoria petroselini var. apii B. & C.). Produces rusty brown spots upon the leafilets which may rapidly spread to cover the entire foliage. Spray with 1 or 2 (a) throughout the season.

ASPARAGUS

Insect Pests.

Asparagus Beetle (Crioceris asparagi L.). Dust air slaked lime upon the plants when they are wet with dew. Apply dry lead arsenate or 19.

Fungoid Diseases

Asparagus Rust (Puccinia asparagi DC.). Attacks the bushy tops, producing black and red rust, the latter being the destructive stage. Keep the plants cut back until July 1. Apply dry sulphur three weeks after cutting tops and before rust appears. Make the applications in the morning when the plants are wet with dew, or first spray with 1 or 2 (b).

BEETS

Insect Pests

Wireworms. Plow in fall to destroy pupae. Plant early and practice clean culture. Trap adults by means of piles of straw and burn in late fall or winter.

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Gentleman is a term that does not apply to any station, but to the mind and feeling in every station.—Talfourd.

Fungoid Diseases

Curly Top (Blight). Plant as early in season as soil can be properly prepared and good germination and growth obtained. This varies in different districts from December 1 to March 1, according to temperature and rainfall. Finish thinning before hot weather. Irrigate early, and often enough to prevent wilting during spring and summer. The disease need not be feared unless the insect Eutettix tenella is abundant.

Seedling Root Rot. Replant if stand is too thin.

CORN, SORGHUM

Insect Pests

Corn Worm (Chloridea obsoleta). Is hard to deal with because it works on the ear in the husk. It is best handled by the rotation of crops, late plowing followed by harrowing to destroy the pupae in the soil, and by planting crop as early as possible to assure rapid growth. Dust lightly with arsenate of lead two parts and sulphur or lime one part, three to five days after silk appears.

Wireworms. (See under Beans.)

Fungoid Diseases

Smut (Ustilago zeae Ung.). Causes enormous enlargements of the kernels, producing large sacs of smut. Cut off and burn the first infestation. Treat seed with 7 or 8 before planting. Rotate crops.

GRAIN

Rust. No remedy. Some varieties are more resistant than others.

Smut. Seed grain should be carefully cleaned of smut balls, weed seeds and small cracked and inferior grains before treating. The smut balls in wheat and smut masses in barley may be cleaned out in fanning mills or floated out in water and skimmed. Place the cleaned seed in half-filled sacks tied at the end. Immerse these sacks for three or four minutes in a bluestone solution, 4 (a). Drain the sacks until dripping no longer occurs, then dip them for three minutes in 4 (b). The lime prevents injury to the germ from the bluestone. If quicklime cannot be secured, air-slacked lime, 1 pound to 8 gallons of water, may be used. After thus treating, the grain should be spread out to dry, after which it may be planted or stored.

Oats are especially sensitive to bluestone and in this case it is better to use a solution of formaldehyde, 1 pound to 40 gallons of water, for ten minutes, after which no lime dip is needed. Barley is more sensitive than wheat and should always be lime-dipped after treatment with bluestone.

Garden Pests

By Ernest Braunton

Argentine Ant

The most serious garden pest is the Argentine ant, for it not only protects and encourages the many species of scales, aphids and mealybugs, but combats all beneficial insects that would rid us of these pests. So productive of young are these ants, and they are present in such numbers, that sprays or quick acting poisons are but temporary measures. No. 23 is a slow acting poison that is carried to the nest and fed to young and queens so that the colony is entirely destroyed.

Red Spider

Next in importance and especially bad in dry years and in hot weather, to a degree hardly ever realized by garden owners, is red spider. When leaves turn yellow (and drop) from peach or orange trees, beans, violets, hollyhocks and a long list of plants, red spider is usually the cause. Plants sprinkled daily never get red spider and persistent sprinkling in an effective control. If the weather and soil surface is hot and dry flowers of sulphur will generate fatal fumes that quickly rid plants of the spider, or use 30 (b).

Plant Lice

Aphids or plant lice are bad on many ornamentals, and in the vegetables from artichokes through cantaloupes and on till you come down the alphabet to watermelons. Forty per cent nicotine and resin soap are good, as is nicofume. For the small garden owner nothing is better than the commercial resin soap put up in cans, with printed directions for use on the can labels.

Mealybug

In some gardens mealybug is, next to ants, the worst pest. For this nothing is so good as "fierce" spraying with water. The individaul insect should be hit by the force of the spray. No other remedy is so good, as applications of anything strong enough to kill the bugs at once will also severely injure the plants. Frequent sprayings must be made and in the end the gardener finds water the best.

Black Scale

With black scale, if a professional fumigator is not available, the commercial can of resin soap recommended for aphids is best. It may be mixed at home as in No. 12. Peach curl is prevalent throughout the state in dooryard gardens and Bordeaux mixture in cans or home made as in No. 2 is best.

San Jose Scale

Lime-sulphur as in Nos. 9 and 10 is the second best general fungicide and the best insecticide for San Jose scale which is again become prevalent in garden trees. Spray in winter with lime-sulphur and in spring just before buds swell with Bordeaux mixture.

Mildew

The latter is also effective for mildew, and sulphuric acid, one part to 1,000 of water is also good. If you have but three or four rose bushes, sprinkle with sulphur on hottest days or heat a brick in oven, place under bush and lightly sprinkle with sulphur over all upper surface of brick while it still is hot.

This disposes of the worst of the many pests that harass the home gardener.

STATE AND FEDERAL QUARANTINE

(Continued from Page 311.)

stead of at large in California orchards.

The quarantine inspectors not only meet these incoming vessels but trains and automobiles at the eastern borders of the state. A graphic demonstration was made at the recent state fair where Chief Quarantine Officer Lee A Strong of the department of agriculture showed hundreds of specimens, many of them very injurious insects, which have been taken from incoming automobiles by the five quarantine officers maintained along the eastern boundary. Many an automobile has been found coming into California carrying a bale of hay purchased in the alfalfa weevil districts of Nevada.

The quarantine inspectors wear the badges of the state and federal departments of agriculture. The service is, however under supervision of Director Geo. H. Hecke of the department of agriculture. The personnel of the quarantine service of California is as follows: Sacramento; Lee A Strong, chief quarantine officer. San Francisco; George Compere, quarantine officer; Archie Chatterley, Stewart Chatterly, George Wilson, H. H. Clendenen, A. P. Messenger, S. G. Langford, inspectors. Los Angeles; C. H. Vary, quarantine officer; J. W. Mashmeyer, inspector. San Pedro; A. C. Fleury, J. M. Olsen, inspectors. Calexico; O. A. Pratt, collaborator. San Diego; L. E. French, inspector. Long Beach; Frederick Maskew, collaborator. Border inspectors; Truckee, Paul E. Lewis and A. C. McKinlay. State Line, Ernest Oliver. Reno Junction, F. Roedewald.

Recent Investigations of Dusting for Control of Insect Pests

By A. W. Morrill, Consulting Entomologist

MANY entomologists and plant pathologists in the United States and Canada are conducting investigations of dusting as a substitute for liquid sprays against important pests of fruit, vegetable and other crops. When conditions and equipment at hand give a choice of either method, the mechanical advantages of dusting as compared with liquid spraying have been generally recognized by all who have tried out both methods. Neither dusting nor wet spraying is without its limitations. The dust method of applying insecticides and fungicides has been greatly restricted in the past by the lack of definite knowledge concerning the comparative effectiveness of the various available dry insecticides when applied with air as the carrier instead of water and also by the limited list of insecticides adapted for application in dust form. Investigations conducted during the past few years and now in progress with increasing interest are rapidly advancing the dusting process to its proper place in connection with the control of insect pests and plant diseases.

It is now acknowledged that dusting with insecticides is not merely a substitute for liquid applications. In several cases dry applications have proven practicable when wet applications were impracticable, and in other cases dusting has proved so far superior to wet spraying that the latter is not to be considered as a regular practice. The application of arsenical poisons to cotton in an effective and practicable manner for control of the cotton boll weevil was out of the question as a liquid spray process but dust applications have been demonstrated as successful and are now being widely used under the advice of the bureau of entomology of the United States department of agriculture. The only known method of protecting sweet corn against the attack of the corn ear worm consists in poisoning the fresh silks with a mixture of an arsenical with sulphur or lime.

Among the instances of insect pests in the control of which dust applications have proved distinctly superior to wet applications may be mentioned the walnut aphis, pear thrips, melon aphis, cabbage aphis, cabbage worms and tomato fruit worm.

In general, arsenical poisons may be applied either as a dry or as a wet spray according to the convenience of the grower and the available equipment. Winds are a much more limiting factor in connection with dry than with wet applications. On the other hand, soil conditions following rains or irrigation, sloping land, remoteness of a water supply, and need for covering large areas in a minimum time at critical periods are factors which limit wet spraying and favor dust applications.

Generally speaking, the failures with dust applications in the past have been due to the ineffectiveness of the materials tested. In some instances, we will probably never have insecticides or fungicides in dry form which will be as effective as wet sprays. We have already noted that the reverse is also true in some instances. That dust sprays should have proven successful in connection with such a difficult problem as that of the control of the cotton boll weevil, indicates that this method of applying poisons is by no means one which is limited to the insects which are the easiest to control.

Recent Publications by Investigators

Among reports of recent investigations of dusting experiments it is unnecessary to do more than mention here circular No. 154 of the United States department of agriculture, by Roy Campbell, of the Alhambra laboratory, entitled "Nicotine Sulphate in a Dust Carrier Against Truck Crop Insects." Prof. Essig's circular No. 223 of the University of California experiment station, entitled "The Pear Thrips," likewise needs no detailed review. Leroy Childs, superintendent of the Hood River branch of the Oregon agricultural experiment station, is author of a bulletin dated July, 1920, which gives important results concerning the use of dust and liquid sprays against codling moth. In these Oregon experiments it was found that "the dusting method if properly applied has been found to control effectively scab and codling moth in the Hood River valley. Dusting, Mr. Childs estimated, would cost at 1920 prices $31.77 per acre, spraying with spray rods $33.72 per acre, and spraying with spray guns under 250 pounds pressure, using a 3½-horsepower sprayer, $28.45. It is obvious that dusting, particularly with hand operated bellows dusters, has its proper place in small orchards or home orchards where power sprayers of large capacity are not available.

At the last annual meeting of the American Association of Economic Entomologists, several valuable papers were presented on the subject of dusting vs. wet spraying. These were by Prof. P. J. Parrott, of New York agricultural experiment station, and Dr. T. J. Headlee, of the New Jersey agricultural experiment station, and Dr. A. L. Quaintance, of the United States bureau of entomology. Prof. Parrott reported success in the use of nicotine dusts against three species of apple aphids, the apple red bug, nymphs of apple and grape leaf-hoppers, currant aphis, etc. The pear psylla and woolly apple aphis were reported as comparatively resistant to nicotine dusts. Dr. Headley reported very successful results with nicotine dusts against the apple leaf hopper and the oat aphis on apple, but against the codling moth and apple scab he reported a variability in results with the sulpho-arsenical dusts which he ascribed to the effects of rain. Dr. Quaintance reported results of experiments conducted in many localities throughout the country. In the northern section where codling moth is not especially severe, the investigations of the agents of the department of agriculture working under Dr. Quaintance secured control which was fully as good as that by liquid sprays. In certain other sections the results were "notably less effective" than with liquid sprays.

Investigations in California

At the present time considerable work is being conducted in California with dust insecticides. At the recent meeting of the Pacific Slope branch of the American Association of Economic Entomologists, several papers were presented on the use of dusts against various insect pests. Professor Essig, of the University of California, presented a general review of dust spraying, giving some results of his own recent investigations. Of special interest were his 1921 investigations of "pear thrips" control, which he stated corroborated the results secured the previous season as reported in circular No. 223.

During the past few months, the writer has given considerable attention to experiments with dust applications of insecticides. Special attention has been goiven to the control of the tomato fruit worm and the melon aphis, while valuable information has been secured in connection with many other insect pests.

Dusting for Tomato Fruit Worm

During the past March and April, while on an extended visit to the west coast of Mexico in connection with various entomological projects, considerable attention was given to the control of the tomato fruit worm. This insect which is also known as the corn ear worm and cotton boll worm, occurs practically everywhere in the United States. The damage to tomatoes is unusually severe in the tomato growing sections of the west coast of Mexico, in March and April, 1921, ranging from 12 per cent to 34 per cent of the crop in different fields. It was found that an application of a 50-50 dust mixture of arsenate of lead and hydrated lime gave a two-thirds control. It is estimated that this method of applying the poison if adopted early in the season would have saved fully $100,000 to the tomato growers in one district. In

dusting fully grown plants with about 2100 plants per acre, it was estimated that about 2½ pounds of arsenate of lead were required per acre.

Control of Melon Aphis by Dusts

In connection with experiments in the control of the melon aphis, a favorable opportunity was found for determining the increase in the marketable crop resulting from the control of the aphis. An area of about one-half acre in the midst of a badly infested section of a field was dusted early in July. At the time the application was made the outlook was so discouraging that it did not seem likely that any of the plants would survive to produce marketable melons. Six weeks later, however, at the beginning of the harvesting season, a careful survey of the dusted plants and the immediately adjoining undusted rows showed that the increase in the number of marketable melons due to the dusting amounted to approximately 75 per cent. The undusted plants in this section of the field did not pay expenses, while the dusted plants are still setting fruit and will make practically a normal crop.

Experiments conducted in the Imperial Valley as well as in Los Angeles County served to emphasize the importance of early season scouting for the melon aphis. In a successful campaign against the melon aphis it is very essential that the earliest infestations be located and that as the season advances the dusting operations be extended to keep the infestation well in hand at all times. Conditions in the Imperial Valley were unusually favorable for the spread and multiplication of the melon aphis during the past cantaloupe season. Cool weather restricted the increase of parasites and high winds served to spread the winged adults. Dusting with nicotine dust was extensively tried by the growers but in most cases the early season treatments were neglected. The ladybugs were present in large numbers in the melon fields visited but very few eggs were being laid and it was obvious that the adults were not destroying enough of the aphids to contribute appreciably to effective control. It was observed that their most effective work consisted in cleaning up the surviving aphids after the dust treatment.

Nicotine Dust for Woolly Apple Aphis

While nicotine dusts have been reported as comparatively ineffective against the woolly apple aphis, preliminary tests made by the writer have shown a remarkable susceptibility to a dust containing over 1.6 per cent nicotine with hydrated lime as a carrier. Although only a few trees have so far been treated, results have been uniformly successful. In the experimental work a hand operated bellows duster was used. This type of duster is better suited than any other for treating the woolly apple aphis on the trunks and branches of trees, owing to the fact that the insects occur in distinct colonies around the edges of cuts on the trunks and branches, also on the smaller twigs. This type of machine therefore permits the operator to send dust directly towards the infested parts of the tree. When a suitable dust is used this method of control is believed by the writer to be far more economical and effective than the use of wet sprays.

FORMALDEHYDE PREVENTS SMUT ATTACK

There is no insurance which is cheaper and really easier to buy and apply than protection against loss from smutty wheat. To treat the wheat all that is necessary is to first fan the wheat to remove light and smutty kernels or, in case there is no fanning mill available, the wheat can be slowly thrown into water. The heavy kernels will sink and the light ones can be skimmed off the surface of the water, the object being to get the sound, heavy kernels for seed and to treat only the sound heavy seed.

This information is furnished by Alvin Kezer of the Colorado agricultural college in response to numerous inquiries which have been received lately from farmers of the state.

The easiest method of treatment is to use formaldehyde, one pound of formaldehyde to 40 gallons of water. There are machines for treating the seed, but perhaps on most farms the easiest way is to put the seed in a wagon box or on the floor or canvas and sprinkle the same with the freshly made formaldehyde solution. The pile of grain should be sprinkled, then turned with a shovel, much as concrete is mixed, repeating the sprinkling and turning until the outside of all of the grain is moist. The pile of grain should then be covered up and allowed to stand for about two hours, when it should be uncovered and the air be permitted to circulate over it. If the seed is left covered up too long the germination of the wheat itself will be damaged.

Formaldehyde treatment will kill all of the smut spores on the outside of the wheat kernels. But it is possible to re-infect the seed if the drill is dirty or if the sacks used to carry the grain to the field are dirty from smut. The precaution should, therefore, be taken to either treat the sacks and the drill or to wash them out thoroughly. The easiest way is to use some of the formaldehyde solution and spray the inside of the drill and dip the sacks that are to be used, so that smut will not be put back onto the grain seed.

It will only cost about 50 to 75 cents an acre to carry out the complete process of treating to prevent smut where all labor is charged. This is very cheap insurance, because it may mean the difference between no crop at all and a practically perfect crop. All seed wheat should be treated.

GRAPE SCALE

According to Prof. E. O. Essig of the state university, there appears to be no published record of the occurrence of grape scale (Aspidiotus uvae Comst), in California. Specimens were collected from the American vine of the Catawba variety at Oakland, November 7, 1919. The scales of this pest were abundant upon the old canes as well as on the one year old wood, and were usually hidden under the bark of the host plant. Although the scale insects found attacking the grape appear to be numerous, practically none of them are of any importance in commercial viticulture, but some are at times very troublesome in small household vineyards.

In the province of Chaco, Argentina, there are more than 100,000 mandarin orange trees, also lemons and Seville oranges, according to a late report of the Argentine minister of agriculture. "Chaco is admirably suited to the cultivation of citrus trees, which grow very large and yield abundant crops, an orange tree producing 1500 to 5000 and even 8000 oranges there. Of diseases and enemies are to be noted gummosis and the scale insect, Mytilaspis citricola; up to date this latter has not caused much damage."

Some Important Developments in Spraying and Dusting

By F. A. Frazier

DUST spraying is not new. The dusting method for the control of lice has been practiced by the feathered creation ever since the first hen laid the first egg.

This revival of interest in dusting is already making available to the fruit grower and the farmer the best features in both methods. There should be no rivalry nor conflict between liquid spraying and dusting. Each has its place in the economy of farm and orchard operations. The day is near at hand when every well equipped farm and orchard will have a dust machine and a spray pump just the same as they have a plow and a disk.

The causes of the apparent failures in dusting in the past are being discovered. The knowing how to dust is being recognized as just as essential as knowing how to spray. Up-to-date experiment stations will no longer be dividing hairs as to which is better, the liquid spraying or dusting, but will undertake to teach when and how to dust, and what kinds of materials to use. Already the work done by investigators from such institutions as the University of California and Cornell of New York has put the dusting method for certain purposes beyond the experimental stage. The investigation of this method has been taken up by the United States department of agriculture and by the Canadian department of agriculture, with the result that today the dusting method stands equal in point of effectiveness with liquid spraying for such insect pests and plant diseases as codling moth on apples, pears, and walnuts; scab on apples and pears; walnut aphis and pea aphis, and most all aphids except the woolly varieties; thrips on pears, prunes, and cherries; red spider on trees and field crops.

The development of nicotine impregnated materials is responsible for the successful control of aphids and thrips by dusting. Investigations in the past season have brought out marked improvement in dusting material combinations, such as sulphur in the nicotine dust materials, wherein the sulphur is shown to greatly increase the effectiveness of the nicotine.

In the Eastern states and in Nova Scotia, a dust material made by dehydrating copper sulphate and combining it with lime dust, is proving a most valuable fungicide. Professor G. E. Sanders, Dominion entomologist, in charge of insecticide investigations in Annapolis Valley in Nova Scotia, is responsible for the development of the dehydrated copper sulphate and lime dust mixture, and he has brought it into general use in Nova Scotia for apple scab control.

Professor Sanders has also discovered the cause of serious injury resulting from the use of lime-sulphur sprays, particularly where heavy dropping of apples has resulted from the lime-sulphur sprays in common use. Injuries following the use of such sprays had become so pronounced that their use has been abandoned, and in their stead the Nova Scotia orchardists have adopted the soluble compound of sodium and sulphur as being far safer and, at the same time, equally effective as the lime-sulphur for dormant and pre-bloom sprayings.

In the southern peach growing districts the dusting with sulphur is being found the most satisfactory control for the peach brown rot. It has been found that the sulphur dusting of peaches shortly before picking insures their keeping better while in cold storage before being put on the market. Dusted fruit is being demanded by the New York buyers because of its cleaner appearance and the freedom from excess spray residue. This latter point should have some significance to the pear grower of California.

It should not be inferred that failures have not attended efforts with dusting, the same as with liquid spraying, in the past. The greatest care must needs be exercised in the selection of very fine dusting materials. Fineness is all important. The manner of application is easily understood. The time of application is of considerable importance. Dusting at night is coming strongly into favor. The heavy night air, even in the drier regions, is conducive to better distribution of the dust material. No one will be found seriously objecting to doing the work at night when the advantages in the method are borne in mind.

The intelligent fruit grower and farmer will surely want to make use of this method for its known advantages, and will be alive to the unbounded possibilities in its future development.

Three New Records

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Dr. A. W. Morrill, Consulting Entomologist, reports the results obtained in his recent experiments with "Calispray" Dust and the American Beauty Dust Sprayer as follows:

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"**Tomato Fruit Worm:-** Dusting with American Beauty Dust Sprayer using arsenate of lead and hydrated lime prevented two-thirds of damage. Best results reported with wet spray with thorough experimental application gave only 50% control.

"**Woolly Apple Aphis:-** Very susceptible to 'Calispray' Dust No. 1. A much more practicable and effective method of controlling pests above ground than liquid spraying."

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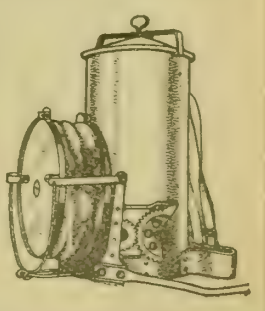

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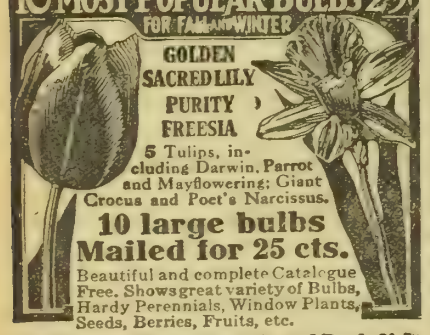

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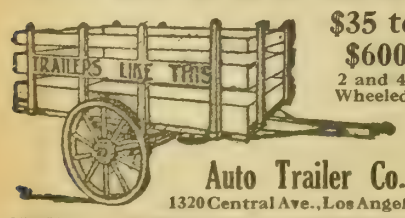

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Household Department

THE QUITTER

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And Death looks you bang in the eye,
And you're sore as a boil, it's according to Hoyle
To cock your revolver—and die
But the code of a Man says: "Fight all you can,"
And self-dissolution is barred.
In hunger and woe oh, it's easy to blow—
It's the hell-served-for-breakfast that's hard.

"You're sick of the game.." Well, now, that's a shame.
You're young and you're brave and you're bright,
"You've had a raw deal..' I know, but don't squeal.
Buck up, do your damnedest and fight.
It's the plugging away that will win you the day.
So don't be a piker, old pard!
Just draw on your grit it's so easy to quit;
It's the keeping-your-chin-up that's hard.

It's easy to cry that you're beaten—and die;
It's easy to crawfish and crawl;
But to fight and to fight when hope's out of sight—
Why that's the best game of them all!
And though you come out of each gruelling bout,
All broken and beaten and scarred,
Just have one more try—it's dead easy to die,
It's the keeping-on-living that's hard.
—Robert W. Service.

FOOD PESTS AND GERMS AND THEIR CONTROL

By W. V. Cruess, University of California

DRIED fruits are often infested in the household with insects, the most common of which is the Indian meal moth, Plodia interpunctella. There are two very simple methods of controlling this pest in the household. Fruits or vegetables which have been dried in the sun should be immersed in boiling water for about one minute before they are put in the container for storage. The products must be very dry in order that the dipping process shall not cause them to absorb enough water to become moldy. In other words, the fruit should be dry enough to rattle on the trays. The one minute's immersion in boiling water will destroy the eggs of insects which are inevitably and invariably deposited on fruits which are dried in the sun. Fruit may also be disinfected by the use of carbon busulphid, which may be obtained from any drug store. In using this material the fruit may be packed loosely into a large stoneware jar or wash boiler and the carbon bisulphid poured in a saucer which is placed on top of the dried fruit. The jar or wash boiler should then be covered as nearly air tight as possible and allowed to stand for 24 hours or longer. The fruit may then be removed and packed in insect proof containers.

(Caution: Carbon bisulphid is extremely inflammable and explosive, therefore do not bring lights near the fumigating receptacle.)

Fruits and vegetables that have been treated by hot water or by carbon bisulphid should be put in containers that will exclude insects. Old coffee cans or old tea tins or other tight containers are suitable. Fruit that has been dipped in boiling water may be allowed to drain for a half hour before packing. Fruits and vegetables that have been dehydrated in small household or large commercial sized plants do not require special treatment to kill insects provided they are packed immediately after they are taken from the dehydrator. At the present time there are several hundred household size evaporators in use in various parts of the state.

Mold in Dried Fruit

Dried fruit which contains too much moisture at the time of packing will become moldy. If the development of mold has not proceeded too far the fruit may be spread in the sun or placed in the oven and dried sufficiently to keep. It is recommended, however, that fruit infested with mold be dipped in boiling water for at least one minute in order to kill the mold. It may then be dried sufficiently to preserve it. Peaches and apricots that have started to become moldy may be saved if they are plunged in boiling water for a few minutes and then sulphured in the fumes of burning sulphur. The sulphur is a very strong germicide.

Mold on Jellies, Jams and Preserves

If these products are not boiled down sufficiently they may develop mold. It is recommended that in their preparation a thermometer be used and that all jellies, jams and preserves be boiled to 220 or 221 degrees Fahrenheit. This will insure that they contain enough sugar and a small enough proportion of water to keep indefinitely. Should mold appear on jelly or preserves it should be skimmed off and the product recooked. If a jelly, preserve or jam less sweet than is customary is desired the product may be boiled to a lower temperature than 220 provided that it is sealed scalding hot in jars in the same manner that fruit is sometimes put up. This will sterilize the product and exclude mold so that a high concentration of sugar is not needed.

Mold in Fruit Juices

In the home preparation of fruit juices it sometimes occurs that mold will develop in some of the jars or bottles. Where this happens the bottle or jar may be opened and mold removed and the product sterilized in a sealed container at 175 degrees for 30 minutes.

Souring of Canned and Preserved Fruits

Jellies, jams, preserves and canned fruits often become "sour," a term which ordinarily means in the household, yeast fermentation. When this occurs in jellies, jams and preserves it means that the products have not been cooked down sufficiently or that they have not been sterilized in the sealed containers. The remedy is the same as that given for the molding of jellies, jams and preserves above.

In canned fruits it may mean yeast fermentation or perhaps Bacillus botulinus. The yeast growth will develop an alcoholic odor whereas botulinus usually gives warning by the development of a sour cheese odor. In either case it is recommended that the product be not tasted until it has been thoroughly boiled. The souring of canned fruits or vegetables is an indication that the jars are not properly sealed or that the product has not been sufficiently sterilized. It is recommended that fruits be sterilized in the jar or wash boiler or similar sterilizer for at least 20 minutes after the water in the boiler has begun actively boiling. This will avoid souring in the jar provided good rubbers and caps are used.

(Caution: Never taste soured canned or preserved fruit until they have been boiled.)

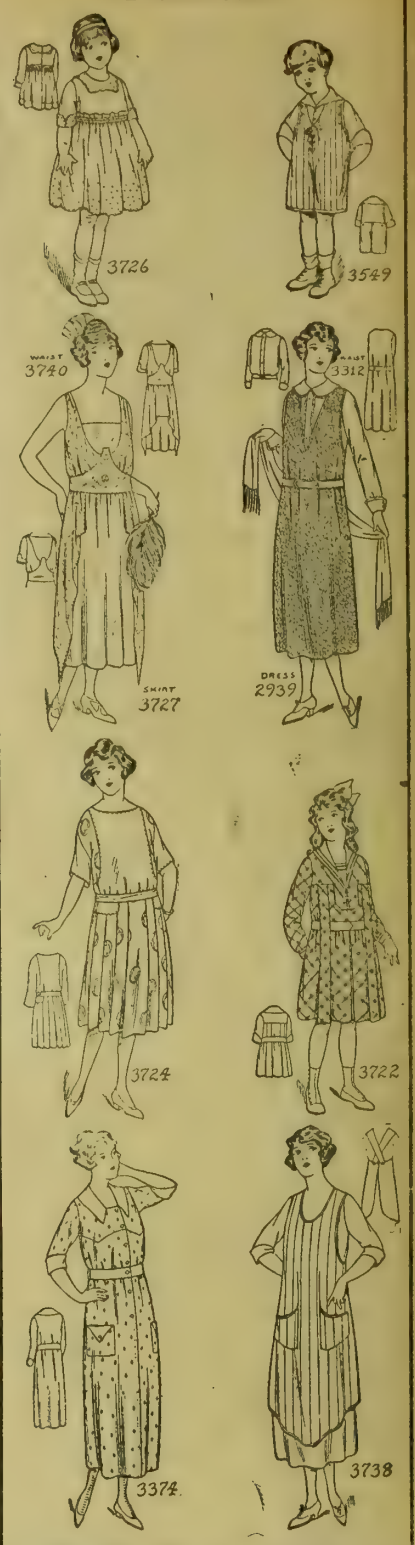
Spoiling of Canned Vegetables and Meats

Vegetables and meats are very difficult to sterilize and unless the home canner uses a pressure cooker she will have a large number of soured jars or cans in most cases. Pressure cookers may be obtained from most hardware stores or large grocery stores and will be found very useful, not only for canning purposes, but for cooking purposes as well. If a pressure cooker is not available it is recommended that the vegetables be canned in acidified brine. That is to say, pack the meats or vegetables into a jar loosely—do not pack them too tightly. Add a boiling hot brine consisting of three level tablespoons of salt and ¾ cup (six fluid ounces) of lemon juice per gallon of water. Sterilize the jars and contents in the wash boiler sterilizer for two hours for vegetables and three hours for meats. Boil products thoroughly before serving.

(Never taste sour canned vegetables or canned meats until they have been boiled for at least 30 minutes.)

Soft Pickles

Home made pickles often soften or become moldy or slimy, usually because insufficient salt has been used. Souring will often occur also if the product is not sealed in air tight containers to exclude air and mold. Dill pickles will usually not become soft if the brine used in their preparation is acidified with about one-half pint of vinegar to a gallon of water. The brine used for dill pickles should also

The Cultivator Patterns

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3740-3727. A Pretty Evening Gown—Waist 3740 cut in six sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Skirt 3727 cut in six sizes: 24, 26, 28, 30, 32 and 34 inches waist measure. To make the dress as illustrated will require for a medium size, 4⅛ yards of plain and 3¼ yards of figured material 32 inches wide. Of one material 44 inches wide 6 yards will be required. The width of the skirt at the foot is about 2¼ yards. TWO separate patterns 10 cents FOR EACH pattern.

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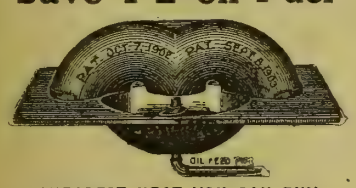

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contain about a half a pound of salt to the gallon. Where pickles have become soft it is advisable to bring them to the boiling point in water in which there is dissolved about two tablespoons of alum per gallon. Ordinarily brine in which the pickles have been stored should also be boiled and returned to the pickles after they have been removed from the alum solution. If sour pickles tend to become soft transfer them to new vinegar and at the same time heat them to the simmering point for one or two minutes.

NEW SUNSWEET RECIPES

Here are some of the new Sunsweet recipes selected by the California Prune & Apricot Growers for 1921-22. All are tested and found delicious. Others will be given later in this department. They are worth trying and filing.

Prune Salad—Pineapple Dressing

Cooked Sunsweet prunes, pitted and drained; allow 4 prunes and 1 slice of pineapple for each service. Place the pineapple on crisp lettuce leaf. Fill prunes with a small portion of salad dressing and arrange around the pineapple. Place a spoonful of dressing in the center on the pineapple and sprinkle with chopped walnuts. For dressing melt 2 tablespoons of butter, add 2 tablespoons of flour; ½ teaspoon salt; ¼ teaspoon dry mustard, and mix well; cook until frothy, then add 1 cup of pineapple juice and 1 teaspoon lemon juice. Pour over 1 well beaten egg or 2 egg yolks. Cool. A half cup of whipped cream may be added.

Prune and Orange Cocktail

Drain and remove pits from cooked Sunsweet prunes and cut in quarters. Allow ½ orange and 4 prunes for each service. Cut oranges in half and remove the pulp with a spoon, discarding all membrane. Mix prune and orange pulp, add a little lemon juice and sweeten if necessary. Serve very cold in sherbet glasses or in the orange shells.

Apricot Square

Two cups sifted flour; 1 teaspoon salt; 4 teaspoons baking powder; 1-3 cup sugar; 1 egg beaten; ¼ cup shortening; about ½ cup milk; 1 pound Sunsweet (dried) apricots. Wash and soak apricots in warm water for several hours. Sift all dry ingredients; rub or chop in shortening; add beaten egg and milk gradually, mixing with knife to consistency of biscuit dough. Turn on slightly floured board, roll about ½-inch thick to fit shallow greased baking pan. Drain apricots, arrange in even rows over entire surface of cake. Sprinkle with sugar; bake in medium hot oven about twenty minutes. Cut in squares and serve hot or cold.

Suprise Charlotte

Take 1½ cups Sunsweet (dried) apricot pulp; 2 cups whipped cream; 1-3 cup powdered sugar; 1 teaspoon vanilla; lady fiingers. Whip cream, add sugar and vanilla; line individual serving dishes with lady fingers; add whipped cream—keeping a well in the center; fill center with apricot pulp, then cover top with whipped cream; sprinkle with chopped nuts. Serve very cold.

Prune Pie

Two cups Sunsweet prunes; 1-3 cup sugar; 2 teaspoons butter; 2 tablespoons flour; 1 teaspoon lemon juice. Wash Sunsweet prunes and soak in cold water to cover two hours or more. Cook slowly in same water until soft. Remove stones, cut in quarters, and mix with sugar and lemon juice. Line plate with pastry, cover with prunes, pour over prune juice, dot with butter, dredge with flour, put on upper crust and bake in moderate oven.

Prune Cream Pie Filling

One cup Sunsweet prunes put through coarse sieve; ½ cup chopped walnuts; 1 cup scalded milk; 2 eggs; 1-3 cup sugar; 1 teaspoon flour; 1 teaspoon vanilla. Mix sugar and flour; add to beaten eggs; pour the scalded milk over the egg mixture. Add Sunsweet prune pulp and walnuts, mix well and pour into a pan lined with pastry; sprinkle nutmeg over the top. Bake as for custard pie.

Prune Sweetmeats

Wash Sunsweet prunes and bake in a slow oven until plump. Do not add water. Cool, remove pits. Mix finely chopped walnuts or pecans with enough orange marmalade to make a paste. Stuff prunes with mixture. Brush prunes with unbeaten egg white and roll in powdered sugar, or dip in melted sweet chocolate.

Prune Patties

One-half cup Sunsweet prune pulp; 1 tablespoon sugar; 1 teaspoon flour; ⅛ teaspoon salt; ¼ teaspoon nutmeg; 1 yolk egg; ½ cup scalded milk. Beat yolk of egg; add sugar, and remaining dry ingredients, line 6 patty pans with flaky pastry, fill with the mixture. Bake in a medium hot oven until firm. Cool slightly, cover with meringue made of stiffly beaten egg white and 2 tablespoons sugar. Bake in slow oven eight minutes.

There are many thoroughly satisfactory proprietary remedies for household pests, which are offered for sale in convenient and economical form.

Stuffed Prunes

Wash Sunsweet prunes in warm water, dry, remove pits and set in a warm oven until plump. Then, fill centers with marshmallows.

HINTS FROM HOUSEKEEPERS

Prune Recipes

In recent Cultivator a subscriber asks for a few prune recipes. I'm a prune grower and delighted to help you.—Mrs. P. Ferran, Napa.

Prune Cake—1½ cups sugar, 3 tablespoons butter or other shortening, 4 eggs, 4 cups flour, 3 tablespoons ground chocolate. Moisten with hot water with 1 cup sour milk in it, a teaspoon baking soda, 1½ cups stewed prunes, 1 teaspoon each mace and ginger, also 1 teaspoon baking powder. Filling—1½ cups stewed prunes, juice 2 lemons. Set on stove and add sugar to taste and cornstarch to thicken. Spread between layers. Instead of icing use powdered sugar, or boiled icing is nice and a little icing on filling is very delicious.

Another Prune Cake—1½ cups butter, cream with 1½ cups sugar, 3 eggs well beaten, 3 cups flour sifted with 3 teaspoons baking powder, 1 cup prunes, 3 tablespoons chocolate moistened with a little boiling water, ¾ cup milk, ¼ cup prune juice.

Prune Pie—Line pipe plate with pie crust, fill with stewed prunes, a little juice, mace, cinnamon, nutmeg. Cover with crust and brown.

Prune Tarts—Take rich pie crust. Cut in squares. Put in three or four stewed prunes, little sugar, spice if you like, roll over edges as you do apple dumpling. Bake brown. Very nice when putting up lunches.

Prunes may be used in steamed puddings, also in bread. The housewife will find this a saving.

A little lemon added when stewing prunes improves the flavor.

Take nice prunes. Remove pits, place a piece of walnut in center of each, roll in powdered sugar.

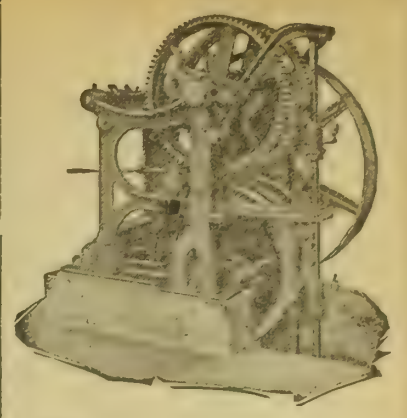
Chopped prunes are very nice in fudge.

Use Sunsweet prunes for good results.

More Good Prune Recipes

Prune Pudding—Heat a little more than a pint of sweet milk to the boiling point, then stir in gradually a little cold milk in which you have rubbed smooth a heaping tablespoon of cornstarch. Add sugar to suit your taste, 3 well beaten eggs, 1 teaspoon butter and a little nutmeg. Let this come to a boil, then pour in a buttered pudding dish, first adding cup of stewed prunes which have been stoned. Bake for 20 minutes. Serve with cream.

Prune Fluff Tart—20 medium sized stewed prunes, 3 egg whites, 6 tablespoons sugar, pie crust. Stone the prunes and press through coarse sieve. Beat whites of eggs until stiff and add sugar gradually, then add prune puree



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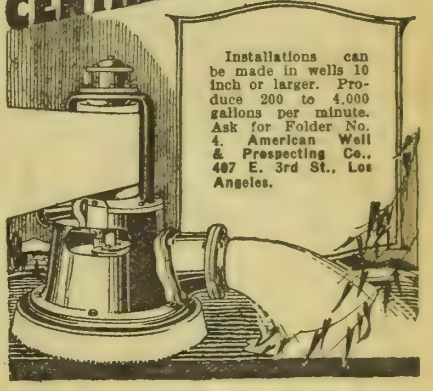

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and beat thoroughly. Add lemon juice, if liked. Have ready a partly baked under crust and pour in the prune mixture. Bake about 20 minutes, chill and spread lightly with whipped cream.

Prune Cake Filling—Drain cooked prunes, remove stones and measure 1 cup chopped fine. Add one-third cup orange marmalade, one-third cup finely chopped walnuts, 1 teaspoon lemon juice. Mix well and spread between the layers. This can be used with the usual layer cake recipe.—Mrs. Lilly M. Robertson, Kerman.

Spanish Omelet

This recipe for Spanish omelet has long been a favorite dish in our family: Ten eggs well beaten, 1 level teaspoon salt, pepper to suit, one-half cup milk. Add milk to eggs, salt and pepper and cook until eggs are set.

In another kettle cook until done: 6 ripe tomatoes or one-half can of tomatoes, 1 chile pepper chopped fine, 1 medium sized onion chopped fine, 1 clove garlic (if you like it), I teaspoon salt. Thicken with 1 tablespoon butter mixed with 1 tablespoon flour. Place omelet on platter and pour over it tomato sauce. This serves six persons.—Mrs. J. Freeman, Pond.

Two Canning Hints

This is the season for preserving and canning and I wish to tell the women readers two things. One is when scalding tomatoes to can; the other is how to make first class preserves.

Place tomatoes in a ripped sugar sack or other thin muslin. Dip in quantity of boiling water until skin slips, then dip into cold water. This prevents the skin from tightening as they cool.

When making preserves or spiced fruit never let them cease boiling after they begin. You will find it less work and the preserves will be lighter in color.—A Subscriber.

Brined Cucumbers—Fig Preserves

We have read the Cultivator with the greatest pleasure and benefit for six years and I have found especial help in the cooking and canning recipes in the home department. I am sending two tested recipes my mother used in Wisconsin, and I have used in California for 16 years.

Brined Cucumbers—Pick your cucumbers about four inches long, wash and pack in layers. Over each layer sprinkle a handful salt. Continue till crock or keg is two-thirds full, or as many as you can pick every other day. Put on earthen plate or board made round to fit crock or keg and put stone or heavy weight on to keep cucumbers submerged. The salt and pickles will make their own brine and will keep all winter.

Fig Preserves—Pick soft, ripe figs. Peel and skin. Put in granite kettle. Add about half or one-third as much sugar as figs. If figs are very sweet one-third is enough. Let stand over night in a cool place and they will make their own juice. Next morning stir with spoon, place on slow fire and let simmer 2 hours. Add a few slices of lemon and boil half hour longer. Put in fruit cans and seal hot. Will keep for years.—Mrs. W. H. Dyar, Fillmore.

Correction

An error was made in printing recipe for soft cookies sent by Mrs. Lilly M. Robertson of Kerman. We give correct formula below:

Soft Cookies—1 cup butter or shortening, 1½ cups sugar, 2 eggs, 3 tablespoons milk, 1 teaspoon baking powder, just enough flour to roll to a soft dough. Sprinkle with sugar before rolling. Cut in rounds, bake in quick oven.

ADDRESS WANTED

If Mrs. A. Muscio will send her address to Household Department, California Cultivator, Los Angeles, she will be credited with extension of subscription for material contributed to this department. We have label with name and R. F. D. number but not the name of the town in which she lives. As our subscribers are listed by towns, not by names, it is necessary to have this information before credit can be given.

HOUSEHOLD HELPS?

A little glue added to jelly will make it stiffer.

Hard-boiled eggs will not scorch or burn if stirred now and then.

Moths will not eat copper window screens.

Red ants can be killed by running them through a laundry wringer.—Cincinnati Post.

VIVID IMAGINATION

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"No, I haven't," said Mr. Gadspur, "and I don't want to heart it."

"Why not?"

"Because Jibway hasn't even a speaking acquaintance with the truth. He couldn't describe a smallpox epidemic without making you think it was something you'd hate to miss."—Birmingham Age-Herald.

STARTING OFF RIGHT

"Stop the baby!"

"What's he doing?"

"Tearing the pages out of the new novel you brought home."

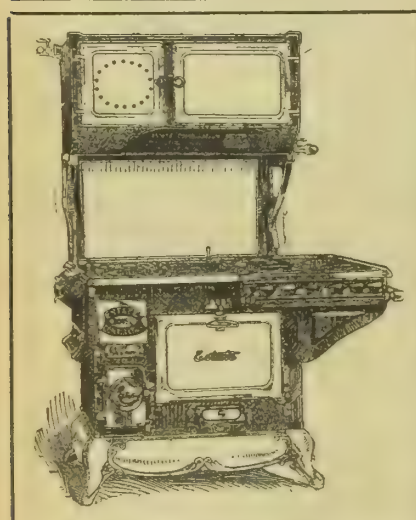
"Let him alone. That boy shows such destructive tendencies where literature is concerned I'm sure he'll be a famous book reviewer some day."

HOW TIMES CHANGE

"Times have changed," sighed Uncle Bill Picklestew.

"What makes you think so?"

"A little family party I attended last night. The women folks talked politics while the men folks got off in a corner and exchanged recipes."



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Household Pests

By W. B. Herms, Professor of Parasitology, University of California

INTELLIGENT action against pests is based on a knowledge of their life history and habits. In other words, the common question "Where do they come from?" is basic in its importance. Strike at the heart of the trouble and results are sure to follow. It is not the purpose of this brief article to discuss all our commoner insect pests, let alone such four footed pests as rats and mice, neither will it be possible to discuss fully the nature and extent of the damage done. Suffice it to say that aside from their pestiferous habits, great financial loss is accomplished because of damage to foodstuffs, household goods, etc., in addition to considerable sickness that may be traced to certain insects such as mosquitoes, flies, cockroaches and the like.

Clothes Moths and Carpet Beetles

Although there are several species of clothes moths, in general it may be said that they are brownish yellow moths about half an inch in length, commonly seen to dart out of dark corners of clothes cupboards when clothing is disturbed. They lay their tiny glistening eggs in the folds of certain garments such as woolens and heavy fabrics. The eggs generally hatch in a little over a week and the larvae may be recognized as tiny caterpillars among a loose web which they spin, particularly when about to pupate. The larvae of the carpet beetles are hairy grubs with a long brush or tail of spines. They are most likely to damage furs and woolen garments. Obviously these pests thrive best when there is little disturbance, which means that little or no damage may be expected if clothing is frequently handled, brushed and exposed to sunlight. Storage during the summer in tightly sealed boxes or bags is effective provided the clothing is not infested before storage. Cold storage at about 40 degrees Fahrenheit is commonly practiced with good results. Old woolens, etc., should not be allowed to accumulate in clothes presses, attics, etc. To destroy the insects fumigation with carbon tetrachloride is suggested, using 6 pounds to 100 cubic feet of space. To fumigate put the insecticide in a large shallow pan and place the pan on hot soap stones, seal the closet with water soaked paper strips and allow to evaporate for about 24 hours.

Superheating, preferably with an electric heater, to a temperature of 130 degrees Fahrenheit for about 20 minutes is a method which has also given good results. Infested carpets should be taken up and beaten thoroughly out of doors where the infested spots may be sprayed with benzine. Pressing the infested spots with a hot iron over a damp cloth invariably gives good results in cases of local injury.

Bedbugs

The bedbug is a common visitor in bunk houses, transient lodging houses and often times in the "best regulated households." The full grown "bugs" are oval, reddish brown, wingless insects, flattened to facilitate their entrance into narrow crevices and possessed of a characteristic odor that often signals their appearance.

They are nocturnal in their feeding habits, hiding away during the day in any place that is fairly dark and which furnishes them with an opportunity to crowd themselves into a small crevice. The cracks of wooden bedsteads, the cracks of a wooden floor, behind baseboards, and torn wall paper are favorite places of refuge. The female lays from 75 to 100 eggs in her hiding place, which hatch in about a week into tiny bedbugs closely resembling the adults except for size. From 45 days to a year is required for the development of the adult stage, depending on the availability of food. Eight to ten weeks generally suffices.

If many rooms are infested fumigation is generally the most satisfactory method of control. Hydrocyanic acid gas (cyanide) is the most efficient fumigant for this pest, but its use should not be attempted by an amateur. Sulphur fumigation accomplished by burning 4 pounds of flowers of sulphur for every 1,000 cubic feet of room space is satisfactory if all tarnishable metals and vegetable dyed materials are removed and care is taken to carefully avoid all leakage by stopping cracks and keyholes with wet paper. Gasoline or corrosive sublimate (1 to 500 solution) applied to bedsteads, floors and other hiding places are efficient. The corrosive sublimate preparation should be applied with a mop. In case it is necessary to apply by hand rubber gloves should be worn to protect the skin. For mattresses, bedding and like materials, no treatment is superior to steam sterilization where the necessary facilities are at hand. By use of this medium death to all stages is accomplished in a few moments if the steam has direct access to the insects. Where large bundles or piles of mattresses are placed in a steam sterilization chamber it is necessary to produce a partial vacuum followed by 15 to 20 minutes exposure to steam at 20 pounds pressure.

Where it is possible to heat the infested apartments to 130 degrees Fahrenheit, as is often the case in the summer time in buildings equipped with a heating plant, the maintaining of this temperature for a couple of hours generally gives good results.

Infested bedsteads that can be taken down are often dipped in vats of corrosive sublimate solution or, if metal, fine results are obtained by heating all parts with a plumber's blow torch until the paint starts to blister, care being taken not to overlook the springs at the time of treatment.

Fleas

While there are several species of fleas, the great majority of them interchange hosts, i. e., the cat and dog flea is just as likely (if present) to attack humans as cats and dogs. The same holds true for the human fleas, etc. Hence the following general statements will apply:

Fleas may deposit their eggs on the infested animal, but more eggs are deposited off the host than on the host, and in the absence of a sticky secretion practically all fall off when the animal shakes itself. A flea deposits as a rule from 15 to 25 glistening white eggs. These hatch ordinarily in less than a week. The larvae are very active, sparsely haired maggots about one-fourth inch long when full grown and subsist on faecal matter, dry blood, decaying vegetable matter, etc. In three or four weeks the larva (maggot) spins a cocoon and pupates. The entire life history, i. e., the period from the egg to the appearance of the adult flea, is passed in from four to six weeks or over.

The control of fleas is rather closely linked with the presence of domestic pets, either as regular entrants to the house or as itinerant visitors to the basement. Rats and squirrels also fall in this latter category. Poultry yards on or near the premises also demand attention. The exclusion of all animals from the basement, the periodic treatment of poultry yards and the regulation of dogs and cats permitted in the house constitute the preventive measures.

Domestic pets may be rid of fleas by frequent dusting with fresh pyrethrum powder, care being taken to rub the dust thoroughly into their coats and to perform the process in such a place that all fleas dropping from the animal may be gathered up and burned, as many are merely stupefied and will recover in a short time. Small animals may be successfully treated by washing with a heavy lather of naptha soap, wrapping the animal when well lathered in a towel for ten minutes, after which a thorough rinsing is given.

Mats upon which dogs and cats sleep should be shaken out over kerosene or fire every few days in order to destoy the eggs and larvae. Next, all carpets and matting of the old fashioned type, tacked down and covering the entire floor, must be dispensed with (rugs may be substituted) unless an insecticide can be found which may be applied to the carpet in wetting

quantities without producing injury to the fabric. With the removal of the carpets and matting the floor can easily be run over with a "dry" mop moistened (not soaked) with kerosene. All parts of the floor in all parts of the house must be reached. The odor of kerosene is not particularly disagreeable and at all events will soon leave. Treatment should be repeated at least once every three or four weeks during the flea season. If properly applied this method will certainly control the fleas.

Fleas also breed abundantly in the loose manure and debris in stables, hog pens, chicken houses, etc. Treatment with a high flash point light crude oil, fuel oil or kerosene is recommended. This is applied to the floors and ground in the form of a spray.

To treat barnyards, basements and floors of outhouses, kerosene may be applied by means of an ordinary hand spray pump, the kind commonly used for garden purposes.

Ants

Although there are a number of native species of house infesting ants, the most persistent and abundant is the introduced Argentine ant which is gradually becoming state wide in its distribution. The Argentine ant because of its aggressive habits soon supersedes the native ants and swarms in countless numbers wherever it finds suitable food. If cold meats, fat or other fatty substances are available it will be found that such food is attacked in preference to sweets, although practically all kinds of foods are overrun.

The habits of the Argentine ants differ from those of our native species in several important respects which make control somewhat more difficult. They are particularly migratory, in that the whole colony will move from place to place seeking shelter in crevices in the soil, back of baseboards in piles of bricks or stones, under boards, and elsewhere, and each colony has a large number of queens, recognized by their large size. If the colony can be located, great good can be accomplished by applying a quantity of kerosene or gasoline or boiling water.

Argentine ant poisons contain less arsenic than the usual ant poisons, for the reason that this weaker poison is carried by the workers to the queens, which they feed by regurgitating the poisoned honey or syrup. Thus eventually the entire colony is exterminated. For ordinary use the following formula is recommended:

	Quantity Large	Small
White arsenic	1 oz.	1 scruple
Caustic soda	1 oz.	½ tspoon
Sugar	20 lbs.	1 lb.
Water	3 gals.	1 pt.

For use on a larger scale the United States department of agriculture recommends the following formula:

Granulated sugar, 9 pounds.

Water, 9 pints.

Tartaric acid (crystalized), 6 grams.

Benzoate of soda, 8.4 grams.

Boil slowly for 30 minutes. Allow to cool.

Dissolve sodium arsenite (C. P.), 15 grams, in hot water, ½ pint.

Cool. Add poison solution to syrup and stir well. Add to the poisoned syrup:

Honey, 1¼ pounds.

Mix thoroughly.

The poison is placed in perforated tin cans (baking powder cans), or perforated paraffined paper bags or cartons, containing a small sponge, which are placed outside the house near the foundation walls or under shrubbery near the house. In addition to this poison, if more immediate results are desired indoors, a powder consisting of sodium fluoride (ant and roach powder) may be freely dusted wherever the ants have their runways.

Flies

The housefly lays from 75 to 125 shiny white eggs, each just about visible as a tiny glistening speck. These eggs are placed in clusters usually upon fairly fresh warm horse manure, or cow manure well mixed with bedding, never the dry manure as it occurs near the edge of the heap, a point to be remembered. From these eggs there hatch in from eight to 48 hours tiny maggots which, while in the manure, grow rapidly, reaching full growth, about half an inch in length, in four or five days, when they crawl away from the warm, moist manure and out into the dry portions of the heap or entirely away from it, burying themselves in loose earth beneath rubbish, where their outer skin becomes shrunken and chestnut brown in color, thus forming the inactive pupa or resting stage. In this brown case the insect develops its wings, legs, feet and all other parts that go to make up a fly. This requires from four to five days during the hot summer, at the end of which time the top of the case is broken open by the inmate and the fly pushes its way out, rapidly unfolds its rolled up wings and is soon busily engaged in carrying on its lifework.

An average of 685 maggots per pound of manure has been observed, which means close to half a million flies per wagon load, or 1,000 pounds of manure. Now remember how hard it is oftentimes to swat one fly and think of the task you would have to swat a million, and then make up your mind to swat the manure pile. Fly control means manure and filth control, not by destroying the manure, for this is badly needed as fertilizer on our farms, but control it by not allowing it to accumulate in heaps out in the stable yard or corral. The old system of throwing manure in a heap just outside the barn is the most wasteful of all methods of handling manure, resulting in the loss of one-fourth to one-half of the fertilizing value from leaching and fermentation. The best practice is believed to be to apply the manure to the land as rapidly as it is made. Thus it will be seen that our recommendation regarding the management of manure in fly control is in harmony with good agricultural practice as well.

By hauling the manure away from the stable daily, or at least every other day (preferably placing it directly on a manure spreader at the barn door) and hauling it to the field to be spread will result in a wonderful reduction of flies. In towns and villages it is generally necessary to store the manure temporarily in a bin which is built in the shape of a small lean-to-, with a small door or window opening into the stable to allow the manure to be placed in the bin without walking outside and opening a lid, which operation permits flies to enter the bin and propagate. The usual manure bins with lids opening outside to receive the manure ordinarily become fly breeding receptacles instead.

Insecticides and disinfectants for the manure pile are not recommended because these require daily expenditure of time, labor and money with none too good results, and the fertilizing value is almost invariably impaired as well, and the chickens and pigs may be exposed to dangerous poisons.

Finally, if a privy exists on the premises, with contents exposed to flies, don't lose a moment's time in applying a quantity of crude oil or creosote oil to the contents, which treatment will not only repel flies but kill maggots as well. Repeat this treatment at least twice a week. Then don't allow hog slops to stand around in barrels, etc., for you will find these soon to be alive with maggots. Also don't allow the waste wet mash, silage, spent hops, etc., to accumulate about the pig pens, cowbarns and chicken houses. Always remember that flies will not breed in any sort of dry matter.

The winter and early spring is a good time to begin your crusade against flies. In the winter time, particularly in California, if you dig open an old manure pile you will frequently find full grown or nearly full grown maggots in a comparatively inactive condition. These will develop rapidly at the approach of warm weather, and even during the warm spells of the winter this happens. Therefore it stands to reason that a thorough cleaning up of the barnyard during the winter and removal of all the manure to the fields, where it is spread thin, thus exposing the maggots to the cold and rain, will put them out of business for good. Then having gotten things clean, keep them clean. Flies don't breed in clean places. You will

General Endorsement of Spraying Proves Fallacy of Propaganda

Representative growers of Southern California—well known and successful—have at many recent meetings of clubs and associations made a general endorsement of Victory Tree Spray. In instance after instance Victory Tree Spray has been used by these men with entire satisfaction and with results that give the laugh to the propaganda now current against spraying.

Packing House figures may well be taken as authority on the results from arsenical spraying. Here are the figures from one of the largest and most successful packing houses in Southern California, proving beyond doubt the value of spraying in producing clean fruit:

Of clean fruit received, 10 groves were sprayed; 6 fumigated; 2 sprayed and fumigated; 1 fumigated twice.

Of commercially clean fruit, 12 groves were sprayed; 20 fumigated; 8 sprayed and fumigated; 6 fumigated twice.

Of the dirty fruit, 8 groves were fumigated; 2 sprayed.

Spraying Produces Earlier Fruit

This same packing house manager makes the statement that he opened his plant on November 26 and continued until January 1 on sprayed fruit only, which shows that spraying advances the test date from a month to six weeks. This advance also means escaping the frost danger and having ripe fruit for an early market.

Those groves treated with Victory Tree Spray have no red spider. In fact, there has been no epidemic of this pest since spraying began.

The effect of spraying on citricola is already showing up with fine results. Many other beneficial effects of spraying also are to be seen.

Don't Let the Propagandists Prejudice Your Mind Before You Have Made a Fair Trial with VICTORY TREE SPRAY

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Lloyd Harrod, Phone 6516, Pomona.—Whittier, Rivera, Downey, Montebello, Santa Fe Springs.

Frank Johnson, Phone 370, Covina—Rialto, Bloomington, Riverside.

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H. O. Mace, Phone 797, Charter Oak.—Charter Oak, Covina, Glendale, Azusa.

W. Merritt Pickney, Phone 1686, Pomona.—Upland, Ontario, Cucamonga.

A. C. Phares, Phone 383, San Dimas, LaVerne.

Jos. Walton, Hotel Elton, Phone Main 426, Redlands.—Redlands, Grafton, Mentone.

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C. D. Baughman, Phones Claremont 442, Los Angeles 64693.—General sales Manager.

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Royal Rose King of Edgemoor was out of **Belladia,** the highest record Guernsey in California, who made 934 lbs. of butter fat in 365 days in a certified milking barn.

Masterpiece of Edgemoor

is out of **Jesebel of Edgemoor** the highest record daughter of the great **Ne Plus Ultra.** She is the State Champion in her class and stands 4th in her class for the U. S. with12,434.9 lbs. of milk and 748.3 lbs. of butter fat at 2½ years of age.

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The advertisers in the California Cultivator are known to be reliable and we recommend them to our many subscribers.

find the most flies where there is the most filth.

There are many kinds of fly poisons in use, notably the proprietary cobalt and arsenical solutions. There is considerable danger in the use of many of these, as numerous newspaper accounts reporting deaths of children traceable to drinking fly poisons will testify. A very good substitute for such poisons is to be found in formaldehyde (formalin). This chemical may be purchased commercially in a 38 to 40 per cent solution and must be greatly diluted for use as a fly poison. The commercial 38 to 40 per cent soltuion is poisonous like wood alcohol if taken internally, hence must be treated accordingly. However, when diluted to a strength of 1½ or 2 per cent ready for use it is comparatively safe. For household use two or three teaspoons of the concentrated (38 to 40 per cent) formaldehyde is used to a pint of a mixture of water and milk in about equal proportions (canned milk is excellent and much less is necessary), with a small quantity of sugar or molasses added to sweeten. On a larger scale the quantities are as follows: formaldehyde 1 pint, canned milk 1 pint, sugar 1 pound, water 3 gallons.

The preparation is used as follows: Place a small piece of bread (or even a small sponge) in a shallow vessel, such as a saucer or tin plate, and pour over it enough of the mixture to saturate the bread, and leave some of the liquid about in the plate. Then place the receptacle where there are most flies. Flies which drink the solution are killed in the course of a few minutes and will be found scattered about near by. The liquid must be replenished frequently.

Sodium salicylate at the rate of 3 teaspoons of the pure chemical (a powder) to a pint of water, may be used in the same manner as the formaldehyde solution with similarly good results.

Relieve the Livestock of Torment

MANY pounds of flesh and of butter fat are lost to livestock men because of the insect pests which torment and even injure. A measure of relief may be had from the fly pest by liberal use of commercial repellents and antiseptic remedies. To those unable to secure the proprietary article and who wish opportunity for making at home, here is a formula commonly used.

Arsenical Dips

The formula commonly used in making an arsenical dip is as follows:

Sodium carbonate (sal soda)	24 pounds
Arsenic trioxid (white arsenic)	8 pounds
Pine tar	1 gallon
Water sufficient to make	500 gallons.

Put 25 gallons of water into a kettle or tank of 40 to 50 gallons capacity, heat to boiling, and add the sal soda. When this has dissolved add the white arsenic, then boil and stir for 15 minutes or longer, until the white arsenic has entirely disappeared. Cool to 140 degrees Fahrenheit (by the addition of cold water if desired), then pour in the pine tar in a thin stream while constantly and vigorously stirring the solution. Immediately empty the liquid into the dipping vat, which has already been three-fourths filled with water, and stir thoroughly.

A by-product of the action of sodium carbonate on white arsenic is the gas carbon dioxid. The escape of this gas is attended with considerable foaming of the solution, so the kettle must be generously large, and the operation of boiling must have constant watching to prevent the liquid from frothing over the edge of the kettle.

The kettle or tank, utensils, and materials must be perfectly free from all greasy or oily substances, as a small quantity of such matter is sufficient to form a coating over the arsenic, and thus to prevent or delay its solution.

If very hard water is used there may be some residue of gray or whitish powder left undissolved. In such case it is not arsenic and the solution may be perfect.

Nicotine Dip

Successful animal dips of nicotine usually contain not less than five one-hundredths of one per cent pure nicotine, and two per cent flowers of sulphur:

Forty per cent nicotine sulphate	1 pound
Flowers of sulphur	16 pounds
Water	96 gallons

Mix nicotine solution and sulphur thoroughly, then add water. Do not heat above 105 or 110 degrees.

Fly Repellent

Common laundry soap	1 pound
Water	4 gallons
Crude petroleum	1 gallon
Powdered napthalin	4 ounces

Cut the soap into thin shavings and dissolve in water by the aid of heat; dissolve the napthalin in the crude oil, mix the two solutions, put them into an old dasher churn, and mix thoroughly for 15 minutes. The mixture should be applied once or twice a week with a brush. It must be stirred well before being used.

Warbles or Grubs in Back

Grubs weaken cattle, cause loss of flesh and reduce quantity of milk. This pest causes a loss of $50,000,000 annually to this country. The attacks of the fly which causes the warble may be lessened by the above fly repellent. The warble already established in the back should be removed by slightly increasing the opening with sharp knife and pressing out the grub. Be sure it is destroyed in order to prevent the maturing of another fly. Small oil can with kerosene may be used to force a drop of oil through the opening which kills the grub. This is not as satisfactory as the other treatment. If a neighborhood will combine entire eradication is possible.

Livestock remedies and pest eradicators and, in fact, general sanitation appliances, are now offered by chemical and other manufacturers, and these often afford more ready relief for the busy livestock man where they can be secured.

Mites and Scabs

Mites cause untold loss and yet are easy of control with the ordinary animal dips. Commercial mixtures are good or one may prepare the old time sulphur dip very similar to the formula given in 10. Use for an animal dip at a strength which contains around one-fourth of one pound of sulphur to the gallon. Be sure to use only clear liquid, allowing no sediment in the dip. Have temperature of bath around 100 to 105 degrees.

Lice

During the winter it is not wise to use dips for lice on calves, and the ordinary sodium flouride formula prescribed for lice on chickens will be found excellent. There are a number of powders on the market made with this base or it may be prepared at home in proportion by volume of 2/3 sodium flouride and 1/3 kaolin or common road dust.

Stable Flies

It is advisable to begin early in the year to fight flies. They increase with such tremendous rapidity that no time should be wasted after they begin to appear. Formaldehyde in small quantities in sweet milk makes a very effective killer when set around in shallows pans. A solution of 1 pound of oil of mirbain in 25 gallons of kerosene with one gallon of cheap cylinder oil added, sprayed on the flies in the cool of the morning when they are dull, will kill them quicker than anything. This formula is successfully used in many big dairies. Manure piles should be given early attention, as 900,000 larvae per ton have been

found after four days standing. The manure pile should be screened or treated as recommended by Dr. Herms in this issue.

THE HOLSTEIN SHOW AT SACRAMENTO

(Holstein awards in last issue.)

Disappointing in numbers but satisfactory in quality was the showing made by the California Holstein breeders at the recent state fair. The Holstein business in this state has been expanding so rapidly during the last few years and the older herds have been called on so often to furnish foundation stock to men entering the business that many of the familiar exhibitors were unable to show this fall. For the most part, however, their places were taken by breeders making their first appearance at the state fair.

Undoubtedly the outstanding feature of the show was the splendid exhibit by the George Junior Republic of Chino, which drew down the lion's share of the awards made by Professor H. H. Kildee of Ames, Iowa.

The three aged bulls had an easy top in Dichter Spofford Korndyke Lad 5th, grand champion at Los Angeles last year. This bull is of rare show type, full of flesh and quality, true in his lines and of correct dairy pattern. He found little difficulty in going through the grand championship. The two bulls below him fell into their places quite naturally.

The two year olds were led by last year's junior champion, Prince Bonnie Walker. This fellow has improved considerably during the last year and is really quite a show bull. His more desirable type placed him above the Sierra Vista entry, a bull of great size for age but that was packing more beef than is desired in a dairy sire.

Ball had the pick of the four senior yearlings that did not make a particularly strong class.

The George Junior herd furnished the winner among the junior yearlings with a son of the champion. Higdon was second with a good son of King Korndyke Pontiac 20th over three other calves that were but fair.

The Chino school landed another blue with the senior bull calf, also a son of their winning aged bull. Holmes was second and Dolcini was third over a nice calf from the Sierra Vista herd

E. F. Gleason, making his first appearance at Sacramento, was an easy winner among the juniors with a very attractive youngster that was so well liked by the judge that he was later made junior champion.

Holmes returned last year's champion cow to the same honors this year. Ida Lotta Winifred Burke is a real cow from her muzzle to her mammary system. Straight of back and rump, and with plenty of constitution, she needs but a wee bit better balanced fore udder.

The three year olds afforded another win for George Junior, which also took like rating in the two year olds.

Ball had little trouble among the senior yearlings. Higdon was second and also third with a daughter of the grand champion cow. Last year's junior champion showing in this class was out of the money.

The next two classes went to the Republic's herd and netted it seven blues in the single classes. Holmes won the baby class.

The Republic boys were kept busy taking care of their blues in the groups, winning the aged herd, young herd, get of sire and produce of dam. Dolcini had the winning calf herd.

HOLSTEIN BREEDERS MEET

The annual meeting of California Holstein-Friesian Association was held at Sacramento on the evening of September 5. Directors for the coming year were elected as follows: Fred Hartsook, Lankershim; R. A. Condee, Chino; G. M. Brown, Los Angeles; Wm. R. Harriman, Hondo; W. J. Higdon, Tulare; Frank M. Helm, Fresno; A. R. Magruder, Ripon; Fred W. Kiesel, Sacramento; J. M. Henderson, Jr., Sacramento; Frank L. Morris, Woodland; H. V. Bridgford, Patterson; De Lancey Lewis, San Jose; Owen Duffy, Napa; E. Swift Train, San Francisco; E. N. Brown, Palo Alto. Frank L. Morris was re-elected president and C. L. Hughes was re-elected secretary-treasurer. Fred Hartsook and W. J. Higdon were elected first vice-president and second vice-president respectively.

The annual report of the secretary-treasurer established some facts that had not before been realized by most California breeders, among them that during the first six months of 1921 only three states sold over $400,000 worth of registered Holsteins each at public auction, New York, Wisconsin and California, and that considering this volume of business the relative number of breeders in each state should be considered, for according to the 1920 census of the Holstein-Friesian Association of America, New York had 5,700 breeders, Wisconsin over 3,800, while California had only 333 breeders; that the average of $387 per head on 1,049 head the first six months of this year in California was the highest of any state regardless of the number of cattle sold; that out of the five only sales that averaged over $800 per head, California had two; that our association now has 130 active members, a proportion of breeders that compares favorably with other states; that the average selling commission paid to California Breeders Sales and Pedigree Company this spring was nine and eight one-hundredths per cent, a selling cost that has considerable advantage over other localities where selling operations are less centralized. The association treasury is in a healthy condition with over $5,700 cash on hand, all of which and more will be necessary in financing the Delhi settlers in their foundation purchases of registered Holsteins. Eleven new members were admitted at the first meeting of the new directors, bringing the total membership up to 141.

RIGHT FOR HIM

Shy—Gee, I'd hate to be up so high in the air with that aeroplane!

Sly—Well, I'd hate to be up so high without it.—Drexerd.

A friend that you have to buy won't be worth what you pay for him, no matter what that may be.—G. D. Prentice.

VENTURA COUNTY FAIR

The Ventura County fair is but ten days away and there is every indication that opening day will find the greatest array of livestock ever assembled in Ventura County. The fair opens October 5 and continues for the balance of the week.

The Sierra Vista Stock Ranch at Perris is sending ten pens of hogs and three stalls of fine Holstein cattle. Loring Farnam of Ojai will make a great display of dairy cattle. Mrs. Beatrice Gantz of Solvang will exhibit a dozen fancy Toggenberg goats and three fancy horses for the gaited department.

J. B. Lapeyre of Moorpark has entered his beautiful Percheron stallion, "Buster," and D. J. Bastanchury of La Habra has a number of fine hogs on the way for the opening. J. P. Gray, first assistant chairman of the livestock department, has announced that there will be almost more entries than the organization can are for.

Gwyn Thurmond, chairman of the agricultural department, and Mrs. Thurmond, chairman of the woman's department, both report their departments full. Matt S. Cohen of Phoenix has been selected as judge of the horse show. The races will be under direction of Ed R. Smith, who has been in charge of the race program at Sacramento.

Maud Banks of Covina will enter her famous horse, "Confidence," in the horse show. She has also arranged to put up a silver cup for the horse show. Three thousand dollars is to be awarded in prizes in the horse show. Among the famous horses to be seen will be F. W. Mathieson's famous string, including Sinbad, The Vamp and Liberty Bond. C. K. Billings will exhibit the world famous trotter "Uhlan," who will also be put through some fancy steps.

BEET PULP FOR LAMBS

At the Nebraska experiment station it was demonstrated that a ration of alfalfa hay, dried hay, beet pulp, cottonseed cake and silage produced the largest gain and returned the most profit on a lot of 31 lambs in a 100 day feeding experiment with 12 different rations, recently completed.

The following points are outstanding from the detailed results given: Dried beet pulp when properly supplemented with alfalfa hay and cottonseed cake is an excellent feed for fattening lambs. Cottonseed cake added to the ration at the rate of one-third pound per lamb daily in every case increased the daily gain and the net profits.

Silage added to the ration of hay, dried pulp and cottonseed cake increased the daily gains, lowered the cost of gains and increased the net profit per lamb. Beet tops added to hay and maize ration produced gains at a lower cost, and increased net profits. Beet tops added to hay, dried pulp and cottonseed cake ration increased the daily gain slightly, increased the cost of gain and decreased the net profit.

BUT HE'S ON HIS WAY

Uncle Tom arrived at the station with the goat he was to ship north, but the freight agent was having difficulty in billing him.

"What's this goat's destination, Uncle," he asked.

"Suh?"

"I say, what's his destination? Where's he going?"

Uncle Tom searched carefully for the tag. A bit of frayed cord was all that remained.

"Dat ornery goat!" he exploded wrathfully. "Yo' know, suh, dat iggorant goat done completely et up his destination.—American Legion Weekly.

172 Registered Holsteins
AT PUBLIC AUCTION

Tuesday
OCTOBER 4
70 REGISTERED HOLSTEINS
Complete Dispersal
S. O. Walker Herd
Visalia, Cal.

KING OF THE BLACK AND WHITES will be sold. He was the first bull whose seven nearest dams averaged over 30 lbs. butter in seven days.

35 DAUGHTERS OF KING OF THE BLACK AND WHITES, some out of dams with over 30 lbs. butter in seven days.

MANY A. R. O. COWS with records up to over 26 lbs. butter in seven days.

YOUNG BULLS of choice breeding, including two grandsons of Sir Pietertje Ormsby Mercedes.

Every animal guaranteed a breeder; no tuberculin test certificates.

PLACE OF SALE: S. O. Walker Ranch, 3½ miles east of Visalia on Mineral King Avenue.

Wednesday
OCTOBER 5
47 REGISTERED HOLSTEINS
From the Herd of
Robt. T. Curtis & Son
Exeter, Cal.
Selling at Tulare Sale Pavilion
Tulare, Cal.

Including:

COLOMA BEAUTY BUTTER MAID, 34.72 lbs. butter in 7 days as a junior 4 year old.

THREE DAUGHTERS OF KING KORNDYKE PONTIAC 20TH, the $12,000.00 son of Miss Valley Mead De Kol Walker.

13 GRANDDAUGHTERS OF KING DOLLAR, the 38 lb. son of Spring Farm Pontiac Cornucopia.

GRANDDAUGHTERS of Pontiac Korndyke, Pontiac Aaggie Korndyke, King of the Pontiacs, and other famous sires.

A SON OF KING KORNDYKE PONTIAC 20TH, with an average of 808.27 lbs. butter in one year for six of his 7 nearest dams.

Guaranteed breeders; tuberculin tested and subject to retest.

Thursday
OCTOBER 6
55 REGISTERED HOLSTEINS
Complete Dispersal of
Eldorado Herd
Owned by
Alex. Whaley, Tulare, Cal.
Selling at Tulare Sale Pavilion
Tulare, Cal.

Including:

20 DAUGHTERS OF SIR AAGGIE DE KOL ACME 2ND, five of whose 7 nearest dams average 1,154 lbs. butter in one year.

MELBA HENGERVELD, the noted 30 lb. cow, and her daughter and granddaughter.

MANY A. R. O. COWS, of choice breeding.

THIS IS A TOP NOTCH HERD of young cattle, only one animal over 5 years old.

KING TOLA KORNDYKE PONTIAC will be sold. He is by King Korndyke Pontiac 20th and out of K. P. Tola, 36 lb. daughter of King of the Pontiacs.

CHOICE YOUNG BULLS that will no doubt sell at dairymen's prices.

Guaranteed breeders; tuberculin tested and subject to retest.

TERMS OF ALL THREE SALES: Cash unless arrangements for credit are made with California Breeders Sales and Pedigree Company before sale. Responsible parties may secure terms of one-third cash, balance in 3, 6, and 9 months on approved notes.

Auctioneers:
Col. Ben A. Rhoades, Los Angeles
Geo. W. Bell, Tulare

Management
California Breeders Sales and Pedigree Company
C. L. Hughes, Sales Manager, Sacramento, Calif.

103 REGISTERED HOLSTEINS 103

At Public Auction

Rhoades and Rhoades Pavilion, Hynes, Cal.

Friday, October 21, at 9.30 A.M.

The first individual public sale offering made by ROBT. N. CLAPP, Proprietor of SYCAMORE ACRES, Nuevo, Calif.

Featuring the Blood of KING SEGIS PONTIAC

The sale list includes a considerable number of daughters and a large number of granddaughters of KING SEGIS PONTIAC, and most of the bred females are in calf to the youngest and last son of KING SEGIS PONTIAC.

Show Cattle!

Records Up to Over 32 lbs.!

Mostly Young Cattle!

This is the greatest offering of KING SEGIS blood ever made in a single Western sale, and positively one of the typiest large offerings ever made in California.

SEND FOR A CATALOG OF THIS SALE NOW!

Every animal positively guaranteed to be a breeder; every animal over six months old Tuberculin Tested and sold subject to 60 day retest except as announced at sale.

TERMS OF SALE: Cash unless arrangements for credit are made prior to sale with the sale managers, California Breeders Sales and Pedigree Co., who will extend terms of one-third cash, balance in three, six, and nine months, to responsible parties on approved notes. We will extend credit to anyone in Southern California approved by Rhoades & Rhoades.

Auctioneers:
RHOADES & RHOADES
Los Angeles

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

DISPERSAL SALE

37 Registered Holsteins 37

Owned by JOHN SAXER

Modesto, Cal., Wednesday, October 12

This is one of the choicest herds in Stanislaus County, and for type ranks as one of the most attractive in the state. Splendid production records are also present, as well as popular breeding.

COWS WITH OFFICIAL RECORDS up to over 31 lbs. butter in 7 days.

THREE DAUGHTERS OF SIR SKYLARK ORMSBY HENGERVELD, the famous sire of great producers, among his daughters being the twice 34 lb. cow Gerben Abbekerk Maid.

A DAUGHTER OF THE GREAT HEIFER MOORLAND COLANTHA ROSE, sired by a 32 lb. son of King Mead of Riverside.

Guaranteed breeders; tuberculin tested and sold subject to retest by the buyer.

Catalog free on request.

Auctioneers:
Ben A Rhoades, Los Angeles
John A. Davis, Manteca

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

GUASTI BERKSHIRES

The big modern type proved themselves by their winnings at the State Fair.

GRAND CHAMPION SOW OF THE BREED
CHAMPION BARROW OVER ALL BREEDS

Senior Champion Sow	Junior Champion Boar
Reserve Senior Champion Sow	1st Senior Boar Pig
Res. Grand Champion Sow	1st Junior Boar Pig
Res. Junior Champion Sow	1st Aged Sow
Res. Grand Champion Boar	1st and 2nd Senior Yearling Sow
Res. Junior Champion Boar	1st and 2nd Junior Yearling Sow
1st Aged Herd	1st Junior Sow Pig

1st Barrow under 250 pounds
1st Barrow over 250 pounds

We will be glad to have you call at our exhibit at the Fresno, Ventura and Riverside Fairs or at our ranch.

Italian Vineyard Company

Alex. M. Wilson, Supt. Guasti, Cal.

Correspondence with the advertisers in the California Cultivator will convince you that their articles will save you money.

Cooperative Hog Selling

IT is to the best interests of the hog raising industry in California, or anywhere else, for the farmers to produce the grade of stock desired by the packers. This should be the aim of the hog raiser—to feed, grade up and finish his animals to meet the buyer's best expectations. If a farmer is to raise hogs at all for commercial disposal, he should raise such hogs as will be welcomed on the market with top prices. Pure breds or high bred grades usually stand the best chance of making the first class," writes D. H. Bittner, general manager of the California Farm Bureau Marketing Association, in a recent bulletin published by the Kern County Union High School. "This grade of animal is what is known to the hog seller and buyer as 'top stuff.' The question of breed, or variety of the stock, does not enter into the grading which differentiates 'top stuff' from 'bottom stuff.' Regardless of breed, the hog that is thoroughly fattened, hard and finished, will usually bring the best price on the market.

"Just at present we have a hog market which has varied from the usual standards. Now the market is demanding a fresh meat hog, one which will cut high quantities of lean meat and furnish very little fat. This is due to the fact that cottonseed oil and other fat substitutes have forced the price of lard down and down. At present the packer wants to avoid the accumulation of any more lard, and so bids highest for the 160 to 170 pound hog, which is in good firm growing condition, but does not show excess fat. Lard quotations for May delivery are only nine cents, so the packer can't afford to bid for the fat, well finished hog now, under this new abnormal condition in the hog market.

"At hog auctions, such as have been held regularly in the San Joaquin Valley during the past two years, under auspices of the California Farm Bureau Marketing Association, in which the hogs are officially graded into consignments according to their quality, there is often a difference of between two and three cents per pound between the top price secured and the bottom price.

"The difference in price means a difference in the grade of the stock. The top price is secured for hard, grain fed, thrifty animals. These can be produced from young pigs in six or seven months, especially in California. The packer wants hogs that will weigh in at the packing house alive at from 150 to 190 pounds. Such hogs must weigh 160 to 200 pounds at country shipping points, at distances such as separate the local shipping towns of the San Joaquin Valley from the Los Angeles and San Francisco markets. The younger a hog is when finished for market, the more valuable he is.

"It is well to remember, too, that a hog will acquire more good, hard fat through taking nourishment from a self feeder than it will if fed by hand, when its gluttonous tendencies result in serious overtaxation of its inner capacity for feed. Self feeders make good hogs.

"Cold statistics prove beyond the possibility of a doubt that the California Farm Bureau Marketing Association, which operates on the cooperative, non-profiting plan for the benefit of hog producers, has accomplished much for the swine industry of this state, particularly in the San Joaquin Valley, where the live hog auctions are held according to regular, prearranged schedules.

"This association, which was established November 1, 1918, without one cent of capital, has handled, since its incipiency, $3,500,000 worth of hogs. A conservative estimate of the number of consignors who have marketed their stock through the association, many of whom, of course, have repeated, being regular consignors, place this figure at 8,000, and these 8,000 consignors, during the past two and one-half years, have received a $300,000 aggregate more for the hogs which they sold than they would have without the aid of the farm bureau marketing organization.

"Another argument in favor of cooperative marketing of hogs which is found in the statistical column is the fact that the top prices received at the hog auctions, held at local shipping points in the valley, have averaged consistently higher than the top prices offered at Chicago. The Eastern hog raiser has to ship his stock to Chicago and stand the shrinkage which always occurs en route. Our local men have been hauling their hogs a few miles in a wagon or truck to the local hog auction sale, and there receiving a price equal to and lately very often a cent higher, than the Eastern man received on the same day after he had delivered his hogs to Chicago. This means that the San Joaquin Valley farmer has actually been receiving from a cent to two cents more for his fat hogs than the Eastern man.

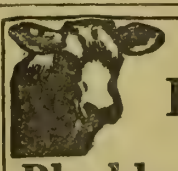
"Beneficial features are distributed about evenly between the producer and the packer by the California Farm Bureau Marketing Association. The small hog raiser, who, without the assistance of a cooperative organization is practically at the mercy of the speculative buyer and is subject to the inconvenience and losses occasioned by shipping his animals to market, is enabled to receive through the association hog sales as good a return for his stock as is the larger producer. He merely has to bring his hogs to the local sale point, where they are graded and placed in consignments in accordance with their quality and size. The next day he receives a check for his hogs by mail. This check was mailed him the afternoon of the sale day. If he only had a few hogs to sell, or even one, the price on his stock will be as high, according to the grade of the animals, as if he were selling a carload of hogs. There have been many bringing just one or two hogs at a time to sell at the association auctions.

"Through these hog auctions the packers are afforded a dependable source of supply whenever they want hogs in large quantities, as the sale managers grade the stock in carload lots, according to size and quality. All Pacific Coast packers have acknowledged that the hogs which they are now receiving through the association are 100 per cent better than the stock they received when the organization was first placed in operation. This, indeed, is a noteworthy achievement in the interests of the hog raising industry.

"The only requirement made of farmers who sell their hogs through the association is that they be paid up members of the farm bureau of the county in which they reside. The marketing organization was accomplished through establishment of a board of directors composed of representatives from every county farm bureau in the San Joaquin Valley. These men in turn created the various subcommittees in each county, etc. The farm bureau movement is responsible for the marketing association and hence it is only fair that every man who sells hogs through the Marketing Association be a member of his local county farm bureau."

The board of supervisors of Merced County has announced that it will allow appropriations for farm adviser, assistant farm adviser and home demonstration agent.

Manager Norton of the Stanislaus County farm bureau has an order from Nevada for two carloads of dairy cattle and calves to be shipped at once.



Prevent
Blackleg
by using
Blackleg Aggressin
(Germ-Free Vaccine)
Scientifically Prepared and Tested
Consult your veterinarian or druggist.
Write for booklet on blackleg prevention.

Animal Industry Department of
Parke, Davis & Company
DETROIT, MICH.

Shorthorn Opportunities on California Ranches

By J. I. Thompson, Manager Straloch Farm

CAN Shorthorn cattle be produced profitably on high priced land? Land has sold for such high prices per acre in California and in many other states the past three years that many people are wondering whether or not it is possible to produce beef cattle at a profit.

Of course, a number of factors enter into consideration—the character and location of the land, the yield per acre, the character of the cattle and, of course, the individuals back of the enterprise.

The following conditions might be taken as average ones for the central part of the Sacramento Valley.

Assume that the land is valued at $300 per acre and the cattle at the same value per head. One acre of non-irrigated pasture will carry a cow and her calf from February to July 1. Interest on this one acre at 8 per cent would be $24, and on the investment in the cow, the same amount. During July, August and September the stubble fields may be utilized, which at present rates would add $6 more to the feed bill.

The other four months will require two tons of alfalfa hay and 1200 pounds silage per cow. At present costs this would be $20 for the feed. The silage can readily be produced after a crop of grain hay has been taken off of the land. With irrigated pasture the cost can be materially reduced.

In order to get a calf to marketable age an average of eight months of feed must be allowed after the calf has been weaned. This will require about 1000 pounds barley, 2400 pounds hay, 500 pounds silage and about $6 worth of special concentrates such as oats, bran and oilmeal, a total of $30. Since market price was charged for these feeds interest on the land which produced the feed is not included, for the cattle are considered as the market for the grain and hay.

Perhaps five per cent of the cows on the average will not calve each year, so that per cent is added to the total bill of $104, making it $109.

One dollar per month per cow must be added for labor and the same rate figured for the calf for the last eight months, bringing the cost up to $129. The lowest prices paid for a pure bred bull at the last annual Shorthorn sale at Davis was $140, so that on the basis of these figures not much margin was available. However, the average of the sale was $268, which, less $129 as an average cost, leaves $139 to cover all general items that might be included. The average of all Shorthorn sales in the United States for the last 20 years is $282. Of course, there is not this much margin on the average, for the cattle sold in those sales were far above the average production of this state, but not above the average which it is possible to produce under normal conditions in California.

I believe, however, that range men will pay $200 or more for bulls that suit them, and I do not believe that veterinary fees, bull service, average loss and incidentals will absorb a sufficiently large percentage of the $71 margin, but that a reasonable return on the investment will be secured.

No credit has been allowed for manure returned to the land, which is sadly needed in a large part of this valley and the state, but even without it the margin is far more inviting than that which the grain farmers of this region are receiving at the present time.

The longer the cattle are kept on the land, making possible the application of large quantities of manure with each rotation of crops, the larger and surer are the yields. As production increases the area per cow decreases, so the margin tends to become more favorable each year, and if the animals produced increase in excellence from year to year the business is bound to be profitable.

The range men of this state are rapidly finding out that the calves from pure bred sires will either go to market at a given weight earlier or, if their finishing is done entirely on grass, may not go to market any younger, but will weigh more at the same age when marketed than the get of average grade or scrub sires.

The old bogey that pure breds were not hardy enough for range conditions is gone. True, some bulls which have been heavily fed on grain must be conditioned for the range by a gradual change to hay alone and then grass, but breeders are awake to this condition and are prepared to meet it.

There is abundant room for the foundation of innumerable small herds of pure bred beef cattle in our irrigated valleys, to supply the seed stock for other pure bred herds and for the range, and the dependable Shorthorn cow is better appreciated today than ever before. There are some 117,600 farms in California, but Shorthorns are found on only 243 of them. Surely there is abundant room for expansion.

Bred for generations for general utility, the tendency to produce milk in abundance is as much a part of the breed's characteristic as the familiar red, white and roan color. Ninety per cent of the cows will give all of the milk a calf can handle and this is the basis for the production of the scale and substance demanded by range men.

Where dairying is not advisable or does not appeal to the land owner or renter, the Shorthorn cow is rapidly coming into favor on our higher priced irrigated lands. That this is as it should be is abundantly proven by the fact that not a single failure in this business has been recorded in the past ten years, chargeable to the Shorthorn herd. True, breeders of Shorthorns have failed, but in every case it was other issues that produced the deficit, outside, unrelated issues which cannot be charged against the cows.

MANUFACTURE OF ROQUEFORT CHEESE

Manufacture of Roquefort cheese from cow's milk is described in a recent publication, Bulletin No. 976, of the United States department of agriculture. This may be obtained free on application to United States Department of Agriculture, Washington, D. C.

The main points of the process are:

The Roquefort cheese from France is made of sheep's milk and is one of the oldest cheeses of which there is record. The average composition of good Roquefort cheese is about as follows: Water, 38 percent; fat, 32 per cent; protein, 20 per cent; ash, 6 per cent; salt (NaCl), 4 per cent.

Sheep's and cows' milks differ physically and chemically. The ratio of the fat to the protein is about the same in either case.

Fresh, clean milk is essential. Three or four per cent of a starter is used and the milk brought to an acidity of 20 to 23 before setting.

The milk is warmed to from 83 degrees to 85 degrees F. and set with rennet at the rate of 3 to 4 ounces per 1,000 pounds of milk.

The milk is allowed to set for from 1 to 1½ hours and the curd is then cut into small pieces with a ⅝-inch curd knife.

Ten minutes after cutting, the curd is scooped on to a draining rack and allowed to drain for about 20 minutes.

As the curd is placed in the forms it is sprinkled three or four times with the mold powder.

The cheese is turned three or four times the first day and at least twice a day thereafter until salted. The temperature of the drain room should be from 65 degrees to 68 degrees F., with a relative humidity of 85 degrees to 90 degrees.

The cheeses in the drain room are washed every day for four or five days, after which they are salted in a special room in which a temperature of 48 degrees F. and a relative humidity of between 80 degrees and 90 degrees are maintained. The salting process requires a week or 10 days. A special conditioning apparatus is necessary to maintain the proper temperature, humidity and ventilation. The cheeses are then pierced 30 or 40 times and placed on the shelves, where they rest on their edges instead of their flat sides as previously.

By means of refrigeration and a special conditioning apparatus the cheeses are ripened at a temperature of from 45 degrees to 50 degrees F. with very little ventilation. During the salting period and while the cheeses are wrapped in foil the air should be cold and dry.

The cheeses are ripened for two or three months; during this period they are scraped every three or four weeks, with an aggregate loss of from 7 to 8 per cent. After ripening, the cheeses are enveloped in foil and held for at least one or two additional months.

At Grove City, Pennsylvania, the estimated cost of making one pound of cows' milk Roquefort was $0.46.

With 4 per cent milk the yield of cheese should be 10 or 11 pounds per 100 pounds of milk.

When cured the cheeses are wrapped in parchment lined tin foil, packed in excelsior, and shipped 12 in a box.

With proper curing conditions and experienced help cows' milk Roquefort may be manufactured successfully.

Prevent
Blackleg
by using
Blacklegoids
Scientifically Prepared and Tested
Blackleg Vaccine in Pill Form
Consult your veterinarian or druggist.
Write for free booklet on blackleg. No. 351.
Animal Industry Department of
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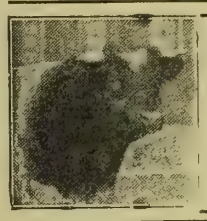

MR. FARMER
make it a point to visit two or three Shorthorn herds near you. It is a good time to buy breeding stock, thick-fleshed cows with good udders. Pick for short-legged, thick-fleshed bulls.
AMERICAN SHORTHORN BREEDERS' ASSOCIATION
13 Dexter Park Ave., Chicago, Ill.

INNISFAIL MILKING Shorthorns
MILK BEEF PROFITS
Two Young Bulls From High Producing Dams
A May 1920 son of the champion Westward Ho and out of a 10,500 pound daughter of the 1919 Chicago champion. A 14 months old son of Glenside Royal and out of Princess Clay a cow of beautiful type and with over 12,000 pounds milk. Also have a few younger bulls and heifers. Prices moderate and all guarantees. Here is your chance. Address
J. D. ROWE & SON, Lessees, Davis, Cal.

A. M. Easton Wm. A. Ward
Blackhawk Ranch Shorthorn Cattle
One of the most select herds in America. Only Scotch females of the best families headed by
ROAN RADIUM
COLLYNIE PRINCE LAVENDER
Imported direct from the famous Duthie herd.
SHIRE HORSES
A great opportunity for interested parties to buy a stallion at the San Francisco show. For prices and particulars see E. LOVELL, Mgr.
Diablo, Conta Costa Co., California

Straloch Farm
Davis, Cal.
(2½ Miles West on Highway)
Shorthorns
Herd Sires:
California Model 635776
Imp. Braywood Collynie 951409
Poland China Swine
Big—Prolific—Easy Feeders—
The Farmers' Kind.
Prices Reasonable
Hampshire Sheep
The top and the high average at the 1921 Davis sale. The kind that sire early market topping lambs. We have what you want at prices you can afford to pay.
Visit the farm at any time.
J. I. Thompson, Manager — C. Harold Hopkins, Owner

Rosebud Shorthorns
A Choice Herd of Fifty Females Headed by Milmar Stamp a Cruickshank Secret
We can now offer a few extra good young bulls that we do not hesitate to recommend. They are well grown and correct in type and quality. We invite you to visit our herd or to write us your needs.
Edinger-Johnston Company
Hood, California
(Just south of Sacramento.)

Sale Cancelled
Owing to a number of heavy private sales I will be unable to hold my public sale of Shorthorns as advertised for November 2d. I will therefore offer a number of young bulls, cows and heifers that are suitable for foundation material.
W. M. CARRUTHERS
Live Oak Cal.

IMPORTED
Corston Masher
Senior Champion at 1921 California State Fair heads our selected herd of
SHORTHORNS
and we can offer some rare bargains in Scotch and Scotch topped cows and heifers, some with calves at foot, and rebred to the above bull. Most of the heifers are by Double Callant, a grandson of Avondale. Write us for prices and particulars.
Warm Creek Land and Livestock Co.
J. Selby Badt, Pres. & Mgr., Wells, Nevada

Herd Bulls
Harris Standard 2d
Beau Blanchard 76
Nevada Hereford Ranch
J. H. Cazier & Sons
Wells, Nevada
A government accredited herd. No reactor in 16 years. A herd whose record in the show and sale ring is only surpassed by the esteem accorded its productions by cattlemen. We can furnish bulls or females to fill any need—and at sound prices. Visit our herd or write for information.

DR. HESS Instant Louse Killer Kills Lice

For Use On Your Poultry

Seize the hen and dust Instant Louse Killer into the feathers. The handy sifting top can makes it convenient to use. Sprinkle it in the nests, on the roosts and floors. Put Instant Louse Killer in the dust bath occasionally—your hens will do the rest. This means louse prevention.

FOR STOCK

With one hand stroke the hair the wrong way, with the other sift in the Louse Killer. Especially good for lousy colts.

GUARANTEED. The dealer will refund your money if it does not do as claimed.

1lb. 30c, 2½lbs. 60c *(except in Canada)*

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will reduce inflamed, swollen Joints, Sprains, Bruises, Soft Bunches; Heals Boils, Poll Evil, Quittor, Fistula and infected sores quickly as it is a positive antiseptic and germicide. Pleasant to use; does not blister or remove the hair, and you can work the horse. $2.50 per bottle, delivered. Book 7 R free.

ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful, Swollen Veins, Wens, Strains, Bruises; stops pain and inflammation. Price $1.25 per bottle at dealers or delivered. Will tell you more if you write. Liberal Trial Bottle for 10c in stamps.

W. F. YOUNG, Inc., 244 Temple St., Springfield, Mass

FOR SALE—Dish Face Berkshire Sow
RIVALS QUEEN 51ST

Has had one litter of pigs; is in good breeding condition; is from Big Bone prize stock and a very fine animal. Price reasonable.

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Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

Livestock News [Notes]

LIVESTOCK SALE CALENDAR

Holsteins

October 4, S. O. Walker, Visalia.
October 5, Robt. T. Curtis and Son, Tulare.
October 6, Alex Whaley, Tulare.
October 12, John Saxer, Modesto.
October 21, Robt. N. Clapp, Nuevo.
November 3, A. W. Morris & Sons, Inc., Woodland.
November 9, Palo Alto Stock Farm, Palo Alto.

Herefords

October 19, W. J. Bemmerly, Woodland.
October 27, Pacific Coast Hereford Breeders' Association, California National Livestock Show, San Francisco.
November 1, J. H. Cazier and Sons, Sacramento.

Shorthorns

October 28, California Shorthorn Breeders' Association, California National Livestock Show, San Francisco.

Guernseys

October 20, Walter H. Dupee, Rhoades & Rhoades Sales Pavilion, Hynes.

Just before the Hereford show at Sacramento, the Nevada Hereford ranch, Wells, Nevada, J. H. Cazier & Sons, owners, sold to the Dangberg Estate, Minden, Nevada, the junior yearling bull, Blanchard 1st, that was junior and grand champion of the show. The youngster is one of the outstanding sons of the popular bull, Beau Blanchard 76th, that was grand champion at Sacramento and Los Angeles last year. Blanchard 1st was junior champion at Los Angeles last year and was grand champion at Ogden. The price is understood to have been considerably above $2000.

W. M. Carruthers of Live Oak, who had scheduled a sale of Shorthorns to be held at Sacramento, November 2, has decided to call the proposed sale off owing to sale at private treaty of ten choice females to L. N. Pabst of Cedarville. Carruthers states there is a greater demand for breeding stock than at any time during the past several years.

The Holstein-Friesian Association of America has announced that the cow, Queen De Kol Bonheur Pontiac, has completed a yearly record of 1,016.47 pounds fat from 31,144.4 pounds milk, thus making her the 39th cow of the breed to produce more than 1000 pounds of fat in 365 days.

William Briggs, Hereford breeder of Dixon, has recently increased his herd through the purchase of 21 heifers from a prominent Missouri herd. Nineteen of the heifers were sired by the well known bull, Masterpiece, and two are by the $24,000 bull, Kenilworth, formerly Repeaters 7th's Model.

During the recent state fair E. A. Noyes & Son, Sutter City, sold the two year old Hereford bull, Bar N King, to I. L. Borden of San Francisco for $1000. Bar N King was bred and shown by Messrs. Noyes.

Bullard Brothers, Woodland, now own the famous Rambouillet ram, Monarch, having purchased him at the last Salt Lake sale for $3000. This ram is declared by leading authorities to reprensent the best type of Rambouillet yet produced in America. Sons of his head many of leading flocks of the West and are in great demand. It is expected that Monarch will make a great record when mated to the high class ewes owned by Messrs. Bullard.

The animal husbandry division of the university farm has received a shipment of feeder steers from the university range herd to be used in feeding trials. These steers represent typical native mountain cattle, and the figures obtained from them will be checked against cattle of similar age that will have the benefit of a cross of pure bred Shorthorn blood.

At the annual meeting of the California Jersey Cattle Breeders' Association, held during the state fair, Judge Peter J. Shields of Sacramento we re-elected president. Guy H. Miller of Modesto was named vice-president and V. C. Bryant of the University of California was again appointed secretary. N. H. Locke of Lockeford is treasurer. The directors are: J. H. Sawyer, Galt; Arthur Purvine, Petaluma, and Dr. H. G. Gross of Eureka.

The Poland China breeders met in annual session at the state fair and elected J. I. Thompson, manager of Straloch Farm, Davis, president; Alfred Buckland, Fresno, vice-president; and H. K. Dickson, Bakersfield, secretary-treasurer. A. J. Elliott, Tulare, was named sales manager.

The California Duroc-Jersey Breeders' Association elected V. F. Dolcini of Davis to the presidency of that organization and J. E. Thorp of Lockeford to the secretary-treasurership. The two vice-presidents are C. N. Slocum of Willows and W. P. Hodge, Hinckley; H. C. Witherow, Live Oak; W. M. Way, Modesto; W. V. Mong, Whittier, V. C. Craig, Owensmouth, and Dr. Sorrenson of Stockton are directors.

The McCloud River Lumber Company, McCloud, has a wonderful yearly record in process of making. This great cow has made over 37 pounds butter in seven days and was continued on strictly official test and for more than 100 days has milked right around 100 pounds per day and is testing close up to four per cent on the average.

FIGHTING CHOLERA WITH PRECAUTION

When hog cholera sweeps through a neighborhood, causing the death of hundreds of animals, a simple precaution, as the proper location of the hog lot, may be the means of preventing infection. Where not to have the hog lot is pointed out and other suggestions on the control and eradication of this disease are given in a leaflet published by the United States department of agriculture. Hog lots should be located away from streams and highways. Free range, streams, irrigation canals, etc., help in the spread of cholera outbreaks. Don't visit neighbors' hog lots or allow neighbors to visit yours if they have sick hogs. Infection may be carried by teams and wagons from highways; don't drive into hog lots. Isolate for at least two weeks all new stock hogs and those just returned from exhibitions and sales. Don't borrow or lend hogs for breeding purposes if cholera is in the community.

Burn to ashes or bury four feet deep all animals that die on the farm and the internal organs of slaughtered animals, since they attract dogs which may carry infection. If cholera appears in the neighborhood, confine your dog and encourage others to do likewise. Immunize herds located dangerously near infected centers. Careful attention to the feeding and handling of the herd after immunization is an important matter. Mange, lice, and worms lower the vitality of hogs and render them more susceptible to disease.

If cholera appears in the herd, post warning notices so your neighbors will know about it. Have all susceptible hogs immunized at once by some one with special training and experience, preferably a competent veterinarian. Insist that the temperature of all hogs be taken at time of treatment and an increased dose of serum given to those showing a temperature of 104 degrees Fahrenheit or over. Confine all treated hogs to limited, clean quarters; keep on light, restricted diet for at least two weeks, and give plenty of pure drinking water. Anti-hog cholera serum is not a cure, but when used as soon as cholera appears in a herd it seems to have a favorable effect on some animals in the very early stage of the disease. Don't rely on serum to cure sick hogs—it is primarily a preventive.

If the disease comes to your farm and runs its course, disinfect thoroughly afterwards all places where sick hogs have been. First, remove all infected manure and spread on fields inaccessible to hogs. Burn all litter, rubbish and old troughs from infected pens and lots. Turn over portable hog houses, exposing the interior to sunlight. Thoroughly clean pens and buildings in which sick hogs have been kept and disinfect by spraying with compound cresol solution, one part to 30 of soft water. In summer pastures and lots are usually made safe within three weeks by the action of sunlight. Fill, drain, or fence off mud wallows. Disinfect and board up all runs underneath buildings. Destroy hogs that don't fully recover; they may carry cholera infection.

EXPERIMENTS WITH FEED

Hydrolized sawdust as a part of a ration for cows is apparently giving satisfactory results in Wisconsin. The forest service of the United States department of agriculture reports that cows at the agricultural college of that state are doing as well on a ration consisting of one-third sawdust as they did when their feed was only one-fourth wood meal. That is to say, they are keeping up their weight and their milk production and show no ill effects from the diet.

The bureau of animal industry is considering the proposal of the forest service laboratory to start feeding trials with dairy animals in which the wood product will form a part of the ration and the tests will extend for an entire year at least. The hydrolized wood feed for these cows will be made at the laboratory. So far all the stock feed has been made from white pine sawdust. Other soft woods, particularly the western species, will be tried in the future.

For the Prevention of

ANTHRAX

Of all livestock diseases, anthrax is one of the most fatal.

For the preventive and curative treatment of anthrax we offer

ANTHRAXOIDS
(Spore Vaccine)

For immunizing cattle, horses, sheep and mules.

Anthraxoids are Anthrax Spore Vaccine in pill form. Each Anthraxoid is a dose ready to be injected under the skin of the animal.

Antianthrax Serum

A serum to be used when animals show symptoms of anthrax.

Anthraxoids-Antianthrax Serum
(Simultaneous Treatment)

Double vaccination with serum and vaccine. Used when anthrax is established or suspected to be in a herd.

Write for free booklet on the Prevention of Anthrax.

CONSULT YOUR VETERINARIAN

ANIMAL INDUSTRY DEPARTMENT OF
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Mission Herefords
Ultimately
Why Not Now?
We want everyone to see this wonderful herd

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DIAMOND G HEREFORDS

A few choice young bulls, big, heavy-boned husky fellows sired by DON PERFECT 2ND, one of the best sires in the West. Priced right and guaranteed.

H. H. Gable Esparto, Cal.

For Profitable Durocs

As we have sold out of bred sows and gilts, we are now offering big growthy fall pigs, either sex, at attractive prices.

D. G. Cummins & Son
Route 1 Visalia, Cal.

Dairy Products Awards at State Fair

By C. L. Roadhouse

Creamery Butter

Butter in cubes or tubs not less than 20 pounds—1, Modesto Milk Company, 94½. 2, Danish Creamery Plant, Chowchilla, 94¼. 3, E. A. Jaeger, c/o Modesto Creamery, Modesto, 94. Hooper Creamery Co., Inc., San Francisco, 93¾; West Coast Creameries. Oakland, 93½; Moss Rose Creamery, Salinas, 93½; Danish Creamery Association, Fresno, 93¼; F. L. Saper, Pend d'Oreille Creamery, Sandpoint, Idaho, 93; Northern California Milk Producers Association, Sacramento, 93; Arnold Madsen, c/o Salinas Creamery Co., Salinas, 92¾; Valley Flower Cooperative Creamery, Ferndale, 92¾; Northern California Milk Producers Association, Orland, 91½; W. C. Cavanaugh, c/o Metropolitan Creamery, Watsonville, 91½; G. O. Robinson, c/o Colusa Butter Co., Colusa, 91½; O. G. Wayne, c/o Siskiyou Meat Co., Fort Jones, 91½; Watsonville Creamery and Milk Depot, Watsonville, 91½; Surprise Valley Cheese Factory, Cedarville, 91½; Milk Producers Association of Central California, Modesto, 91¼; A. Wirz, Hollister Creamery, Hollister, 91; Dairymen's Cooperative Creamery Association. Tulare, 91; Montague Creamery, Montague, 90¾; Wm. Oeklers, 666 6th St., San Francisco, 90¾; Suisun Creamery Co., Suisun, 90½; Bodega Cooperative Creamery, Bodega, 90½; Oroville Creamery, Oroville, 90¼; Standard Creamery Co., Chico, 90.

Special prize best exhibit — Modesto Milk Company, 94½.

Best and most attractive display—1, Northern California Milk Producers Association, Sacramento. 2. Milk Producers Association of Central California, Modesto.

Goat butter, best and most attractive display—Alice M. Brown, Sacramento, 91½.

Cheddar Cheese

Single cheese (Flat or Young America)—1, Hugh Barber, Tillamook, Oregon, 94½. 2, Northern California Milk Producers Association, Sacramento, 94. 3, F. M. Frazell, Gilroy, 93½. Associated Milk Producers, Holt, 93; Russell's, Cedarville, 90½.

Special prize for best exhibit—1, Hugh Barber, Tillamook, Oregon, 94½.

California Cheese

Single cheese (Flat or Young America)—1, Reber & Woodmansee, Bieber, 94. 2, Associated Milk Producers Association, 92. 3, Joe Guepfer, Colusa, 91.

Special prize, best exhibit—1, Reber & Woodmansee, Bieber, 94.

Jack or Monterey Cheese

Single cheese (Flat or Young America)—1, Associated Milk Producers Association, Holt, 94. 2, Northern California Milk Producers Association, Sacramento, 92½.

Special prize for best exhibit—1, Associated Milk Producers Association, Holt, 94.

Swiss or Imitation Swiss Cheese

Single cheese — 1, California Central Creameries, Eureka, 95.

Best exhibit — 1, California Central Creameries, Eureka, 95.

Goat Cheese

Single cheese—1, Mrs. L. P. Lommel, Napa, 94. 2, Louis A. Wunschel, Placerville, 92.

Soft cheese (fresh), special prize for best exhibit—1, Mrs. Lommel, Napa, 94. 2, Mrs. J. H. Wentz, Fair Oaks, 93.

Milk Products and Condensed Milk

Best display — 1, Northern California Milk Producers Association.

Dairy Products

Best and most attractive display — 1, Northern California Milk Producers Association, Sacramento. 2, Associated Milk Producers Association, Holt. 3, F. M. Fazell, Gilroy.

Market Milk, Raw

1, F. G. Arnberg, Gilroy, 98.6. 2, R. W. Ames, Fresno, 98.2. 3, Theo. Renner, Alton, 98.0.

Market Cream. Raw

1, Crescent Creamery, Los Angeles, 92.5.

Market Milk, Pasteurized

1, Modesto Milk Company, Modesto, 98.2. 2, Watsonville Creamery & Milk Depot, Watsonville, 98.1. 3, Burr Creamery, Los Angeles, 97.6.

Market Cream, Pasteurized

1, Watsonville Creamery & Milk Depot, Watsonville, 96.4. 2, Crescent Creamery, Los Angeles. 91.9. 3, Marin County Milk Company, San Rafael, 86.8.

Goat Milk, Raw

1, R. Godwin, Los Angeles, 96.5. 2, Goat 'Airy (A. Winnan), Los Angeles, 95.5. 3, Richards & Wagner, Montara, 94.1.

Certified Milk

1, Adohr Stock Farm, Van Nuys, 99.4. 2, Cold Springs Dairy Farm, Pasadena, 98.5. 3, Timm's Certified Dairy, Dixon, 96.4.

Guaranteed Milk

1, Brant Rancho, Owensmouth, 97.4. 2, Home Dairy, Palo Alto, 97.3. 3, Stanford Dairy, Palo Alto, 89.5.

Guaranteed Cream

1, Brant Rancho, Owensmouth, 95.9. 2, Home Dairy, Palo Alto, 91.2.

Grade A Milk, Raw

1. J. Henry. Los Angeles, 98.6. 2, Warren Huffman, Palo Alto, 98.6. 3, V. Canzoneri, Los Angeles, 98.0.

Grade A Cream, Raw

1. Sunset Dairy, Palo Alto, 95.4.

Milk Dealers

1. United Milk Company, San Francisco, 88.9.

Dairy Inspectors

1, J. P. Bushong, City Veterinarian, Los Angeles, 98.5. 2, D. M. McNair, San Jose, 97.0.

Best and Most Attractive Display

1, Model Creamery, Redlands, 97.7. 2, Huffman Dairy, Palo Alto, 97.3.

The dairy products exhibit at the California state fair was a marked success. There were 80 entries of milk and cream from the dairymen and milk distributors of the state, 31 entries of butter and 21 entries of cheese. Four dairy products displays were also entered, which filled the refrigerators in the Dairy Building at the state fair grounds and made a very good showing for the industry.

Students Judging

A new feature was the students' contest in judging dairy products. Thirty-three students of the University Farm entered the judging work and the following men won the prizes offered by the state agricultural society (possible score 3,000): 1, J. H. Woodward, 2,848. 2, A. R. Wiley, 2,835. 3, L. H. Nielson, 2,834. M. J. Brunk, 2,827; B. F. Walker, 2,819; L. E. Schultz, 2,809; D. W. Price, 2,806; J. J. McNamara, 2,800; C. P. Meyers, 2,795; C. C. Goodale, 2,794; D. O. Lamb, 2,783; F. O. Ballou, 2,778.

Book Review

MODERN MILK GOATS

"Modern Milk Goats," by Irmagarde Richards, published by the J. B. Lippincott Co., Philadelphia, at $3.00.

This is the most complete book yet published upon the milk goat industry. There are 17 chapters and an appendix, making it a book of 272 pages. It touches upon "native" and imported goats, popularity, the industry today, home dairy, commercial herds, market for products, breeding as a vocation for women, choice of breed, feeding, records, care and health, housing and equipment. There are 76 halftone illustrations. The publishers say:

"The industry is growing rapidly because goats of the beautiful milking breeds are clean and economical, their milk is free from the germ of tuberculosis, more closely approaches human milk than any other, and saves the lives of many children. One good goat gives enough milk (three to six quarts a day) for a family of ordinary size and, furthermore, the flavor is like that of cows' milk and the meat of spare kids is just as good as lamb. The author has had many years of successful experience and covers authoritatively all problems, from selecting your first doe to managing and marketing the products of a modern commercial herd. Careful directions cover the care of the individual family goat. In the words of Professor Edwin C. Voorhies, college of agriculture, University of California, 'Miss Richards' book is the most splendid contribution to the literature which we have on the milk goat industry. I have never read portions of any work which were quite as clear and explicit as some of the chapters of this publication.'"

Miss Richards says in her preface: "The much ridiculed goat of our back alleys is rapidly disappearing, and in her place has come to stay the trim, well bred milk goat of Swiss and English origin, an attractive animal in appearance and highly efficient as a milk producer. She has entered the field of American stock breeding in response to several different and definite needs of modern American life."

PURE BRED IS BEST ON LOW MARKET

Pure bred livestock is still better than grade or scrub stock, even though prices have slid down hill, is the contention of C. M. Hubbard, livestock extension specialist of the Washington state college. To back up his contention Mr. Hubbard tells of the experience of D. E. Pearson, who made $12.50 more on a thousand pounds of pure bred steer over a scrub steer.

Before breeding registered Shorthorn cattle Mr. Pearson ran scrub cattle on the range, and as all he had were scrubs, he bred some to a pure bred bull. Three years later when the steers were ready for the market he received 10 cents on foot for the grades by the registered bull and seven and one-half cents for the scrubs. This made a difference of $25.00 on a thousand pound steer, but the grade steers of the same age, on the same pastures, drinking the same water and eating from the same strawpile, were about 75 pounds heavier and they averaged $32.00 per head more than the scrub steers. However, these steers were sold on a high market when the government wanted beef for the army.

Last year Mr. Pearson received one and one-fourth cents more for his grade steers bred from a purebred bull than for the scrubs. While this amount was small it amounted to $12.50 on a thousand pound steer. In drawing a line between the high and low market, a difference of nearly $20.00 per animal was found in favor of the high grade steer, sired by good pure-bred bulls, over the scrub sire.

EDGEMOOR FARM

Owned by W. H. Dupee

SANTEE, CAL.

WILL OFFER

51 REGISTERED GUERNSEYS 51

AT PUBLIC AUCTION

Rhoades & Rhoades Sale Pavilion

Hynes, California

Thursday, October 20, at 10 A.M.

THE FEMALES:

There will be 41 females in the sale, all heifers, and practically all are bred. A large number are bred to MASTERPIECE OF EDGEMOOR, one of the greatest young sires of the Guernsey breed, also some of the undefeated show bull DEANIE'S MAROSE OF APPLETREE POINT.

The offering includes granddaughters of Governor of the Chene, Spottswood Daisy Pearl, Rose of Lanwater and a considerable group sired by a double grandson of Governor of the Chene.

These choice heifers should meet with the approval of the many prospective buyers who wish a foundation of young registered Guernsey females of substantial breeding and bred to bulls of unusual merit.

THE BULLS:

The ten bulls in the sale list include a number ready for service, of desirable type and approved breeding, and should find favor with both breeders and dairymen.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OLD TUBERCULIN TESTED AND SOLD SUBJECT TO 60 DAY RETEST.

TERMS OF SALE: Cash unless arrangements for credit are made prior to sale with the sale managers, California Breeders Sales and Pedigree Co., who will extend terms of one-third cash, balance in three equal payments in 3, 6 and 9 months, to responsible parties, with approved note bearing eight per cent interest.

CATALOG OF SALE FREE ON REQUEST

PLACE OF SALE: Rhoades & Rhoades Sale Pavilion is at Hynes, south of Los Angeles on Downey and Long Beach Boulevard.

Auctioneers:
RHOADES & RHOADES
Los Angeles

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

Sir Prince Aaggie Mead

CONSIDER THE TREMENDOUS PRODUCTION AND DEMONSTRATED ABILITY TO TRANSMIT PRODUCTION ON BOTH SIDES OF HIS PEDIGREE.

His sire, King Aaggie Mead, is a son of the 1,000 lb. foundation cow Aaggie Acme of Riverside, who produced the 1,331 lb. world's strictly official record cow, Aaggie Acme of Riverside, who in turn produced California's only 1,000 lb. junior 2 year old, Miss Aaggie Acme Burke.

His dam, Miss Valley Mead De Kol Walker, with two records above 1,000 lbs. butter in one year, and now making a yearly record that promises to exceed her previous best record of 1,113 lbs., is a daughter of the 1,011 lb. 4 year old De Kol of Valley Mead 2d, who in turn is out of the foundation cow, De Kol of Valley Mead.

HE IS BEING GIVEN HEAVY SERVICE IN BOTH OUR HERDS. KEEP ONE OF HIS SONS IN MIND FOR YOUR HERD SIRE.

OWNED JOINTLY BY

Fred Hartsook, LANKERSHIM, CALIF. and A.W. Morris & Sons Corporation, WOODLAND, CALIF.

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Figs and Persimmons

We have a fig (Brown Turkish). We think that the fruit sours and then rots and falls off. Could you tell the cause? Also fruit of Japanese persimmon keeps falling although it is about the size of a small apple at this time. We would appreciate any information.—Eagle Rock Subscriber.

Brown Turkey figs usually split when ripe, or before, and should be looked over every day and picked as soon as splits commence. Even if not split the aim should be to pick before very ripe. We believe this procedure will save all your crop. The persimmons doubtless fall through lack of pollination, though as a rule they drop before they reach the "size of small apples." When lacking pollination they hang on until slight unfavorable conditions arise, such as too much or too little water, unusually hot weather, etc. The remedy would be to plant a tree of some other variety to effect cross pollination, or graft into present tree a scion from a recognized "pollenizer." The best of this latter class is the Gailey.

Chicken Manure for Fertilizer

I would like a little information concerning the use of chicken manure where the land has been fertilized a little with horse manure. Is it a good plan to put chicken manure in the rows where potatoes are to be planted? And if so what proportion to the acre where potatoes are planted during the winter in the wet months?—Subscriber, Watsonville.

Chicken manure is one of the best of fertilizers. Experiments conducted at Riverside citrus station showed that quickest return was made from application of poultry droppings. However, care must be taken not to make too heavy an application or "burning" may result. If the manure can be incorporated with the soil by cultivation it becomes mixed and there is little danger of its being concentrated too heavily near the stalks of plants. The danger comes from the liberal content of ammonia which is somewhat caustic and liberates at once the nitrogen which it contains. It is a good practice to use it in connection with phosphate rock or even the acid phosphate. This acts as a preservative and puts the ammonia in a form less liable to injure by its quick action.

Van Slyke advises in the handling of poultry manure to make a "complete fertilizer" mixed as follows: 10 pounds poultry manure, 4 pounds saw dust or dry muck, 4 pounds acid phosphate, 2 pounds kainit. The manure may be applied at the rate of 500 or 1,000 pounds per acre.

Moving Peach Tree

Can a five or six year old peach tree be removed to another place without killing it?—Subscriber, Lincoln.

Yes, if removed in winter time when growth is entirely dormant and the tree cut back heavily it is possible to remove and make it live. In all probability, however, it would be impossible to get a thrifty bearing tree when moved at that age. It would be far more profitable to purchase healthy young nursery tree. It may be noted that nurserymen who end the season with surplus deciduous trees invariably burn them rather than endeavor to sell for orchard planting if more than a year old.

Pruning Olive Trees

Can you advise me on pruning olive trees? Should they be trimmed or not?—"A Subscriber," Rialto.

A satisfactory answer to this question would be too extended for this department. A complete article on the subject will appear in an early issue.

Guayule

The planting of guayule was taken up in Arizona some years ago and the production of rubber from it in a large commercial way thought possible and even offering a commercial success. We asked for information of the University of Arizona and have the following from Professor of Botany J. J. Thornber:

"There is a company about 30 miles south of Tucson that is engaged in the commercial growing of guayule. It has been organized and working for more than three years, and, I understand, will soon be able to realize the first crop of the material. In conversation with its botanist I learn that it has improved very much by breeding and selection, the percentage of rubber in the stems; also method of setting out the plants; and that it now feels it is in a commercial way to make a profit of growing guayule."

Rhodes Grass

This spring I saw advertised in the Cultivator Rhodes grass with statement that it would do well on alkali soil. I should like to hear more about it from our readers, and if one can destroy it after it once gets started and what time of year to plant it.—Subscriber, Lindsay.

Rhodes grass is tolerant of alkali. The University of Arizona has issued a leaflet in which is this sentence: "Its most promising field of usefulness in this state is on alkaline soils as it will grow and thrive on soils containing very large amounts of alkali." It also refers to the fact that the Rhodes grass has done well where alkali was so strong that no other growth excepting Australian salt bush would thrive. Before planting irrigate land heavily. The best time is perhaps the last of March to early May.

Cherries Not Fruiting

I have flourising cherry trees of red variety ten years old that blossom profusely but never have borne over a half dozen cherries. What is the trouble?—Subscriber, Pasadena.

Cherries are not a successful crop commercially in the interior valleys or in Southern California excepting in two or three localities. One of these is the Julian section of San Diego County, and another is the Yucaipa-Beaumont section of San Bernardino County. However, it is barely possible that by intersetting other varieties so as to secure perfect pollination you may occasionally grow good cherries in some other sections of the south. It has been suggested that by budding or grafting Black Tartarians on a part of these trees some fruits might be secured.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Dismissal of Suit

A suit has been commenced in the superior court. The defendant answered and filed a cross complaint. The action has been pending for two years and a half, but plaintiff has never brought it for trial. Can the defendant appear and ask for the dismissal of the action? If not, how long a period of time must elapse?—Subscriber, Winters.

The code provides that the court may in its discretion dismiss an action for want of prosecution on motion of defendant after notice to plaintiff when the plaintiff has failed for two years after answer was filed to bring action to trial and that the court shall dismiss the action after due notice to plaintiff, or on its own motion, unless the action is brought to trial within five years after defendant has filed his answer.

Joint Homestead

Property is in the husband's name. The wife filed a joint homestead. In event of the husband's death would the entire estate pass to the wife and would legal proceedings be necessary? What would become of personal property such as farm implements and stock? There are three minor children. In case of the death of both parents how would the estate be managed?—Subscriber, Hanford.

A joint homestead must be executed by both husband and wife; then upon the death of either of the parties the whole of the property will go to the survivor. A petition and decree showing the fact of the death of the husband would be all that is necessary in this case. However, the question states that the wife has filed a joint homestead. It could not be a joint homestead unless both parties join. If the property was community property, notwithstanding the fact that it stood only in the husband's name and the homestead was executed by the wife alone, then upon the death of the husband it would vest absolutely in the wife. It would, of course, be necessary for her to establish the fact that the property was community property in this case. If the homestead was selected from the separate property of the husband without his consent by the wife then on the death of the husband the property would vest in his heirs or devises, subject, however, to the power of the superior court in probate proceedings on the husband's estate to assign the property described in the homestead for a limited period to the family of the decedent. The property would not, however, be subject to any debt or liability contracted previous to the death of the husband. This exemption from liability would apply, however, only to the extent of $5,000. The homestead does not carry personal property. Personal property would be taken care of by administration of the estate. If the property was such as vested in the wife upon the death of the husband, then upon the subsequent death of the wife the homestead property would vest in the minor children, each taking equal share. In such case it would be necessary to appoint a guardian to care for their interests. The manner of the execution of the homestead, and the nature of the property stated in the homsestead mentioned makes a vast amount of difference in the probate of the estate.

Avoiding Probate

A wife expects to inherit property and desires it to be held, so that in case of her death it will go to the husband without probate. Could the wife make out a deed and give it to the husband to be recorded after her death?—Subscriber, Hanford.

Providing proof of delivery prior to death can be clearly made and deed can be delivered to a party with instructions to record after death such proceeding is legal, but such manner of providing for the contingency of death has given rise to a great deal of litigation. It would be better to have the property deeded to husband and wife as joint tenants with right of survivorship.

Trespasser

A party worked for us for three years, living in a house on our property with his father, rent free. He quit work and has now come back and refuses to leave the house, demanding 30 days' notice. The father still works for us and consents to have him leave, but claims that the son is right in his demand for formal notice. Can we get rid of him?—Subscriber, Loomis.

From the statement of the question, it does not appear that there ever has been any relation of landlord and tenant nor does it appear that there has been any tenancy at will. The matter is merely the employment of a workman on the place and provision for his quarters during the period of his labor. In such case it would be absurd to require a 30 days' notice. The man is simply a trespasser and could be proceeded against as such trespasser.

Employing Japanese

Is it against the law to hire a Japanese, allowing him to live on the land? I am a gardener and hire Japanese to do my work and furnish them quarters.—Subscriber, Inglewood.

There is no provision of law prohibiting such an act. The only provision of the law bearing on Japanese is to the effect that in case any interest of land is conveyed to one who is ineligible to become an American citizen that the state of California may bring an action to forfeit this interest to the state.

Support of Minors

My husband left me and my three children about a year ago. Under interlocutory decree the custody of the children has been awarded to me. The father has, however, contributed an amount insufficient to support even one. I take in washing to support myself and children. Could I obtain money through the mother's pension department?—Subscriber, Escondido.

There is no such thing as the mother's pension department. There is a fund which is administered through the juvenile courts, providing maintenance for minor children, both for orphanages and when maintained at home. You should take this matter up with the juvenile department of the county within which you reside. They would also undoubtedly take action on the criminal side of the courts to require the husband to adequately provide for these children. It may be that under the terms of the interlocutory decree the wife might be foreclosed from bringing contempt proceedings for the failure to support the children, but nothing that the wife can do can bind the children as to their claims on the father for their support nor is the decree final in respect to such children until they reach their majority. Criminal proceedings can be instituted against the father, compelling him to proceed to support his children in accordance with their station in life and with his income.

Foreclosure

I gave a mortgage to secure note, signed by myself and wife for $4,000. The mortgagee on foreclosure proceedings bid in the property for $3,000. Can he collect the deficiency from the mortgagors from other property which they own?—Subscriber, Simi.

After sale of the property upon foreclosure a deficiency judgment for the amount for which the property was bid and the total amount of the foreclosure is docketed and entered in the clerk's office of the superior court. This deficiency then becomes a lien upon any other property of the mortgagors in the county. Execution will issue upon such deficiency and sale of any other such property may be had as in the case of any other judgment.

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Mountain Honey—Best light amber, 5 gallons up at 10c lb. f. o. b. San Diego; sample, 15c. Geo. B. Dickerson, El Cajon, Cal.

Beeman Tractor Cheap — Dwarf pears. Cash Nursery, Sebastopol, California.

ADVANCE IN SPRAYING

By Robert K. Vickery

The advances made in the last two years in spraying methods have been numerous.

In California the brown rot of the apricot has yielded to a spray of lime-sulphur or Bordeaux applied just prior to blossoming. Bordeaux is the most popular as it is the least injurious to the tree. This work is the result of experiments done at the new experiment station at Mountain View.

The use of nicotine dust for the control of other insects besides the walnut aphis has become general. The horticultural commissioner of Santa Clara County, L. R. Cody, and his deputy, D. L. Currier, with Professor O. E. Essig, have demonstrated that five per cent nicotine dust is the best control for thrips. The large seed companies are using ten per cent nicotine dust for the control of the much dreaded pea aphis on the seed farms. The leaf hopper on the grape is also being controlled by nicotine dust.

There has been a general tendency throughout the country for the saving of crops of all sorts from insect depredations. The lessons of food conservation learned in the war have sunk in and spraying is much more general than in the past.

Cotton is now dusted with calcium arsenite. Hundreds of thousands are spent in spraying sugar beets with Paris green in Utah and Colorado. Zinc arsenite is now used on the Atlantic seaboard in controlling truck crop pests. The farmers and fruit growers are insisting on better grades of insecticides and are looking for the chemical formula on the package rather than being satisfied with some high sounding name.

AMERICAN POMOLOGICAL SOCIETY

The thirty-eighth convention of the American Pomological Society will be held this year in Toledo, Ohio, December 7-9. The meeting will be in conjunction with the National Farmers' Exposition annually held in that city. A considerable exhibit of fruits and by-products will be staged in connection.

The American Pomological Society, founded in 1848, is one of the oldest agricultural institutions in the country. It has had a long and successful history and has been of large service to the fruit industry throughout its life. Its membership is found in the United States, Canada and a number of other foreign countries.

Colusa County won first place at the state fair on improved prunes grown by Campbell and Dwyer; also first on Eureka lemons, corn on the stalk, Egyptian corn, rough rice and green tobacco.

FOUL BROOD IN BEES

A writer in "L'Apiculture," Paris, France, says: "Beekeepers whose stock is attacked by foulbrood are usually those who take their honey too early and use composite hives arranged in such a way that they always obtain relatively large quantities. Taking the honey and replacing the frames of these hives for the bees to clean are two operations that encourage the queen to lay at the very time when she ought to be prevented from so doing. If the honey supply continues, no harm is done, but if the honey season is finished, which is generally the case in districts where foulbrood is rife, there is a great risk that the bees seeing their emptying frames, will let part of the brood die on account of want of honey."

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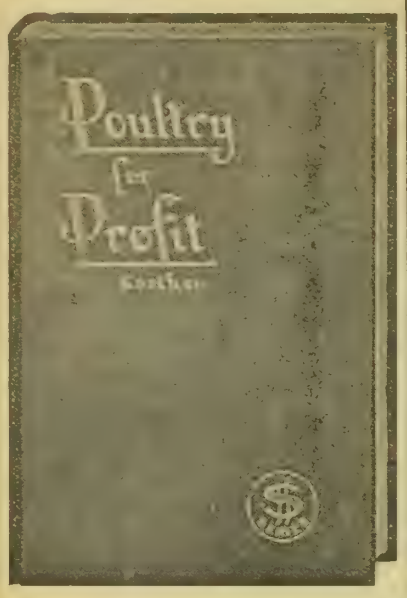

Making use of information gathered from experienced poultry writers who have been guided by their practical experiences will always result in profit from poultry.

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115½ N. Broadway,
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Poultry Parasites

By Jean A. Koethen

THE parasites which live either on or in the bodies of fowls and turkeys, or nests, roosts and walls of houses, are classified as external and internal parasites, and all have their origin in filth. Let us be quite clear on this point. Dependent as it is on its caretaker for cleanliness, whether it be of body, food or environment, the domestic fowl is necessarily the victim of the filth which it is powerless to remove. Lice are bred in the filth on the skin of the bird; mites in the filth on dropping boards and in nests; gape worms and intestinal worms in the filth of the soil from which it is forced to pick its food; the mite which produces scaly leg in the piled-up droppings of dirty yards. The only parasite which may possibly not originate in filth is the stick-tight flea which seems to be indigenous to certain sandy soils, and I doubt if you will find even stick-tights in a perfectly clean and sanitary hennery. The poultryman who keeps his houses and yards perfectly sanitary has little trouble with parasites.

External Parasites

Lice, mites, ticks, fleas, scaly leg and the depluming mite are the six parasites which get their living from the skin and blood of the bird. Lice, the scaly leg mite and the depluming mite must be attacked on the body of the bird. Mites, ticks and fleas live for the most part in and about the poultry house and must be attacked there.

Lice may be assumed to exist on the body of every bird that has not been dusted, greased or dipped to remove them. Leghorns are less suspectible to their atacks than the heavier breeds and the Asiatics are lousiest of all. Mediterraneans which have access to a dust bath will almost keep themselves clean, but most commercial poultrymen go over their flocks once or twice a year with some good louse powder. Sodium fluoride is recommended by the department of agriculture for dusting. What is known as the Lowry powder, made by mixing 3 parts gasoline with 1 part crude carbolic acid (90-95 per cent strength) and stirring in enough plaster of Paris to take up all the moisture, is cheap and effective, and there are various prepared powders. For little chicks and turkeys there is nothing quite so good as buhach insect powder. Blue ointment, a mercury preparation, mixed with lard, a pound of ointment to a gallon of lard, and rubbed about the vent, is preferred to dusting by some experiment stations. Greasing chicks on heads and under wings with lard keeps them from becoming lousy.

For ridding a house of mites some one of the many coal tar preparations is generally used. This may be crude carbolic acid mixed with kerosene in the proportion of 1 to 10 or stronger, or carbolineum, which is much the same thing, or a cresol preparation. When mites are already in a house it is safest to paint with one of these insecticides three times, a week apart, being careful to hit every crack and crevice. Grease alone on roosts and droppings boards is sometimes found effective. One man uses the oil from his automobile engine, another goes over his roosts once a year with hot mutton tallow. Anything that fills up cracks helps to keep these pests out, provided the wood is perfectly clean when it is put on. Whitewash containing crude carbolic acid is an excellent insecticide until the whitewash begins to peel off. Whatever insecticide is used will be of little avail without cleanliness before and after.

The treatment which keeps mites from a house or kills them after they are in will also keep it free from ticks and fleas. Stick-tights, which fasten themselves into the flesh of head and comb, are easily killed by repeated applications of carbolated vaseline. When ticks have once gotten possession of a house nothing but fire will positively and fully eradicate them, but ticks never take possession of a house that is kept reasonably clean. Many poultrymen prefer shavings or sawdust to straw for nests because mites and fleas are less likely to infest them.

Two Troublesome Mites

Depluming scabies and the scaly leg mite are less easily reached than the ordinary chicken mite because they live on the body of the fowl. Depluming scabbies or the feather mite may be detected by running the finger along the surface of the skin where feathers are missing. If the skin is smooth the feathers have been pulled out by other birds, if the ragged stumps of the feathers are left the feather mite is at work. As this mite finds its way readily from one bird to another affected birds should be isolated and the infested areas rubbed with oil of caraway ointment, Balsam of Peru, or a mixture of flowers of sulphur (1 dram), carbonate of potash (20 grains) and lard or vaseline (½ ounce).

Scaly leg is also quite contagious, and no affected bird should ever be introduced into a healthy flock. Oil of caraway mixed into an ointment with vaseline (1 part oil of caraway to 5 parts vaseline) is a remedy. This is rubbed into foot and leg every few days till the cure is complete. When many birds in a flock are affected dipping their legs at night into a mixture of kerosene and raw linseed oil (1 part kerosene to 2 of oil) is often effective, but kerosene is more irritating than oil of caraway and care must be taken not to wet the feathers with it.

In addition to Mrs. Koethen's suggestions we may add that poultry supply houses often have excellent proprietary insect destroyers and poultry remedies.

Internal Parasites

Round worms, tape worms and gape worms are the only internal parasites which are common enough to require consideration here. For the common round worm which is usually meant when we say a fowl has "worms" there seems to be no better remedy than the tobacco treatment recommended by our own poultry division. A pound of dry tobacco dust or powder is mixed in 50 pounds of dry mash, and this is kept before the birds for three weeks and then removed three weeks. If there is still evidence of the existence of worms the medicated mash may be used another three weeks and then removed again, and this treatment continued till the worms have disappeared.

For tape worms, which are now and then found in the intestines of both chickens and turkeys, pumpkin seed, chopped, is the commonest remedy. The birds may eat as freely of them as they will. A teaspoon of powdered pomegranate root bark for every 50 birds, mixed in the feed, is one of the best remedies, but pomegranate root is hard to get. Male fern in the form of powder (dose 30 grains), or in liquid extract (dose 15 to 30 drops) may be given morning and evening before feeding. Whatever remedy is used, it should be given while the birds are fasting and followed with a dose of castor oil or of Epsom salts mixed in a little moist mash.

Gape worms are sometimes found in the windpipes of young chickens that have been kept on filthy or infected ground. Extracting the worms by means of either a gape worm extractor or a small quill feather stripped of all its web except a small tuft on the end is the only certain cure. The feather is dipped in kerosene or oil of turpentine, then pressed down into the windpipe, the beak being held open by the thumb and finger of the left hand. At the first insertion the feather should not be forced more than an inch below the glottis. It is then given a quick turn and withdrawn. If any worms adhere they are removed and burned, and the extractor again inserted. Good results have been reported in some cases by giving the birds 15 grain salicylic acid or 3 drams salicylate of soda in a quart of drinking water.

SOUTHERN CALIFORNIA FARM BUREAU EGG LAYING CONTEST BUILDINGS COMPLETE

PLANS for the egg laying contest which will start October 1 are about complete, the buildings have been finished for several days and some of the detail work is nearing completion at this time. The contest is an outgrowth of the recently organized poultry departments of the farm bureaus in several Southern California counties, and has been adopted as an official project by these farm bureaus as well as by the state farm bureau and the poultry division of the University of California. Egg laying contests have for several years been very successful in building up the average production of flocks in various other sections. Two other contests are under way in this state, one at Santa Cruz which is in its second year, and one at Petaluma which is in its first year. If the poultry industry of Southern California is to compete with other sections it will be necessary to use more care in the selection of birds and the use of reliable records which can only be obtained by the use of trap nests. It is with this idea in mind that the egg laying contest was organized, enabling poultrymen to send 12 birds at a very nominal cost, $2.00 per bird, per year, making $24 for the pen, much less than it would cost poultrymen themselves to trapnest, and these birds will be trapnested for an entire year by those who cannot be accused in any way of being prejudiced for or against any flock. These birds are returned to the owner at the end of the year, when they can be used for breeding purposes, at which time they should be mated to cockerels from a high producing pen. Cockerels from these high producing hens can then be mated with selected birds from the remainder of the flock, which will result in the improvement of the entire flock average, which will show up within the following year.

The cost of having the birds trapnested is incidental compared with the results that may be obtained from the use of only a very small percentage of these birds should they prove to be high producers.

The contest also serves to bring out comparisons between the different strains and types of birds as all in the contest are fed and housed in exactly the same way. This gives the breeders a valuable asset, in case their birds lead the contest, and buyers may know from just what strains and what kind of birds they may be buying their baby chicks.

The houses to be used in the contest are the shed roof type recommended by the University of California and which is giving the very best of results all through Southern California with the minimum of expense for building. These houses were selected in order to give poultrymen visiting the contest grounds an idea as to good workable plans which they

Winners of The California Egg-Laying Contest 1920

If you are in the poultry business for eggs, investigate this wonderful strain of trapnested White Leghorns. Write for a catalog. It will interest you to know how these hardy, range bred birds have won their reputation.

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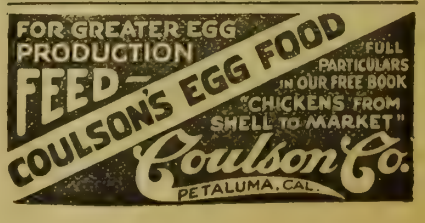
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may use on their own commercial poultry farms. There will be nothing in the contest but can be used to advantage on commercial poultry farms.

The contest is planned to take care of 50 pens of 12 birds each, records to be counted for the ten highest in each entry. Some experimental work for the benefit of poultrymen will also be conducted. Many poultrymen are donating two birds each for this experimental work. Poultrymen desiring to make such contributions should notify G. E. Gordon, 361 Courthouse, Los Angeles, who will make arrangements for their collection; although if the owners can deliver them to the contest grounds it will relieve the committee very considerably.

There is room for 50 entries and entries have not entirely been filled yet. Applications for entry should be sent immediately to Mr. Gordon, and birds delivered a week or ten days before the contest starts on October 1. Copies of rules and application blanks can be secured from the farm advisors in Southern California counties, from the egg laying contest committee, and from various local poultry associations.

Poultry Queries

(Conducted by Jean A. Koethen.)

Pendulous Crop

Two of my hens have crops so large that when they walk they strike them with their feet. They seem healthy, but the crop is full of water.—Subscriber, Oakdale.

This enlarged crop is rather common among turkeys but this is the first case I ever heard of among hens. It is generally due to irregular feeding. In this case I could not say what is the cause without knowing more about the way in which the hens have been fed. Probably they have been stuffing their crops with something very bulky and hard to digest which has permanently distended them. You might relieve them by bandaging the crops rather tightly, but if the hens are not very valuable it would be better to eat them while they are still eatable.

Feeding Formulas

Please tell me where I can get pamphlets on feeding for 100 hens. Are any published at Davis?—Subscriber, Blue Lake.

Yes, the poultry division sends out what it calls a feed letter. The last I have seen, No. 12, suggests this mash mixture: 50 pounds each bran, shorts and ground barley or oats; 10 pounds each soybean or linseed or cottonseed meal (any two); 30 pounds meat or fish scrap; 5 pounds charcoal and 1 pound salt. The mash mixture of 100 pounds barley and 50 pounds each of Gyp corn or milo and cracked Indian corn is fed, a pint in the morning and a pint and a half at night for 15 hens. This would be eight to nine quarts per day for 100 hens. A postal card addressed to "Poultry Division, University Farm, Davis, California," will bring this and any later bulletin or letter.

Leg Weakness

Our spring chickens lose the use of the legs entirely, and we are unable to relieve them. We feed good wheat, bran mash, wet with sour whey and a poultry tonic, cooked potatoes, lawn clippings, and nearly every day fish meal, beside grit and fresh water.—Subscriber, Ceres.

I think your chickens are getting a ration that is too fattening. Potatoes, you know, are all starch. As you do not mention proportion of fish meal to other parts of the ration, nor amount fed daily, I can only conclude that this fattening ration, in connection with close confinement, is making their bodies too heavy for their legs. Give your chickens a prepared laying mash, with wheat at night and sprouted oats morning or noon. Your lawn clippings may not be sufficient green. Cut alfalfa would be better. If that is not available perhaps you can make green vegetable leavings, like lettuce leaves, and melon rinds take its place. If you can let your chickens run even a short time every day you will be surprised to see how the exercise will strengthen their legs.

Swellhead

Do the germs of swellhead or roup in turkeys carry over from one year to the next even though the flock be all disposed of? If so, what is the best means of eradication?—Subscriber, Lancaster.

Roup may be contagious, though it seems that epidemics are induced by conditions which affect all the flock, rather than by contagion, but it is certainly not infectious like chicken pox. This being the case, the only way in which the germ can be carried over from year to year is in the bodies of the birds themselves. Turkeys and chickens which have once had roup are almost certain to pass on a predisposition to the disease to their progeny. This is why we say, "Never allow any bird that has had roup to be used as a breeder." If your stock is not roupy, and the birds roost out of doors, there is no reason why they should develop roup.

Ticks

I am sending bottle containing bugs found under the ends of perches in the chicken house. After finding them I poured kerosene on perches and into all cracks.—Subscriber, Fowler.

The specimens are fine, healthy ticks, the meanest pest that infests any chicken house. Kerosene will not kill them, except the few it may drown. If you dip the ends of the roosts in crude carbolic acid, taking care that it soaks into all interstices, and then paint the roosts and walls and every other bit of wood in the house with a mixture of kerosene and crude carbolic acid, making the acid at least 20 per cent of the mixture, and paint again at the end of a week, and again in another week, you may get rid of them, but you must keep painting and spraying as long as there is a sign of them left, and then regularly once a month thereafter.

Molting Feed

What is the best feed for hens in the molt?—Subscriber, San Fernando.

Most poultrymen pay very little attention to the molt except to see that the hens are well fed. Some give a moist mash, wetting the dry laying mash with buttermilk or sour skim milk, and feeding at noon all the hens will clean up quickly. Sunflower seed, when it is not too expensive, may be added to the grain ration in small quantities. A little linseed meal in the mash is also helpful in feather making, but the chief reliance is placed on good care and plenty of wholesome feed.

ORCHARD MANAGEMENT STUDIES IN TULARE COUNTY

Prof. R. S. Vaile writes further of meetings in Tulare County held to discuss results of studies made the past two years in Tulare County citrus groves. The Cultivator of September 3 gave substance of report made at the Strathmore meeting:

"I believe our meeting at Lemon Cove and Porterville the other day was a fine success. From 75 to over 100 people attended the various demonstrations and a splendid interest was indicated. In the morning we visited our plots in the Kaweah Lemon Company's property at Lemon Cove where we have seven different methods of handling the heavy adobe soils; of these, the standard Southern California practice of winter cover cropping with spring plowing and deep summer tillage, seems as good as any up to date, although the constant and almost exclusive use of a plow for tillage purposes has shown some marked advantages, particularly in restoring the soil to its original dry bog structure. Summer cover cropping and surface mulching with straw have not shown anything of particular merit either way as yet.

"We next stopped at the Anderson orchard at Lindsay where we have been conducting moisture determinations on the lighter sandy loam soils of the district. The indications here are pretty clear cut to the effect that more frequent irrigation would be of decided advantage.

"In the afternoon we visited the Ball-Emery groves of Porterville and there we have a repetition of the plots shown at Lemon Cove. There is also a very clear cut demonstration of the value of scale control for certain rows left untreated for scale until this fall have barely half the crop on them that adjoining rows have, on which the scale was thoroughly controlled.

"There was a very large attendance at the Strathmore high school in the evening."

Prof. Vaile expects to spend the next several months in Cambridge on Sabbatical leave.

THE LIFE OF THE TRACTOR

Much has been said and written about the probable life of the tractor, but as J. B. Bartholomew points out, we have not the data available from which to make definite calculation.

He says: "Great prominence was given to the wonderful work done by the tractor at the front during the great world war. But we seem to have overlooked the great work done by the tractor in the field on our great areas of fertile lands. Many tractors were purchased before the great war was dreamed of, and a great many more purchased during the war. These are the machines that did the big work in producing the surplus food available to supply not only our own great army, but in a large way the armies of our allies. Most of these tractors are still in successful operation going steadily ahead, serving their purchasers after repaying their cost many times over."

1000 Eggs In Every Hen

If you Keep Chickens, Cut This Out—Four to Seven Eggs a Week Per Hen Through Cold Winter Season. With Eggs at Dollar a Dozen, Means $5.00 Profit per Hen in Next Six Months. Amazing Poultry Secrets Revealed by

AMERICA'S FOREMOST POULTRY EXPERT

This is an offer no reader of this paper who keeps chickens can afford to ignore. We will tell you why.

Henry Trafford. Famous Poultry Expert and Breeder, for nearly eighteen years Editor of "Poultry Success," has developed a new and remarkable system of rearing, breeding and feeding chickens for heavy egg production that seems certain to revolutionize the poultry industry and give five eggs or more for every egg produced today. This plan or system is explained in Mr. Trafford's "1000 Egg Hen," a free copy of which will be sent to any person who keeps six hens or more.

Poultry keepers, following Mr. Trafford's directions, learn how to start young pullets laying early; make old hens moult quickly and resume heavy laying during entire winter season. Most any hen will lay in spring when eggs are cheap. Mr. Trafford tells how hens lay four to seven eggs a week during coldest winter days when eggs sell at a dollar a dozen or more. His system shows how any breeder, with ordinary care, may get 1,000 eggs or more from nearly every hen in four to six years' time at a net profit of $25.00.

There is big money to be made with chickens this winter by the man or woman who gets the eggs. The time to get the hens ready for heavy laying is now. Mr. Trafford's "1,000 Egg Hen" system tells how and arrangements have been made whereby any reader of this paper may receive one copy absolutely free by using the Coupon below. Send no money, but cut out the Coupon and mail it with your name and address to Henry Trafford, 243-B, Court Bldg., Binghamton, N. Y., and the story of the 1,000 Egg Hen will be sent you by return mail.

Date, 9-24.
Los Angeles, Cal., California Cultivator

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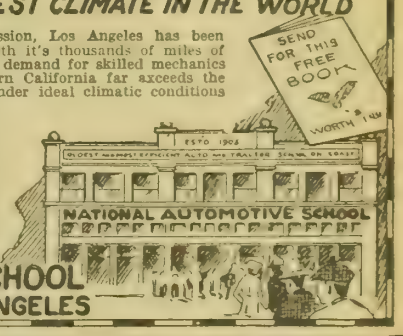

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Los Angeles Markets

Los Angeles, September 21, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price 48 cents.

Prices Creamery Extras last week:

Sept.	14	15	16	17	19	20
'21 ...	48	..	48	48	48	48

CHEESE

Brokers prices:
California flats, 21@23.

EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 46; case cases included, fresh extras, 49; case count, 45; pullets, 36; pewee pullets. 23.

Extras last week and year ago:

Sept.	14	15	16	17	19	20
'21 ...	46	..	47	47	48	49

POULTRY

Price to producers: Hens, 23@27; colored, 32; broilers, 36; roasters, 30; old roosters, 18; fryers, 30; ducks. old, 12; ducklings, Pekin, 3½ up, 25; others, 25; geese, 25; turkeys, live, young tom, 50; dr., 55; old, live, 40; dr., 41; hens, live 40; dr., 44; squabs, 45@47.

Belgian hares, live, 11@16; old, 8.
Belgian hares, live, 12@17; old, 8.

LIVESTOCK

Los Angeles, Sept. 20. — Weighed and delivered off cars without food or water:

Hogs (hard grain fed), 125 to 175 lbs., 10.00; 175 to 225 lbs., 11.00.

Cattle (on foot, gross weight): Steers, good, 6.50; medium, 6.00; cows, good, 5.00; medium, 4.50; bulls and stags, 3.00; calves, 125 to 150 lbs., 8.00; 175 to 225 lbs., 7.00.

Sheep: Ewes, 3.50@4.00; lambs, 7.00@7.50.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock September 20, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies heavy, demand and movement good, market firm. New stock: Mostly 1.00@1.25 per lug, White Rose No. 1, sacked per cwt., choice 2.50, fancy 2.75@3.00. Stocktons: Burbanks choice 2.60, fancy 2.75@3.00. Baking stock: Best 3.50@3.75. Sweet Potatoes: Supplies moderate. Movement slow, market steady. Locals. No. 1, 90@1.10 per lug; No. 2, 75@85 per lug. Jobbing: 2½@3 per lb.

Onions: Supplies liberal. Movement good, market firm. Locals: Whites, sacked per cwt. 3.25, Browns 3.10@3.15, Spanish Sweets, supplies light 3.50. Per lug: Browns 1.00@1.15, Whites 1.15@1.25. Stocktons: Whites 3.50, Yellows 3.60, Green onions, best 15 per bunch.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock September 20, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Supplies light. Demand moderate, market firm. Per lb.: Kentucky Wonders mostly 6@7 per lb.; Green pods mostly 5@6. Limas: Supplies liberal, movement moderate, market steady, mostly 3@3½.

Beets: Supplies moderate, market steady. Per dozen bunches mostly 35 45.

Cabbage: Supplies liberal, market firm. Per field crate best, 2.75@3.00.

Carrots: Supplies moderate, market steady, per dozen bunches mostly 35@40.

Celery: Slow, market steady, per crate 5.00@6.00.

Corn: Supplies light. Movement moderate, market weaker. Locals: Per lug mostly 75@85, few fancy 90@1.00.

Cucumbers: Supplies liberal, movement moderate, market steady. Locals: mostly 50@65; pickles, 1.50@1.75; few 2.00 per lug according to size and quality.

Eggplant: Supplies liberal, demand moderate, market firm, lb. 5@6.

Lettuce: Supplies liberal. Movement good, market steady. Local: Field crates, best 1.00@1.25, poorer 75@85.

Okra: Supplies light. market steady, fancy, small, 7@12 per lb.; poorer, 7.

Peppers: Supplies heavy, market steady. Locals: Bells mostly 35@40 lug; poorer 30; Chili, 3@4 per lb.; lug best, 35@40; poorer, 25.

Squash: Supplies moderate, market steady, summer best, 65@80 lug.

Tomatoes: Supplies heavy. Demand and movement slow, market steady. Locals: No. 1 per lug, fancy 90@1.00; No. 2. 50@75.

Turnips: Supplies light. Market firm. Per dozen bunches 40@45.

FRESH FRUITS

Apples: Supplies heavy. Demand and movement very slow, market weak. New stock: Mostly 3@4; fancy, 5@7; poorer 2½; Sebastopol: "B" grade Gravensteins, tier Bellflowers, 1.60@1.70; 4½ tier, 1.40; medium to large sizes mostly 1.75; small sizes, 1.25@1.50. Watsonville: Fancy 4 tier Bellflowers, 1.65@1.75; 4½ tier, 1.40; "B" grade, 4 tier, 1.40@1.60.

Cantaloupes: Supplies heavy, demand and movement moderate, market weaker. crates, best, 60@75; poorer, 50; jumbo crates, best, 1.25@1.40.

Figs: Supplies moderate, demand good, market steady. Locals: Per box, mostly 1.00@1.25; few fancy, 1.35@1.50.

Grapes: Supplies liberal, movement moderate, market steady. Wide range in quality. Muscat, 4½@6½; Tokays, 8@10; few fancy Black Hamburgs, 6@7; Concords, 10@13; Black Prince, 6@7; Thompson Seedless, 4@5 per lb.

Peaches: Supplies liberal. Demand moderate, market weak. Freestones mostly 1.00@1.25, few best 1.35, poorer 75@95 per lug; per lb., best 5@5½, Clings, mostly 1.00@1.25, few 1.35; per lb., 3½@5½.

Pears: Demand and movement good, market firm. Bartletts mostly 5@7; poorer, 3½@4 per lb.

Prunes: Supplies moderate, demand 4½@5½ per lb., mostly 4, according to quality.

Quinces: Lug 80@1.00; best, 1.15.

Watermelons: Supplies heavy. Demand moderate, market steady. Locals: Klondikes mostly ½, few ¾ per lb.

CITRUS FRUITS

Grapefruit: Supplies moderate, movement moderate, market stronger. Local: market pack, mostly 3.50@3.75; smaller 2.50@3.00; special packed 3.75@4.00.

Lemons: Supplies liberal. Demand moderate, market firm. Local: Special pack mostly 5.00@5.25; few 5.50@5.75; market pack best, 3.50@3.75; poorer 2.75; lugs 1.00@1.25.

Oranges: Supplies moderte. Demand moderate, market firm. Special brands mostly 5.00@5.25, few 5.50, market pack 3.50@3.75, small sizes 2.25@2.75, loose pack 1.00@1.50, mostly 1.00@1.25.

HONEY

Supplies of white honey nearly cleaned up account short crop and good demand. Production of fancy grades considered only 25 per cent of normal. Moderate supplies of other grades new crop but old crop supplies nearly exhausted. Light nectar flow from beans anticipated. Demand fairly active past two weeks and prices advanced slightly. Market firm at present. Carload f. o. b. usual terms at loading points. White orange, 10½@11¼; white sage, 9½@11; light amber sage, new crop, 7@8; old crop, 7; light amber alfalfa, new crop, 5¼@5½; old crop, few sales, 5½. The quality of new crop alfalfa and sage said to be variable, due to the unfavorable season. Beeswax: Supplies moderate, demand light, market weak. Growers receiving 22@23; dealers asking 25 for crude wax.

GRAIN AND FEEDS

Grain Exch. price bid September 20:
Barley: 100 ton lots, Oct. del., 1.30.
Milo: 100 ton lots, Oct. del., 1.50.

HAY

Alfalfa Growers of California report:

Our Northern Association has during the week filled two more orders for several hundred tons each for Eastern shipment. The railroad commission held hearing in Los Angeles this week on reduction of freight rates from San Joaquin Valley and Imperial Valley to Los Angeles, on hay, butter, milk and cattle, but principally hay. Cost of production of alfalfa hay in the Fresno section submitted as basis of complaint, from data furnished by our Fresno association. Our association will use its best efforts to obtain reductions in rates all along the line.

There were 260 tons of grain and alfalfa hay received on the Los Angeles tracks the week ending September 17, with 30 tons held over.

Prevailing prices last week f. o. b. Los Angeles:

No. 1 Dairy 21.00
Standard Alfalfa 16.00

Quotations by Nichols - Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats .....18.00@26.00
Barley .....16.00@24.00
Alfalfa, Rabbit .....20.00@24.00
Alfalfa, No. 1 Dairy .....18.00@20.00
Standard .....16.00@18.00

San Francisco Markets

San Francisco, Sept. 20, 1921.

Quotations made daily by San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

BUTTER

Extras 48.

Rcts. 2 days ending Sept. 20, 8,990 centals.

Sept.	14	15	16	19	20
'21	46½	46½	47½	46½	48

CHEESE

Dairy Exchange quotations:

Jack, full cream, street prices....14½@16
Cal. Flats 20½
Cal. Y. A. 25
Ore. Trips 21½
Ore. Y. A. 25

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Prices bid on Dairy Exchange quotations, September 19:

Extra 52
Extra firsts 45½
Extra pullets 39
Extra first pullets 37
Undersized pullets 21½

Sept.	14	15	16	19	20
'21	45	48½	49½	50	52

Rcts. 2 days ending Sept. 20, 108,242 doz.

POULTRY

Wholesale prices are:

Young chickens: Leghorns, 1 to 1¼ lbs., lbs. and up, 31@32; heavy breeds, 1½ to 32@33 per lb.; 1½ to 1¾ lbs., 31@32; 2 1¾ lbs., 32; 2 lbs., 32; 2½ lbs. and up, 35@38; staggy roosters, 20@25; old roosters, Leghorns, 15; heavy breeds, 18; hens, Leghorns, large 25@27; small to medium, 20@23; hens, heavy breeds, 35@38.

Ducks: 20@23 per lb.; geese, 30 per lb.; turkeys, live, 31; dressed. 45; Belgian hares, live, 15; dressed, 18@20; squabs, fancy, 40; do, common, 3.50 per doz.

LIVESTOCK

Western Meat Company quotes:

Cattle: Steers, No. 1, 5¼@5¾; do, second quality, 4¾@5¼.

Cows and heifers: No. 1, 4¼@4¾; do, second quality, 3½@4¼.

Calves: Light weight, 7@8; heavy, 5½@6½.

Sheep: Wethers, 3½@4; ewes, 2½@3.

Hogs: Hard, fat grain-fed, weighing 125 to 200 lbs., 10; do, 200 to 250 lbs., 9½; do, 250 to 350 lbs., 8; light sows, 8; heavy, 7.

California Farm Bureau Marketing Association reports:

No. Hogs	Av. Wt.	Dock	Price
Tulare, September 13			
8	181	...	$10.55
22	187	...	10.45
90	183	...	10.25
90	184	...	10.20
65	230	...	10.05
75	146	...	9.95
27	383	630	6.70
1	700	280	4.70
1 boar			13.35

Four cars, 45 consignors, $7,278.41.

Visalia, September 14			
39	191	...	10.05
78	202	...	9.80
84	187	50	9.75
87	175	...	9.75
89	182	...	9.70
72	227	...	8.90
15	228	230	8.55
14	143	...	8.55
4	347	40	7.55

Six cars, 24 consignors, $8,955.37.

Hanford, September 15			
17	126	...	10.35
92	164	...	10.00
89	180	20	9.75
84	190	...	9.75
94	168	...	9.45
8	180	...	9.75
4	255	...	8.75
3	427	30	6.00

4½ cars, 32 consignors, $6,677.76.

Corcoran, September 16			
71	185	...	9.65
71	211	...	9.45
32	165	...	9.40
1	430	...	7.45

Two cars, 10 consignors, $3,216.80.
Total for the week, 16½ cars.
111 consignors, $26,128.34.

These prices are f. o. b. shipping point, to the farmer, while the prices quoted by the newspapers are off cars at their packing house.

California Farm Bureau Marketing Association reports:

No. Hogs	Av. Wt.	Dock	Price
Wasco, September 1			
72	183	...	10.75
25	221	...	10.25
32	151	...	9.00
25	115	...	8.50
1	350	...	8.00
4	172	...	8.00
1	280	...	8.00
3	350	...	7.00

Two cars, 15 consignors, $2,846.95.

Corcoran, September 3
One load at $10.65, one consignor.

Kearney Vineyard, September 5
One load at $10.75, one consignor.

Modesto, September 6			
75	179	...	10.50
11	260	70	8.50
15	133	...	8.50
8	362	...	8.00
1	470	...	6.50

One car, 22 consignors, $2,074.65.

Ceres, September 6			
63	212	120	10.05
4	375	...	7.55

One car, one consignor, $1.448.88.

Chowchilla, September 8			
88	183	...	10.15
6	230	...	9.80
43	158	...	9.80
2	310	...	8.80
3	123	...	8.80
2	340	...	7.00

Two cars, 18 consignors, $1,968.71.

Minturn, September 8			
73	146	...	9.95

One car, one consignor, $1,059.67.

Fresno, September 9			
44	179	...	9.50
3	383	60	8.00
2	150	...	7.00

One car, 8 consignors, $839.50.
Total for the week, 10 cars.
Sixty-seven consignors, $13,238.36.

POTATOES AND ONIONS

Street prices:

Potatoes: White, fy., per cwt., 2.00@2.25; Salinas, 2.75@3.00; Ore. Burbanks, 2.25@2.50; Sweets, 2½@3½ per lb.; Turlock Nancy Hall, 2½@3½ per lb.

Onions: New yellow, 2.25; brown, 2.50@2.75; green, 1.35 bx.

Garlic: 3@5 per lb.

VEGETABLES

Wholesale selling price:

Beets: 1.75@2.00 per sack.

Beans: Blue Lake, 4@5; garden, 4@6 per lb.; Lima, southern, 5@7; river, 8 per lb.; Italian, 5@6.

Carrots: Sk., 1.00.

Celery: 3.50@4.00 cr.

Corn: Alameda, 2.50@2.75 sack; 2.75@3.00 cr.

Cucumbers: Bay, 40@50; fy. River, 50@65 lug.

Eggplant: Lb., 3@5; Livingston, 6@7.

Lettuce: Crate, 1.25.

Okra: 1.00@1.50 per box of about 10 lbs.

Peas: 7@9 lb.

Peppers: Bells, 3@4 lb.; 50@75 lug; Chili, 3@5.

Tomatoes: Sacramento and Peninsula, 40@75.

FRESH FRUITS

Apples: Bellflower, 3½ and 4 tier, 1.75; 4½ tier, 1.50@1.60; Gravensteins, 3½ tier, 2.25@2.50; 4 tier, 2.00@2.25; 4½ tier, 1.50@1.75; B grade, 3½ and 4 tier, 1.75@2.00; 1.25@1.50; 4½ tier, 1.00@1.25; Rhode Island Greenings, 3½ tier, 1.65@1.75; 4 tier, 1.40@1.50; 4½ tier, 1.10@1.25; Banana apples, 3½ tier, 2.25@2.50; 4 tier, 2.00@2.25; 4½ tier, 1.50@1.75; Red Creek pippins, 3½ tier, 1.60@1.75; 4 tier, 1.40@1.60; 4½ tier, 1.10@1.25.

Avocados: California, doz., 1.00@2.00; Fla., 4.00@6.00.

Bananas: Eastern, 6@7; Hawaiian, 7@8.

Blackberries: 30@35 per drawer; 70@75 cr.

Cantaloupes: Turlock standards, 1.00@1.50; ponies, 60@75; flats, 40@50; orange flesh megs, 1.50@1.90 for standards, 65@90 for flats; do, Sacramento, 50@75. Per-per standard crate. Casabas, 50@75 per dozen.

Cranberries: Bx., 6.00.

Figs: Black, double layer, 1.00@1.25; single layer, 60@75 do, white, single, 60@85.

Grapes: Per crate, seedless, 90@1.25; Tokay, 1.25@1.75; black, 1.25@1.50; Malaga, 1.25@1.50 per large lug; seedless, 1.75; Rose of Peru, 2.50@2.75 per large lug; Tokay, 3.00@3.50 per large lug; Isabella, 1.00@1.50 per crate; Muscat, 2.00@2.70 per lug.

Huckleberries: 12½@20 lb.

Peaches: Per small box, 1.00@1.25; per lug, 1.75; Strawberry freestone, 1.50; clings, 3.00 per large lug; Oregon packers, 1.50@1.75 per small box.

Pears: Bartletts, No. 1, wrapped, 3.00@3.75 box; other grades, 1.50@2.25.

Pineapples: 4.00@5.00 dozen.

Plums: Fy., 2.00@2.25 cr.

Prunes: Silver, 1.25@1.50 per crate; German, 1.75@1.85 crate; 60@75 small box.

Quinces: 1.25@1.50 lug.

Raspberries: 60@75 per drawer.

Strawberries: Salinas, cr., 1.20@1.40. drawer, 55@65; Watsonville, cr., 1.10@1.30.

Watermelons: ¾@1 per lb.

CITRUS FRUITS

Citrus Fruits: Valencias, 4.00@5.50 per box. Lemons: Fancy, 5.50@6.00 per box; choice, 4.00@4.50. Lemonettes: Choice, 2.00@2.50; fancy, 2.50@3.50 per box. Grapefruit: Choice, 4.00@4.50; fancy, 5.00@5.50.

DRIED FRUITS

Apples, 1921 (Packers' Quotations):
Choice (in 50s).....10¼
Extra choice (in 50s).....10½

Apricots, 1921 (California Prune and Apricot Growers) Bulk Basis:

	Sun-sweet	San Joaquin
Standard	12	10½
Choice	16	13½
Extra Choice	17	14½
Fancy	19	15½
Extra Fancy	21	....

Peaches, 1921 (California Peach and Fig Growers), Sept.-Oct.-Nov. shipment, guaranteed to January 1:

	Yellow	Muir
Slabs (in 50s)	@9	...@...
Standard (in 50s)	@9¼	...@9½
Choice (in 50s)	@9 7/8	...@...
Fancy (in 50s)	@11	...@12
Extra fancy (in 50s)	@12	...@13
Practically Peeled—		
Standard (in 50s)	@10¼	...10½
Choice (in 50s)	@10 7/8	...@...
Fancy (in 50s)	@12	...@13
Extra fancy (in 50s)	@13	...@14

Cartons, 30 11-oz., per case.....3.10
Cartons, 60 11-oz., per case.....6.00
Cartons, 24 2-lb., per case.....6.50
Cartons, 10 5-lb., per case.....6.60

Figs, 1921 (Cal. Peach and Fig Growers), Sept.-Oct. shipment, guaranteed to Jan. 1:

White—
Standard (in 50s) 6½
Choice (in 50s) 8
Fancy (in 50s) 10½
Bricks, 12 No. 10s..... 1.10
Bricks, 24 No. 8s..... 1.80
Bricks, 50 No. 6s..... 2.80
Bricks, 70 No. 4s..... 2.95
Layers, 10-lb., 4-row..... 1.60
Layers, 10-lb., 5-row..... 1.40

Calimyrna—
Standard (in 50s) 7½
Choice (in 50s) 10½
Fancy (in 50s) 13
Bricks, 24 No. 8s..... 2.05
Layers, 10-lb., 6-row 1.90

Black—
Standard (in 50s) 6
Choice (in 50s) 8
Fancy (in 50s) 11

Raisins, 1921 (Cal. Assoc. Raisin Co.):

Sun-Maid Raisins:

Muscats: 36 15-oz. cartons, seeded, 14¾ lb.; 25-lb. boxes, bakers' seeded. 13 lb.; 25-lb. boxes bakers' seeded, 13½ lb.

Muscats: 25 1-lb. boxes, 2-crown loose, 13¾ lb.; 25 1-lb. boxes, 3-crown loose, 13¾ lb.; 25 1-lb. boxes, 4-crown loose, 15 lb.

Thompson Seedless: 48 15-oz. cartons, unbleached, recleaned, carton, 16 lb; 25-lb. bulk 14½; 25-lb. bakers' graded, unbleached, 17; 25-lb. boxes, choice, sulphur bleached, 18; 25-lb. extra fancy, sulphur bleach, 19; 25-lb, oil dipped, 15½; 25-lb. soda dipped, 15½.

London Layer Raisins: 3-crown London layer: 20-lb. boxes, $3.50 per box; 10-lb. boxes, $1.85; 5-lb. boxes, $1.00.

Clusters: 20-lb carton, clusters, $4.00 per box; 12 2-lb. carton, clusters, $4.80; 4 5-lb. cartons, clusters, $5.50 5-lb. carton. Imperial clusters, $1.50; 80-lb. vineyard run layer, $12.50.

Sultanas: 25-lb. box unbleached, recleaned, 13½ per lb; 25-lb. box, soda dipped, 14½; 25-lb. oil dipped, 14½.

Black Grapes: 25-lb. boxes black grapes, 14½ per lb.

Old Crop:

Muscats: 36 16-oz. cartons, seeded, 14½ per lb.; 25-lb. bakers' seeded, 13; 1-crown loose Muscats, 13½.

Sultanas: Sultans, unbleached, recleaned, 13½ per lb.

Thompson Seedless: Soda dipped Thompsons, 15 per lb.; oil dipped Thompsons, 15; black grapes, 14½.

Prunes, 1921 (Cal. Prune & Apricot Growers): Sunsweet Quality, bulk basis: 30-40s, 9¼; 40-50s, 8¼; 50-60s, 6¾, 60-70s, 6¼; 70-80s, 80-90s, 90-100s, 5½. Growers Brand ¼c less on all sizes. All prices subject to change at any time.

BEANS

Below California Bean Growers Association shippers prices choice recleaned:

Large Whites 5.10
Small Whites 4.75
Pinks 4.90
Mexican Reds 5.15
Red Kidney 8.00
Henderson Bush 4.85
Cranberries 5.70
Bayos 5.75
Blackeyes 3.80

HOPS

From 14@23 per lb. for 1920 California crop; do, 1921 crop, 26@30½, according to quality and district in which grown.

HAY AND FEED

Cal. Alfalfa Growers Assoc.:
No. 1 Dairy.....$15.00
Standard Alfalfa 13.50

Receipts 1,563 tons compared with 1,752 last week. Local demand shows no improvement. Throughout the interior condition spotted. Where there is still storage room prices are held firmly at a little over the market. Alfalfa has been dull and quiet. A little export trade has aided the situation this week. Mill feeds are, if anything, a bit lower and dependent upon Eastern market fluctuation. We quote today wholesale prices in carload lots as appear from dealers' transfers

upon the markets in San Francisco (for prices to consumers, charges of switching, cartage, commission, and handling expenses must be added, according to conditions).

Wheat Hay No. 1	15.00@18.00
Wheat Hay, fair grade	13.00@15.00
Tame Oat Hay	12.00@15.00
Wild Oat Hay	10.00@12.00
Alfalfa Hay, later cuttings	12.00@14.00
Stock Hay	8.00@10.00
Barley, Ground	31.00@33.00
Rolled	29.00@30.00
Oats, Rolled Feed	34.00@36.00
Bran and Millrun	25.00@28.00
Middlings	40.00@43.00
Linseed Meal, Nominal	37.00@40.00
Cocoanut Meal	22.00@25.00
Alfalfa Meal	22.00@24.00
Cottonseed Meal	35.00@40.00
Sugar Beet Pulp	31.00@32.00
Molasses, Tank, 21.00; bbl.	25.00
Milo Maize	38.00@41.00
Corn Meal & Crkd Corn	38.00@41.00
Scratch Feed	45.00@48.00

GRAIN

Sales on Grain Exchange Sept. 19:

Wheat: Milling, 2.00@2.10; feed, 1.95 @2.10.

Barley: Feed, 1.17½@1.22½; shipping, 1.25@1.32½.

Oats: Red Feed, 1.40@1.60.

Corn: California yellow, 1.45@1.50; No. 2 Eastern, in bulk, 1.53@1.55; do, No. 3, 1.66@1.75; No. 3 Kafir, in bulk, 1.55@1.60; White Gyp., 1.75@1.80; Cal. Red Milo, 1.70@1.75.

Citrus Markets

Los Angeles, Sept. 21, 1921.

Supply of Valencias is rapidly decreasing, there now being a little more than 3,000 cars. It is anticipated that the cleanup will be made soon after the first of November. Soon after that date Navels will begin going forward. F. o. b. quotations are now around $4 to $4.50, while delivered prices sometimes reach $7.

A streak of warm weather in the East has cleaned up and given boost to the lemon market. F. o. b. quotations are now standing around $6. The supply of foreigns is lower than usual, reaching a little more than 13,000 boxes on piers or in sight.

Shipments

Shipments of citrus fruits to date since November 1, 1920, Southern California: Oranges, 37,630 cars; lemons, 10,737; total, 48,367. To same date last season: Oranges, 28,783; lemons, 7,676; total, 36,459. From Central California to date this season: Oranges, 6,649; lemons, 212; total, 6,861. To same date last season: Oranges, 5,381; lemons, 289; total 5,670. From Northern California to date this season: Oranges, 305; lemons, 5; total, 310. To same date last season: Oranges, 261; lemons, 23; total, 284.

AT THE AUCTIONS

September 14

New York: 23 Val. 3.40-8.00.
Boston: 5 or., 1 lem. Val. 4.70-6.20, lem. 8.05-8.30.
Philadelphia: 7 or. Val. 3.25-9.95.
Pittsburg: 5 or., 1 lem. Val. 3.25-5.55, lem. 7.55-8.35.
Cincinnati: 2 or., 2 lem. Val. 4-15-5.00, lem. 5.90-7.15.
St. Louis: 3 or., 2 lem. Val. 3.35-5.75.

September 16

New York: 18 or. Val. 3.55-7.60, lem. 7.20.
Boston: 7 or., 1 lem. Val. 3.90-6.80, lem. 7.40-7.80.
Philadelphia: 4 or., 1 lem. Val. 3.50-5.75, lem. 5.35-6.15.
Pittsburg: 2 or. Val. 3.75-6.30.
Cincinnati: 2 or., 2 lem. Val. 3.70-5.70, lem. 4.75-7.00.
St. Louis: 2 or., 2 lem. Val. 3.65-4.30, lem. 4.05-6.90.

September 19

New York: 26 or., 1 mixed, 1 lem. Val. 2.50-7.45, grapefruit 3.40. lem. 6.80-7.90.
Boston: 11 or., 1 lem. Val. 3.90-6.75, lem. 4.00-4.90.
St. Louis: 4 or., 2 lem. Val. 3.40-4.80, lem. 4.00-4.75.
Cincinnati: 2 or., 3 lem. Val. 4.50-5.80, lem. 2.40-6.50.
Pittsburg: 6 or., 4 lem. Val. 2.95-5.95, lem. 6.15-7.85.
Cleveland: 3 or., 2 lem. Val. 4.10-7.00, lem. 7.25-8.10.

September 20

New York: 20 or., 1 lem. Val. 3.55-7.60, lem. 5.30-7.70.
Boston: 8 or., 1 lem. Val. 4.10-6.10, lem. 6.60-6.70.
St. Louis: 1 or., 1 lem. Val. 3.90- lem. 3.55-5.80.

POULTRY PRODUCERS OF CENTRAL CALIFORNIA MARKET LETTER

You have been advised that your association contemplated shipments direct to London via the Canal. There are now two large consignments of sterilized eggs en route to London, and as great care was exercised in preparing the shipments we feel confident that they will be favorably received in that great market. Foreign exchange rates have been very irregular of late and at the present time Sterling is considerably lower than when our shipments were arranged for. We hope, however, that a more stable condition will be reached before our eggs are actually sold. Your general manager has sailed from Montreal and upon his arrival in London will personally investigate the British markets and will dispose of the eggs we have on the way. He will also attend the World's Poultry Congress at The Hague, concerning which you have already been advised.

The spell of hot weather that prevailed at intervals during the last month had its effect upon the quality of eggs produced. It is reported that many Pacific Coast eggs arriving in the New York market did not command the usual premium, due to the fact that their quality was not up to standard. On the whole, our shipments to New York at the present time are showing fairly satisfactory returns.

On Monday, August 22, we shipped a cargo of eggs to New York via the Canal, on the steamer Henry S. Grove. Owing to the fact that all refrigerator space had been chartered by fruit growers of Southern California, this is the first shipment we have made since our initial, experimental shipment which proved so entirely satisfactory. Nothing preventing, we will make at least one shipment per month over this route for the balance of the year.

We are pleased to announce to our members that we are now able to reduce the price of cases, and beginning with your next returns cases will be billed to you at 50 cents each instead of 55 cents as heretofore. This reduction will not apply to cases delivered prior to August 18.

The tariff matter is now before the senate finance committee and we are informed by Knox Boude, who is still in Washington, that every effort will be made to have the rates on eggs and egg products increased to an amount that will afford us real protection.—John Lawler, Assistant Manager.

CALIFORNIA CATTLEMEN'S ASSOCIATION REPORT

San Francisco, September 10: Sales are reported in Central California for 6c for steers, f. o. b. ranch, and for 5½ for steers f. o. b. ranch in northern counties. It has been reported that a Los Angeles buyer has contracted beet top steers at 7½c f. o. b. packing house. Cattle seem to be in good demand, a large number of buyers being in the field and exceedingly active in buying stock. Nevada cattle are somewhat earlier than usual this year, and it is expected that both Nevada and Utah grass cattle will be completely marketed before November 1. Northern California grass cattle should, if possible, be held until November, in order to avoid going onto the market in competition with Nevada and Utah cattle. The price being paid for cattle in California continues higher in proportion than prices at Eastern points. A very strong feeder market has developed on the Coast, with very few feeders available. Fred H. Bixby sold one car of fat cows locally (Long Beach) on September 3, f. o. b. ranch at 6c, with a 3 per cent shrink. Report all sales of cattle and feeder cattle available to the secretary of the California Cattlemen's Association. Do not sell on consignment. Make all sales f. o. b. ranch. Offer only fat cattle for sale.

Walnut Growers Meet

By Ernest Braunton

THE California Walnut Growers Association meet in the mammoth packing house at Puente on September 16 was the largest, most enthusiastic, most profitable, of any yet held. The attendance was far over a thousand and Secretary Hotchkiss counted more than 500 automobiles on the grounds.

The most important and outstanding feature of the forenoon's program was the discussion of the mysterious "foot rot" or "heart failure," and so prevalent is it becoming in some sections that walnut growers from as far away as Contra Costa County were there to learn, if possible, of remedial measures. The outcome of the discussion was the memorializing of the state college of agriculture to appoint a scientist to study the disease and outline some treatment looking to its control. It was fairly well proven that the Southern California native rootstock is more susceptible to the disease than the northern.

The three big things of the later program were the talks of C. C. Teague, Carlyle Thorpe and Prof. J. W. Nelson. President Teague discussed the importance of the tariff and stated the average grower is too indifferent to the necessity of protection to the industry. Competition is becoming stronger each year and foreign nuts of excelllent quality may be landed at a price lower than the home grower can produce them under present conditions. We have also reached the "saturation" point in production and must study the situation keenly and act quickly and effectively whenever occasion demands if we are to hold our present enviable reputation in the walnut industry.

Manager Thorpe reported on the phenomenal success of the new selling campaign carried out during the season just closed. The association has been shipping and storing in eastern warehouses and supplying the needs of customers daily instead of requiring purchases of practically a month's supply as heretofore. It has proven a big success. One other successful development that will be of lasting benefit was the selling through the big department stores in every large city from coast to coast. Special stress was laid on the necessity for careful grading and sorting of the coming crop. Nuts promise to be small and of but fair quality so selection must be strict, for Chile and China are both prepared to send in nuts which this year are larger and finer and can be landed in the United States for 17 or 18 cents a pound.

Prof. J. W. Nelson, of the state college of agriculture, gave an entirely new talk on soils, illustrated with charts having special application to walnut orchards. His topic was the relation of root distribution to irrigation. Water must be placed where the roots are or they will receive none. Do not store your soil full of water with the expectation that this supply or reservoir may be drawn on when needed through capillary attraction. Water once below the root zone will remain there or go deeper; it obeys the law of gravitation and never comes up.

"State Market Day" Conference

By A. P. Messenger

Members of farmers cooperative associations were entertained at a luncheon given by the California Development Association at the Palace Hotel, San Francisco, September 15.

Chairman Harry S. Maddox, state market director, called attention to the fact that the farmer's crying need was closer producer-consumer cooperation. He cited a case of observing watermelons in Turlock selling to middlemen at the ruinous price of $3 per ton. Upon investigation in San Francisco the next day he found those same melons retailing at $50 to $80 per ton. The freight rate is less than $3, a case of playing both ends and working the middle. Mr. Maddox appealed to the farmers free market with the result that watermelons were retailed at $20 per ton and the producer received between $6 and $7.

President Frank T. Swett of the California Pear Growers Association insisted on the value of cooperative advertising of perishable products. Last year the pear growers were confronted with an overproduction of fresh fruit unless the consumer could be reached by an advance advertising campaign. Skeptics claimed that a perishable fruit crop which lasted only a month or six weeks at best could not be advertised efficiently. The Pear Growers Association set aside $15,000 for advertising purposes. Boston and Philadelphia were selected as trial cities. Attractive, catchy posters and window cards portraying the luscious pear were displayed conspicuously in hundreds of stores in the two cities, preceded by newspaper advertising. The association directors figured that their efforts would be repaid if they could raise the consumption of the fruit 25 to 35 per cent, but the end of the season showed a gain of over 100 per cent in Boston and 200 in Philadelphia.

President Sheehan of the California Grape Growers Exchange spoke on the prosperity of the wine grape growers. Mr. Sheehan stated that wine grape men were in a unique position in that their product was in such demand that they needed no advertising.

Other cooperators present were Manager Tucker, California Almond Growers Exchange; Director Alexander, California Prune and Apricot Growers; President Inman, Pacific Rice Growers Association; Director Virden, California Fruit Exchange, and Geo. H. Hecke, director state department of agriculture.

APRICOT BROWN ROT

According to a recent report based on thorough investigation, apricot brown rot has increased rapidly in California during the past five or six years, especially in the central bay region and the costal valleys. This disease does its chief damage in this region by attacking the flower clusters, then quickly killing the fruit spurs, and sometimes spreading to the wood, usually not over two years old. The disease may attack apricots and prunes when fully grown or nearly ripe. The chief protection, locally, against this disease in the dryness of June and early July. Peaches are protected in the same way during July and August, particularly in the interior valleys. Cold, wet weather at blooming time favors attack, as does also lowness of situation with attendant likelihood of frost injury.

As the result of trials with 17 or 18 different spray treatments at the deciduous fruit station established in January, 1920, by the University of California at Mountain View in the Santa Clara Valley, it is believed that a single winter spraying with lime-sulphur at winter strength, that is, one gallon of lime sulphur to nine gallons of water, will control the disease, if given just as the trees are coming into bloom. Dry lime-sulphur, 12 pounds in 50 gallons of water, also gives good desults.. Bordeaux mixture at 4:5:50 was also effective. Other protective measures are briefly discussed.

SOIL PESTS

It has been shown that eel worms or nematodes, wire worms, potato scab, etc. may be largely brought under control by the application of 220 pounds to 330 pounds of agricultural sulphur per acre thorougly mixed with the soil before planting.

Seed and bulb growers and potato growers have used this treatment for years and lately reported the same since sulphur has been brought to the front as almost a universal cure for many pernicious micro-organisms.

The olive tree was introduced into the Argentine at the time of the conquest; it found there such favorable conditions and propagated there so rapidly that the Spanish government, fearing competition with the mother country, ordered the destruction of all olive trees in the New World. At Arauco (Rioja) there is an ancient olive tree measuring 43 feet in girth; this giant is one of the few trees that escaped destruction, and it is certainly the parent of the olives in the whole of that region.

WEATHER REPORT

San Francisco, Cal., September 17, 1921.

Stations	Rainfall Wk.	Season	Norm.	Temp. Max.	Min.
Eureka	.04	.05	.67	66	42
Red Bluff	.00	T	.21	86	52
Sacramento	.00	.00	.14	82	48
San Francisco	.05	.05	.01	65	52
San Jose	.06	.12	.15	76	40
Fresno	.00	.20	.00	86	52
San Luis Obispo	.16	.28	.12	76	44
Los Angeles	.00	T	.00	74	50
San Diego	.00	T	.00	72	59

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Parke, Davis & Company
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SPERRY
Standard Recipes

NOTE: *All measurements are level. Flour is sifted once before measuring. A half-pint measuring cup is used.*

Sperry Baking Powder Biscuits

2 cups Sperry Drifted Snow Flour; 1 teaspoon salt; 4 teaspoons baking powder; 2 tablespoons shortening; ¾ cup milk or equal parts of milk and water.

Mix and sift dry ingredients; rub in shortening; gradually add liquid, mixing with a knife to a soft dough. Toss on a floured board, pat or roll lightly to one-half inch in thickness, cut with biscuit cutter, place in pan, brush over top with melted shortening or milk. Bake in hot oven twelve to fifteen minutes.

Sperry Doughnuts

2 cups Sperry Drifted Snow Flour; 2 teaspoons baking powder; ½ teaspoon salt; ¼ teaspoon nutmeg; 2 tablespoons butter; ½ cup sugar; 1 egg; ½ cup milk.

Cream butter, add sugar and well-beaten egg. Sift all dry ingredients and add alternately with the milk. Turn on a floured board, roll out half an inch thick and cut with a doughnut cutter. Allow to stand a few minutes to stiffen the dough, then fry in hot fat until a golden brown; drain on paper, dredge with powdered sugar.

Sperry Quick Cake

2 eggs; 1 cup sugar; 2 cups Sperry Drifted Snow Flour; 2 teaspoons baking powder; ½ cup milk or water; ⅓ cup melted shortening; 1 teaspoon vanilla; 1 teaspoon lemon.

Sift all dry ingredients; beat eggs until very light, add sugar gradually, beating with egg beater. When creamy, add dry ingredients alternately with liquid, mixing well. Add flavoring and melted shortening. Bake in two layers and put together with jelly or add one-fourth cup chopped walnuts and bake in well-greased muffin pans.

Sperry Drop Cookies

¼ cup butter; ½ cup sugar; 2 eggs; 1 cup Sperry Drifted Snow Flour; 1 teaspoon each lemon and vanilla.

Cream butter, add sugar gradually, beating thoroughly; then add one egg unbeaten, mixing until batter is smooth; add one-half cup of Sperry Drifted Snow Flour; beat well, then one egg and continue beating; add remaining flour and flavoring. Drop with teaspoon on greased baking sheet about 3 inches apart, as these cookies spread while baking.

Sperry One Egg Chocolate Cake

First Part: 2 squares unsweetened chocolate melted; ⅓ cup sugar; ⅓ cup milk. *Second Part*: ⅓ cup shortening; 1⅓ cups sugar; 1 egg; ⅔ cup milk; 2 cups Sperry Drifted Snow Flour; 3 teaspoons baking powder; 1 teaspoon vanilla.

Melt chocolate over hot water, then add sugar and milk and cook until thick and smooth. Set aside to cool slightly. Cream shortening, add one cup of sugar, gradually mixing well. Beat egg, add remaining one-third cup of sugar and combine mixtures; when well mixed add flour, sifted with baking powder and milk alternately, beating well. Add flavoring and the chocolate mixture. Pour in well-greased layer-cake pans and bake about fifteen minutes in a moderate oven. This mixture may also be baked in a loaf cake.

BEFORE a recipe can take its place in the ranks of Sperry Standard Recipes it must have proved itself in the making—not once, but countless times. The recipes at the left are taken at random from the Sperry Cook Book. This book has been of immeasureable help to thousands of women up and down the Pacific Coast. Not only are these Sperry Standard Recipes of practical everyday value but they provide foundation formulas that the ingenious housewife can adapt in a host of delicious, economical ways. We'll gladly send this Cook Book on request. Address Domestic Science Dept., Sperry Flour Co., Los Angeles.

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

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I am the Red Cross of Peace —
I heal the wounds of war —
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The love of little children is mine —
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Saturday October 1, 1921

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EDITORIALETTES

The Red Cross of Peace "in the service of those who suffer" is about to begin its fifth roll call in which it is hoped that all former members will answer "Here" and, further, it is hoped that each answer will be accompanied by one big round dollar to continue the membership another year. Detailed preparation for the membership campaign is being worked out at the national convention to be held in Columbus next week. Every chapter in California will have pride in maintaining its war time strength in membership.

COOPERATIVE CANNING

Californians have learned quite effectively the lesson of cooperation. To a certain extent it is becoming common in almost every line of production. Cooperating in canning of our fruits is perhaps the slowest in full realization. We have cooperative canneries built with growers' money which have cost above a quarter of a million. To one of these organizations of growers the war finance corporation made offer of financial help in order that this season's pack might be completed, to the extent of $2,000,000. Therefore, with cooperative canning we are not novices. However, the greater portion of our canned fruits are put up by independent canneries, or a large organization of canneries which largely dominates the canning business of the state. The situation has been such that cling peach growers in the Sacramento Valley have organized the California Canning Peach Growers. Manager M. D. McLeod of that association has been making a thorough study of the California canning situation. He writes:

"The fruit canning business of California is a big proposition, too large in fact for any individual or for any small group of growers from any one section of the state to look at from a distance and say, 'Let's get in and improve the condition.' Cooperative canning is no doubt the necessary balance wheel between the grower and the packer, but it must be handled under the protection of a state organization of cling peach growers which will stabilize the price of fruit to 'all canners alike'; otherwise what assurance have we that there will not be a 'fight,' in which case we have only to ask, 'Where would the balance of power be without a state association behind the cooperative canners? The independent canneries of California run into the hundreds, and half a dozen growers canneries would obviously be lost.'

"There seems to be only one way to control the situation with amity toward all, and that way is for the growers to can, under the protection of the California Canning Peach Growers, as much of their fruit as is necessary to save them from loss, thereby creating a healthy competition which is so necessary to the success of every line of commercial enterprise.

"This condition will not interfere with the development of the present day packers nor should the growers wish to so interfere as it has taken years of advertising California fruits throughout the world and years of distribution to build the industry to its present state of efficiency. Of course growers know that they have helped pay for these institutions, indirectly, it is true, but nevertheless they have helped, and therefore it must be considered that every grower has an investment, and probably a considerable investment, in the canning business, and if he goes out to destroy that industry by duplicating the entire canning capacity of the state with cooperative canneries, is he not doubling his invested money and absolutely destroying the first investment?

"We must consider the prosperity of the state of California as a whole, for in doing so we prosper, every one in it. The solution of this thought lies in the belief that since many growers in the state are not financially able to take on the extra load of erecting or leasing canneries, there should be a state growers association controlling a majority of the fruit of any one variety, the greater the majority the better. This association can then place a price upon the fruit 'to all alike,' thereby eliminating greatly the possibility of speculation and assuring the grower a fair profit whether he cans his own produce or not. Growers must see the necessity, however, of operating this cooperative canning movement as a branch or at least in conjunction with the state growers association and not as a business venture which would place it in the light of an independent cannery.

"There are two sides to every story, however, and the enormous present day investments of the independent canners deserve proper consideration. Growers should not hold the thought of destruction but should place themselves in a position that will command the respect and consideration due from one industry to another. The 'California Canning Peach Growers' will establish this condition for the cling peach men through a business like method of handling the fruit which will be appreciated by all branches of the industry, including the independent canners, the exponents of cooperative canning, and the grower who cannot afford to go into the canning business or who doesn't want to, due to other reasons."

We do not think that any effort to evade a "fight" will be successful. There will always be independent packers of our fruits, and the independent has a way of manifesting his independence by buying for the shortest possible price and selling for the longest. The growers may be induced to cooperate in the way suggested by Mr. McLeod, but we do not think the packers ever can be brought to that point. However, it is possible that the cooperative canners handling a hundred or more different fruits would be slow in coming under the direction of an organization growing only one variety.

The position of the grower who "has helped pay for these institutions" is possibly unique, but we fail to see wherein there should be care to preserve that same institution which fails to treat him fairly. At least the grower will not consider that "the prosperity of California" is a sufficient inducement to justify him in building other canneries and supporting them to the end of time. This sounds too much like the refrain of the big interests which are ever singing: "Support us and we will see that the farmer is made prosperous."

"GRABBING"

In the issue of the California Cultivator of July 30, on page 98, under the title of "Grabbing," we referred to the campaign of certain private hydroelectric interests to prevent the city of Los Angeles from "grabbing" water power possibilities of the Colorado River. This campaign was waged rather bitterly in several sections of California to the end that the city was severely criticized for what we believed at the time to be an effort to secure the best interests of all the people. The city appealed to other communities to join with it in the effort to secure through the reclamation service conservation of the water and power going to waste with every year's floods of the Colorado.

Some farm organizations passed resolutions condemning the city for its action. The Cultivator made appeal in effect that "there is nothing to be gained by calling names and scratching and pulling hair. California needs more cooperative spirit, more getting together and working together. That cannot be secured by following the present movement of trying to stop everybody else from getting what we, the people, are refusing to reach forth and take possession of."

Fortunately that appeal and many others like it have been heeded by many of the farmers who have also done some thinking for themselves, and we now note occasional changes of attitude, as indicated by this quotation from the Elsinore Valley Press:

"At the meeting of the directors of the county farm bureau held in Riverside Tuesday, it was voted to rescind resolutions passed at a special meeting held in July which aligned the farm bureau against the city of Los Angeles in the power controversy."

CITRUS LEAGUE ASKS EARLY FREIGHT HEARING

The California Citrus League issues statement that official action has been taken by its board of directors asking the interstate commerce commission to set for prompt hearing the California citrus fruit case.

The rehearing of this case, which was ordered reopened in June by the commission, was postponed pending the results of a conference with the executive traffic officers of the Western lines, a committee of the California Citrus League and a member of the interstate commerce commission which was held in Washington, D. C., on August 5. Following this conference the Western lines proposed a reduction in the blanket rates from $1.92 to $1.68 per cwt. on oranges and $1.66½ to $1.46 per cwt. on lemons, subject to the concurrence of the lines east of Chicago. The California Citrus League has just been advised that the Eastern lines have declined to concur in the rate reductions on oranges and lemons, and according to E. M. Lyon, president of the league, the industry has been forced to ask the commission to formally review the rates now being exacted.

"Since June, 1918," says Mr. Lyon, "the freight charges on oranges have been increased 86 per cent, and on lemons 71 per cent, and in addition extra charges have been made for special services heretofore covered in the freight rate. Efforts to secure relief from these rates which the industry considers unreasonable from every standpoint, have proven unavailing although reductions have been made in the rates on most of the other principal commodities moving from and to the Pacific Coast."

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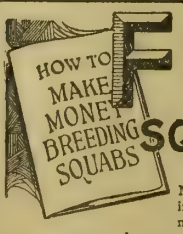

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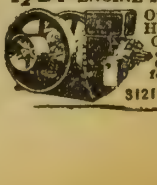

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California Cultivator

Vol. LVII, No. 14 Los Angeles, October 1, 1921 One Dollar Yearly

Los Angeles County Fair in San Fernando Valley

By C. B. Messenger

THE outstanding feature of the Los Angeles County Fair held at San Fernando for seven days was the admirable community spirit shown. The San Fernando Valley is not large as valleys, go, though there are within it something less than a dozen little towns each affording a community center for a large number of real producers, and these producers entered into the spirit of that fair to the fullest. Little individual farms, some of them not over five acres in extent, made exhibits of products covering nearly the whole range of agriculture.

In addition to the showing of community spirit by individuals, there was equally admirable cooperation of the different towns. Each, naturally, wanted to be selected as the location for the fair. Naturally, this couldn't be, and when it seemed best that San Fernando should be chosen, every other community joined most heartily in plans and work. San Fernando Valley was wonderfully well represented in livestock and all the other exhibits. In fact, in the livestock exhibits there were magnificent displays not only from the valley but from other sections of the county and from many other counties and even states.

Tractors were not present in the numbers anticipated, but there were many new models, and in addition there was a remarkably fine showing of implements and power farming equipment. The principal tractor exhibit was a still one, though an adjoining field of hundreds of acres was utilized for demonstration purposes.

"A tractor built to stand ten years of hard work" is one of the slogans of the Wizard 4-Pull. This is a 20-35 fitted with a Kroyer 40 horsepower motor. Its ability to grip with all four wheels makes it look as if the claim that it will operate on all soils under all conditions is not far fetched.

The Tioga Tractor Sales Co., of Los Angeles exhibited and demonstrated a 3-4 Tioga tractor 15-27. This tractor has two speeds, four cylinder, four cycle 4½ inch bore with 6 inch stroke.

On Page 355 may be seen an illustration of the Wallis pulling a disk. This tractor is built by the J. I. Case Plow Works. It is a 15-25 with draw bar pull of 2600 pounds maximum or 2,000 pounds constant. It is equipped with Wallis four cylinder, four cycle valve-in-head engine. Its normal revolutions per minute are 850 to 900. Its most striking feature is perhaps the U-shaped boiler plate frame. At first glance it appears this form of frame would prevent easy access to the working parts. They are reached, however, by a series of port holes conveniently spaced. Total weight of the machine is 3560 pounds.

The Cletrac Model F is of a type "to handle every job on the farm." By convenient arrangement this new model may be changed as to height and as to width, this so as to be fitted to cultivation of low crops. By increasing its height and setting wider than normal it may be made to straddle a row of young corn or of cotton and, carrying its high frame cultivator in advance, do most thorough job of cultivation. The method of attaching this cultivator is shown in illustration. This new model weighs only 1820 pounds and in its most compact form is but 80 inches long, 50 inches high by 32 inches wide. This tractor is declared to be self lubricating. The motor is declared to develop 16 horsepower at normal speed of 1330 R. P. M.

The Allwork kerosene tractor was exhibited by the local dealer in connection with the Railsback people of Los Angeles. This tractor is supplied with heavy duty kerosene motor, four cylinders, 4¾ inch bore, 6 inch stroke. It has 28-14 rating at 900 R. P. M. The machine has a wheel base of 75 inches and measures outside of wheel tires 52 inches. Length over all is an even 10 feet with a weight of 4,500 pounds.

Others there were ranging up to the big power machines. One in particular was pointed out as the type used in cheese factories to extract the butter fat from whey. Whey is about the last thing one would think of as containing butter fat, but in large institutions it has been found that several hundred dollars worth of butter fat has been going to the gutter or to the hogs in the form of whey, and these big powerful separators are now taking it out and the cheese factories have an additional profit which is worth considering. These separators were the Sharples exhibited by the Joy-Reams people of Los Angeles.

In addition, the same people exhibited the Willys light, not a "still life" exhibit, but a real working stock model. The gasoline of the little engine was turned into electricity which was held by the storage batteries and in turn operated washing machine, separator or other small household and farm building appliances. A small electric motor was one feature of this exhibit. This rests upon a tripod and is easily picked up and moved from place to place. The farmer is now able to surround himself with all the comforts of the city, if he has the price, and the price is not prohibitive. These electrical lighting equipments may be installed for less than $300 or, if one has large buildings and widely separated lights, as much as $700.

Nor were tractors the only interesting thing in the power and implement tent. Of course there were automobiles, accessories, implements for shallow cultivation and implements for deepest cultivation, and in irrigation supplies, many varieties of pipes, pumps and distributing appliances. It seemed that only capital was necessary in order to equip a genuine little Utopia in the form of a California ranch. A list of the appliances would fill a page; we will refer to only one or two. The first of these is cream separators. We have always been told that a separator was for five, ten or more cows. This time we saw the little baby separator, the simplest little thing ever, that one could almost turn with his little finger, and declared to be just right for two or three goats or one Jersey. This was no plaything but a for-sure working machine. Of course this baby separator was not the only one in the exhibition though it was the one which drew the greatest attention from Madam Wife.

LIVESTOCK

By Jack Klein

The Los Angeles County Fair at San Fernando proved very conclusively that the breeders of livestock in the southern part of the state are looking for the proper place to show what they are doing. Outside of good money and the promise of good accommodations this fair had little to offer at the start, but the breeders are all very enthusiastic over their treatment and the great number of inquiries they had.

Holsteins

The Holstein show was one of the largest ever assembled in this state and numbered over a hundred head. It was the initial showing for Hartsook, the Maxwell Farms and the Santa Monica Dairy Co., but the stock was in the hands of competent men and with three old time National Dairy Show men and a number of well known California show men in the ring with animals of excellent type, the interest was intense. Jack Shillcock, formerly showman for W. W. Marsh and Bob Hager, showed King Segis Pontiac Jannek into grand champion-

King Segis Pontiac Jannek
Grand champion Los Angeles County Fair at San Fernando. Owned by Santa Monica Dairy Co.

ship. This was a great victory for Jannek has been regarded as an untamable bull. The careful handling and training of the Santa Monica Dairy Company given the bull since his purchase at the Jefferies sale has brought out his good nature and he gave no more trouble than a calf. Jannek is a grand bull and it is fine that he can be shown. It is a question whether there is a bull in the state who can defeat this fellow. It was quite a day for the bull, as he was placed grand champion the first time shown and it happened to be his seventh birthday.

In the two year olds Carl Ray's bull was head and shoulders over the other two.

The senior yearlings brought into the ring King Segis Pontiac Aero, owned by Robert N. Clapp of Nuevo and handled by "Barney" Ademock, formerly with Bob Hager, and Sir Ormsby Hengerveld, owned by the Maxwell Farms and handled by Pete

(Continued on Page 355.)

Agricultural News Notes of the Pacific Coast

Northern California

Sonoma County celebrated its pioneer home-coming festival last week.

Placer County fruit growers will meet in convention at Auburn, October 11-12.

An artichoke show is being planned by growers in the Half Moon Bay district.

Alameda County's new farm adviser, Russell Robinson, has taken up his work.

The Ehmann olive mill at Oroville is being made ready for the season's work.

The Glenn County fair, held at Orland last week had an unusually large livestock exhibit.

A six weeks' poultry course was started at the university farm at Davis on Monday, September 26.

The Galt farm bureau calf club exhibited at the state fair, members bringing home a number of prizes.

Farmers' wives of Solano County have petitioned the supervisors to appoint a home demonstration agent.

A dress form demonstration was given recently at Willows, Glenn County, by the university extension.

The farm bureau of Napa County is cooperating with the U. S. biological survey in trapping and shooting coyotes.

One kindergarten class in the Colusa schools reports attendance of 17 Japanese children in a class membership of 40.

Supervisors of Colusa County have approved a number of road grading contracts in various sections of the county.

The Lake center of the Glenn County farm bureau is asking the river section to cooperate in the eradication of star thistle.

A hundred Napa poultrymen visited Petaluma poultry plants last week, spending much time at the laying contest buildings.

The Placer County fruit growers convention will be held the middle of next month, place and exact date to be announced later.

Another rice association is being talked up in Butte County owing to some dissatisfaction with the contract offered by the Pacific Rice Growers.

The marketing exchange of the Mendocino County farm bureau made livestock sales during the month of August which returned to the owners $35,000.

The home extension department of the Sacramento County farm bureau has resumed activities for the fall season. Pickling demonstrations are now in order.

The Lake farm bureau center of Glenn County is interested in forming a cow testing association. Meetings of dairymen were held Sept. 14 and 15 to discuss the matter.

The Sonoma County Cow Testing Association at its recent annual meeting at Santa Rosa elected S. G. Gambonini, manager, and C. B. Wiborg, official tester. The association has 1250 cows on the list.

T. H. Silsbee of the Oak Park center of Tehama County was re-elected president of the county farm bureau at the annual meeting held recently at Courtland Park. 4,000 farmers attended the meeting.

Central California

Raisins are finding a ready market in Japan.

Mariposa County is now beginning to dig its potato crop.

A few cases of anthrax are reported from San Benito County.

Watsonville will hold a big apple show some time next month.

Clovis, Fresno County, is sending out 6 or 7 carloads of fruit daily.

Rice fields in the Claus district of Stanislaus County show binders at work.

Directors of the San Joaquin County farm bureau hold their annual meeting today at Stockton.

Horticultural Commissioner C. C. Collins of Tulare County has announced his resignation.

Farmers of the Hughson section of Stanislaus County are in the midst of a big weed cleanup campaign.

The California Peach Growers, Inc., has twice advanced prices on dried peaches during the last 60 days.

It is announced that the Reedley cannery, which was closed this season, will open to handle the 1922 crop.

Prof. J. W. Nelson will hold a series of six soil moisture demonstrations in San Joaquin County, October 6 and 7.

Green Valley and Corralitos sections of Santa Cruz County report the Bellflower crop 70 to 80 per cent of normal.

Prices on old raisins were advanced by the Associated Raisin Company one-half cent for September-October shipment.

The annual fig institute will be held at Fresno some time in January. It is planned to make a large exhibit of dried fruit.

There is some talk of imposing a quarantine on sweet potatoes brought in from Southern states where sweet potato weevil exists.

Fresno County again won grand prize at the state fair for best and most complete exhibit of products. Kings County came second.

Stanislaus County fig growers met at Ceres recently for a demonstration of fig packing conducted by the Peach and Fig Growers Association.

Farm home department meetings will be held in Kern County at Kern Delta, September 27; Bearsley, 28; Wasco, 29; Edison-Fairfax, 30.

The Claus center of the Stanislaus County farm bureau held its annual farm bureau picnic at Meyers Grove, east of Riverbank, September 18.

The farm home department meetings for October in San Joaquin County will be all day sessions, at which hat making will be demonstrated.

The newly organized Lindsay-Strathmore Pomegranate Association is busy with box making and other shipping preparations. The fruit is nearly ready for harvest.

It will cost $81,000 to stage this year's Fresno district fair, opening Monday, September 26, for one week. However, $35,000 of the budget is for a permanent automobile exhibit building. Of the balance of $46,000, $37,000 will be distributed in premiums and prize money.

Southern California

Ventura County holds its fair the coming week, October 5-9.

A honey warehouse at Rialto was destroyed by fire last week.

Many cattle are being fed on beet tops in the Talbert section of Orange County.

Victor Valley, San Bernardino County, is making carload shipments of apples.

Venturans are now making use of the Santa Susana Grade when going into Los Angeles County.

The Associated Chambers of Commerc of Orange County met at Huntington Beach September 21.

The El Modeno farm center of Orange County had a community dinner at its September 12 meeting.

The Anaheim chamber of commerce has appointed committees to plan for the 1922 Valencia orange show.

The Anaheim Citrus Fruit Association has unanimously voted to increase its capital from $50,000 to $200,000.

Valencia growers of Orange County say they have received a net of $13,000,000 for this year's Valencias.

The Anaheim sugar factory expects to run for 120 days. The average run of Orange County factories was 90 days.

Contractors have been through the bean districts of Orange County lining up bean straw to be baled and sold as fertilizer in orchards.

Many Southern California potato growers are planning to attend the state meeting of potato growers at the University Farm, Davis, October 3-5.

The pure bred calf club of Ventura County has enrolled six boys and one girl and expects to more than double this number. The breed chosen is the Holstein.

One of the most attractive exhibits at the Southern California Fair at Riverside, Oct. 11-16, will be the Indian arts and crafts from the Sherman school.

A special feature of the annual meeting of the Los Angeles County farm bureau at Pomona, September 28, was the inspection of the egg laying contest grounds.

The Orange County Beekeepers Association met at Santa Ana September 17. O. T. Andrews of Ontario gave a talk on the honey situation and cooperation.

Flood protection costs of the Palo Verde joint levee district for the current year amount to $141,344.53. A very small part of this will be paid by Imperial County.

Representatives from the Greenville, Smeltzer and San Joaquin Lima Bean Growers Association of Orange County attended the annual of the state association at Oxnard last week.

R. D. Flaherty has been appointed secretary-manager of the Orange County farm bureau. Mr. Flaherty was formerly executive-manager of the Jackson County, Oregon, farm bureau exchange.

The Lima Bean Growers Association finds general market conditions satisfactory. All old stock has been disposed of and the new beans will be placed on the market at prevailing prices, $5.65-$6.00 a bag f. o. b. California.

The Coast and General

December 13-17 will be farm week at Albany, Oregon.

Malheur County, Oregon, will market 200 carloads of potatoes.

Tomato growers in the Milton district, Oregon, are shipping a 30 carload crop.

Clarke County, Washington, prune growers are receiving packers offers of 8 cents a pound for 30-40's.

Grazing possibilities in the Umatilla national forest will be surveyed by the U. S. forestry bureau.

Cotton in the Salt River Valley of Arizona will compare favorably with the average of the last five years.

The Oregon Wool and Mohair Association has 1600 members, the territory being divided into ten districts.

The annual short course in agriculture at the Washington state college starts January 2, continuing for eight weeks.

Cranberry growers of Pacific County, Washington, are paying for hand picking 20 cents a peck; scooping 50 cents an hour.

October 1 is grange and farm bureau day at the Snohomish County fair held at Granite Falls, Washington, September 29-October 2.

Secretary of War Weeks reports offer from C. E. James of Chattanooga, Tennessee, to take over the Muscle Shoal nitrate project in Tennessee.

A combined harvester with more than 1500 sacks of wheat were destroyed recently by smut explosion on a ranch near Walla Walla, Washington.

C. L. Hawley, state dairy and food commissioner of Oregon, will be a member of a committee of 11 on dairy marketing of the American Farm Bureau.

Heavy rains on the stock ranges in Arizona have assured abundance of well cured winter pasture. Quantities of wild hay have already been cut and stacked.

Grape growers of Arizona held a well attended meeting at Phoenix the first of the month to study working methods of the California Associated Raisin Company.

Potato Expert Zundel from the Washington state college has been giving demonstrations in Yakima County on potato diseases and better methods of cultivation.

Since the Spokane branch of the federal farm land bank resumed business May 1 it has loaned to farmers of Washington, Oregon, Idaho and Montana three and a half million dollars.

President Howard of the American Farm Bureau Federation has announced appointment of the farmers fruit marketing committee of 1921. Among them are J. E. Johnson, Grand Junction, Colorado; W. B. Armstrong, Yakima, Washington; C. I. Lewis, Salem, Oregon; Sheridan W. Baker, Santa Rosa, and R. B. Peters, Devore.

The woman's auxiliary of the Snohomish County, Washington, fair association is proud of the new building secured by its efforts on the county fair grounds. In addition to extensive exhibits in this building there is planned a comprehensive program of lectures and demonstrations on nutrition, child welfare, home gardens and other topics of interest to home makers.

Raisin Curing Scenes in Central California

Left: A battery of sulphur houses. Dipping vats in building at right. Center: sulphur bleached raisins drying and in the stack. Right: One of the largest dry yards in the state. About 700 tons of soda dipped and sulphur bleached raisins are dried in this yard each year. Eager Vineyard near Marysville.

Making Quality Raisins

By Fred K. Howard

SUPREME quality, speaking of Muscat raisins, is the Imperial Cluster. This is a hand sorted layer raisin, and those produced in certain districts of California cannot be equaled by any other raisins in the world. To produce Imperial Clusters, the grower must be blessed with ideal soil, just the right irrigation, and the right kind of drying weather. He must also know how to cure raisins and how to properly make hand sorted layers.

What Are Hand Sorted Layers?

The term, "hand sorted layers," is in a measure self explanatory but may well be elaborated upon here. Only the vineyards which have a good crop of large berries and bunches should be considered when making these fancy raisins. They are picked with great care to prevent bruising the berries or detaching them from the stem, and dried in the usual way except that they are allowed to cure in the stack more than is desirable for the ordinary raisin. That is, they are not allowed to remain in the sun as long as other raisins and go through a process which is known as stack curing. This method requires more time and skill on the part of the vineyardist but has the desired effect on the raisin. After they are properly cured the grower takes each tray and carefully selects the very finest bunches or clusters and places them in the sweat box which has first been lined with paper. After each layer has been placed in the box another paper is placed on them to keep the fruit from becoming jumbled together. The layers are delivered to the packing houses in this manner. Right here a novice may be thinking that this is a lot of extra work if he does not receive more money for his product. He does receive more money—this is the way it works out. If a grower thinks he has the sort of fruit which will make good layers he can enter into an agreement with the Associated Raisin Company, provided, of course he is already a member of that organization, to make layers. In this agreement the company agrees to pay on delivery $15 per ton, which covers the cost of making the layers. In addition to this the grower is entitled to an additional $10 per ton on delivery as a premium for delivering Extra Standard raisins. Further than this they can be delivered with about a ten per cent higher moisture content than ordinary raisins, which amounts to considerable, and in addition they are treated as though a separate variety, and the proceeds are pro rated among the growers delivering these goods on the basis of grades packed out. It certainly pays to produce good raisins.

Soda Dipped Raisins

There was a time when soda dipped or lye dipped raisins were considered superior in quality to the natural product, but that time is rapidly passing. Still there is a very legitimate reason for producing this class of raisins as well as the so-called sulphur bleached raisin. Certain districts are not favored with ideal drying conditions in the fall as the rains may come a little earlier or the nights be damp, so it is necessary to do something which will hasten the drying time. This is done by dipping the fresh grapes in a hot alkaline bath which very slightly cracks the skin. They are then thoroughly rinsed in clean, fresh water and placed on trays to be dried. The drying process is essentially the same as with the natural raisin except that instead of drying in the vineyard rows they are placed in large dry yards, which permits ease of handling and more ready access in case of rain. Thompsons are about the only grapes treated in this manner in California. In the past, as we have mentioned above, these raisins were considered superior, possibly because most of the imported raisins are treated in this manner, and it has taken the consumers of the world some time to become accustomed to the California natural raisin. At the present time it is very difficult to find markets for even the comparatively small tonnage produced in California at a price which will pay the grower for the extra effort of dipping. At present it appears that the grower who is so unfavorably situated as to find it necessary to dip his raisins is really operating under a handicap.

Sulphur Bleaching

The use of sulphur for bleaching is another trick which was given us by the old country raisin growers, and one which is also gradually going out of style in California. This is largely because of the limited demand for this sort. Sulphur bleaching is accomplished by submitting the soda dipped grapes to the fumes of burning sulphur before drying. To make a good grade of sulphur bleached raisins it is absolutely essential that the grapes be uniformly ripe. Bleaching is one of the quickest ways of telling real quality in raisins. If the sugar is not actually in the grapes when picked they will show up as off-color fruit when the drying is completed. This immediately throws the delivery into a lower grade and the grower loses money. Sulphur bleached raisins will carry through rainy or foggy weather during the drying period better than will any other class of raisin, probably due to the presence of sulphur on the fruit, which is of course a fungicide and probably prevents the development of molds. After the visit to the sulphur house the curing of this sort of raisins is the same as for soda dipped.

In general it may be said that a grower should not attempt to dip or bleach his raisins if it is possible to dry them naturally. While in the past a little better price has been paid for this class of goods the differential is rapidly growing less and will very shortly disappear. There is, of course, considerable expense attached to making this sort of raisins and wherever possible this should be saved. Remember that the judge of our fruit, the consumer, has decreed that the extra effort and expense is not justified and that in reality it is not a better product. There is plenty of acreage in districts where dipping and bleaching is necessary to take care of normal consumer demand.

October in the Vegetable Garden

Northern California

By A. R. Gould

WE should be taking a chance were we to predict early rains this season. However, there's nothing like being prepared, and we would advise having all plots cleared of any crops now matured and the ground put into shape for the coming planting season. Have them well trenched with manure. Where necessary apply lime and work into the surface. Remember successful cropping depends on soil preparation largely. When collecting seeds save only those from desirable types. Follow a system of rotation in cropping as far as possible and consult your record book to do this, which by the way is a helpful thing to keep.

Lettuce

Make a sowing of Los Angeles this month in rows very thinly. Thoroughly cultivate those sown previously and keep moist. Have the soil well prepared with manure well rotted, as any such attention will be repaid with crisp heads of lettuce.

Beans

The Broad Windsor may be sown now in rows two to three feet apart. This bean is of excellent flavor and deserves to be more widely grown. It is perfectly hardy. Collect beans of any of the late varieties and store for the winter.

Carrots

If you failed to sow last month for a successional crop sow now Danvers Half Long and French Forcing very thinly. Carrots thrive on a rich sandy soil and require moderate moisture.

Tomatoes

All sound fruits should be collected before the end of the month as they will ripen quickly inside and cold nights will retard development outside.

Peas

Early varieties of these may now be sown and the ground prepared by deep trenching and moderate application of manure. To secure successional supply sowings should be made every three or four weeks. The dwarf types are usually the most popular, but among the tall growing are varieties of excellent quality and as a good early we can recommend Laxton. Dwarf early varieties we advise are Blue Bantam, Little Marvel and Laxtonian. Sow in rows, not too thickly, at least two feet apart to allow proper space for cultivating as they need this frequently and also plenty of moisture during the growing season.

Beets

Those sown last month as advised will require thinning out and to allow space for development they should be left 6 inches apart. Dig all matured roots and store in the cellar for winter use.

Parsnips

Still time to sow this on well prepared ground. Hollow Crown is the best variety. Those sown last month will also need thinning to 6 inches apart.

Swiss Chard

This is an excellent vegetable and is used as spinach and sowing may now be made in rows 2 feet apart. It also makes fine feed for poultry.

Cabbage

Set out strong plants of winter varieties, Savoy and Autumn King, on well prepared ground. They should be planted very firmly 12 inches apart in rows 2 feet apart.

Onions

The ground must be well prepared by trenching with manure for this crop as onions delight in a rich soil. Early varieties may be sown such as Early Pearl, Early Californian Red and White Bermuda. Sow the seed very thinly in rows about 20 inches apart. A surface dressing with soot or wood ashes will be very helpful.

Leeks and Celery

These are both good winter crops and require liberal feeding with liquid manure to bring them to perfection.

Radish

For winter use sow Black Spanish and Rose Winter in rows 18 inches apart on very rich soil.

(Continued on Page 348.)

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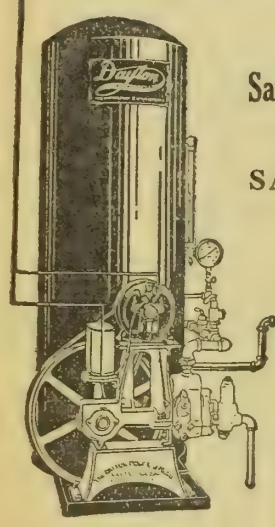

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SERIOUS WALNUT DISEASE

By Ernest Braunton

A FOOT rot, root rot, or crown gall has been affecting walnut trees for many years and has been given all the names herein noted, also "heart failure"; but the latter name is applicable only to the condition of the orchard owner when he suddenly discovers he is seriously injured by the disease. Otherwise the name heart failure should be dropped for the disease does not attack the tree, but the root, or California black stock only.

During the past few years, especially the late three dry ones, the disease has spread at a truly alarming rate in all parts of the state. In company with R. W. Hodgson, farm adviser of Los Angeles County, the writer visited the orchard of Robert H. Neely, president of the Los Angeles County farm bureau, at Covina. In this orchard, up to the close of the day, September 26, nearly 30 trees had the soil dug away from the trunks from one to two feet deep and some of the affected parts chiseled away in examinations. Be it clearly understood that the Persian or so-called English, walnut tree is not affected in the least. Seedling trees in this and other orchards are immune. It is the California native black stock that is diseased and all tissue above the union is immune. It has been thought the dwarf Southern California Juglans Californica is more readily and more fatally affected than the larger growing variety, Hindsii, native to more northerly counties. But this has not yet been clearly proven.

This is what is found. From mere pockets of small size up to the entire stump the wood is dead and rotten, emitting a very disagreeable smell that attracts flies as soon as exposed. The color of the dead tissue is black and the closely surrounding soil is stained black. The texture of the nasty pulpy mass of dead tissue may be likened to a mixture of shredded wood and asphaltum, except it is less sticky and has a strong sickening stench. All sorts of conditions are found in the variance between free stumps and dead stumps. On some, parts of roots and stumps are alive that in others are dead. The points of first attack and progress of the disease vary much and are baffling to the tree doctor.

This is what is being done to the Neely trees by advice of Mr. Hodgson: The soil is dug away down to the lowest part of affected area so the nasty mess will dry out. Doubtless complete drying will kill it. All affected tissue is chiseled away. Then Bordeaux paste is applied and soil is not replaced about the tree. The effects of this treatment will be closely observed. The writer has suggested that in addition dry lime be sprinkled or scattered in the holes and on surface close about the tree. Of course no more irrigating will be done, but rains will come and it is certain that the lime will then prove a valuable amendment to the Bordeaux if this treatment proves efficacious.

The Cultivator will keep in close touch with this orchard and others affected and report progress of disease and effects of any treatments given. One fact is beyond question; it is the most serious disease attacking any kind of orchard trees in this section for a period of many years.

* * *

(Some practical growers insist that this trouble is a virulent case of crown gall, or root knot. That trouble is liable to manifest itself now in the form of decay forming a mass of chocolate or black decaying material around roots just under surface of ground. In Bulletin 218 Prof. Ralph E. Smith raises doubt, however, as to whether these knots are due to the real crown gall organism, bacterium tumefaciens, but in that book the suggestion is made that the only available treatment is as suggested above, "as soon as trouble appears cut out diseased tissue, disinfect with Bordeaux paste and paint over the wound. —Edit.)

The Carpinteria warehouse of the Santa Barbara County Walnut Growers Association is now open for the season's pack.

The Santa Susana grade is now open for traffic.

YUCAIPA APPLE FESTIVAL

The Yucaipa Valley of San Bernardino County will celebrate its apple harvest in a two day festival October 7 and 8. Actual picking figures show real cause for celebration, for the tonnage is proving much heavier than estimated. Forty thousand boxes have already been shipped out of the valley. The Yucaipa Apple Growers Association has started its second grader and will soon have a third in operation. This association expects to handle 40,000 boxes this season; it had sent out 10,000 to date of September 16. This association has secured cold storage in Redlands for about 20,000 boxes.

Regarding the festival the Yucaipa News says: "One of the big features of the apple festival to be given Friday and Saturday, October 7 and 8, will be the competitive display of the finest product of the valley in both box and plate exhibits. While no attempt will be made to put on a big apple show, nevertheless there is so much fruit of exceptional quality this year and so many orchardists think that they have the "finest," an opportunity will be given to meet in open competition and determine just who has grown the best apples."

VENTURA FAIR

The seventh annual Ventura Fair will open at Ventura next Wednesday. Installation of the exhibits is well under way and when the doors open Wednesday, Ventura County looks for the greatest number of visitors in her history for this show is designed to attract homeseekers, those who are versed in the agricultural, horticultural and livestock industries.

In livestock there will be exhibits from all the well known breeders of horses, cattle, sheep, swine, etc. There will be a National Swiss Mondaine pigeon show, a cat show, a California Rhode Island Red show and many other features.

The horse show will be under direction of F. J. Donovan and F. W. Mathieson. Prizes aggregating $3,000 will be awarded. Livestock premiums will amount to $15,000, poultry $5,000, and agricultural $7,000.

At a recent meeting the directors of the Riverside County farm bureau voted to rescind resolutions passed at a special meeting held in July which aligned the farm bureau against the city of Los Angeles in the power controversy.

The public utilities committee of the Orange County farm bureau has received from the railroad commission announcement of big power rate cuts.

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VEGETABLE GARDEN FOR OCTOBER IN NORTHERN CALIFORNIA

(Continued from Page 345.)

Strawberries

New plots may still be prepared. Secure strong plants of these as soon as possible to get them established before the rains commence. Plant on ridges and make irrigation trenches. The rows should be 2½ feet apart, and the plants 12 inches.

Raspberries

This plot should be replanted and canes divided. New plots should also be established with varieties St. Regis and Cuthbert. La France is of recent introduction and is an everbearing type. Trench in well decayed manure to get best results.

One Calexico cotton grower sold 3,000 cotton bales recently at 17½ cents.

Southern California

By W. F. Reichard

AT FIRST thought one does not consider October an important month for the vegetable grower—but just a minute—how about the stuff that was planted during the last two months? It all needs atention, irrigating, cultivating, thinning out and so forth.

Then the garden in general needs going over. Clean up the old crops, put into the compost pile all the old dead plants and litter except those which are affected with bugs or fungi; these latter should be burned. Take in your matured crops of winter squash and pumpkins before an early frost blights the exposed parts, store them in a dry, cool place. Sweet potatoes should be dug, for if the vines get frostbitten it affects the tubers by taking much of their flavor away. When digging the potatoes handle them carefully so as not to bruise or scratch. Select perfect potatoes without scratches or bruises for winter storing.

You will need to take the same method of getting your land wet and worked up as described in last month's planting callendar.

Plantings during this month will comprise the more hardy vegetables such as Egyptian beets, half long and French forcing carrots; Winnningstadt and Cannonball cabbage; Snowball cauliflower; Swiss chard; curled endive; chickory; Los Angeles Market lettuce; leek; parsnip; radish; turnip; winter spinach; Laxtonian peas for quick crop and Stratagem or Senator for a little later. In protected foothill sections Canadian and Ventura Wonder beans will be planted. October is the best month to put out garlic and onion sets. Put out plants of cabbage, cauliflower and lettuce, Swiss chard and kale.

On ground that is cleaned up and on which no crop is to be planted this winter scatter a thick layer of barnyard or poultry manure, which will later be worked in.

Southern Arizona

By M. E. Bemis

MORE gardens for the farms and for city and town people should be the rule, and there are plenty of indications that this is the tendency, but it is unfortunately true that high freight rates will temporarily at least discourage large plantings of commercial crops such as lettuce which has become an important shipping crop, and spinach and cabbage, which were beginning to have some very promising aspects as prospective commercial crops.

Unless favorable rulings for lower freight rates are made very shortly, the commercial plantings of lettuce, except for local use, will be small this year. The fact that in southern Arizona can be grown a very superior quality of lettuce should be an encouragement for all who have a plot of ground to plant a succession of this salad which is no longer considered a luxury but a necessity, supplying some of the vitamines that we need.

Lettuce is easily grown, and for the home garden almost any kind of soil will answer if well fertilized. October is a good month to plant, especially for the main crop. At this season of the year there should be little trouble about germination and growth should be rapid. The plants should be thinned when the third leaf shows. Irrigation should be frequent and cultivations follow each irrigation.

Other things that may be planted in October are beets, cabbage seed, cabbage plants, carrots, celery, cauliflower seed and plants, endive, kohlrabi, leeks, onion seed and sets, parsley, parsnips, peas, radishes, salsify, spinach and turnips.

Taking these in their order, the varieties of beets that seem best adapted to Arizona conditions are Crosby's Egyptian, Early Blood Turnip, Early Eclipse and Detroit Red. Swiss chard is splendid for greens and poultry feed. Several poultymen plant one or two rows in the garden for this purpose exclusively. Stock beets are also worth while planting for poultry. Planted now, they will mature in the early spring and furnish a succulent feed for poultry at a time when it is needed.

Early Jersey Wakefield, All Seasons, Sure Head and some other varieties of cabbage do well and are so easily grown that no family need be without them. Seed planted in the ground where they are to grow will be all right for the early part of the month.

Probably as a general thing it will be better to buy the plants and set out.

Carrots are an old stand-by that should be eaten more and that would call for more extensive plantings. Danver's Half Long, Ox Heart, Improved Chantenay and Improved Long Orange are favorites.

Cauliflower seed, like cabbage, should be planted where it is to grow, and rooted plants for transplanting would be preferable. Henderson's Early Snow Ball and Large Pearl are the varieties most recommended.

Endive is a salad which may be grown with little trouble and adds variety to the table. May be planted in beds and transplanted four inches apart in 18 inch rows.

Kohlrabi is another vegetable that adds a little variety although with most people not as popular as cabbage or turnips, both of which it resembles somewhat.

The late varieties of garden peas are best planted now. Yorkshire Hero has long been a favorite with Arizona gardeners, but there are many other varieties that do well. Parsnips should have much the same attention as carrots and are easily raised. Hollow Crown is recommended. Parsley is somewhat hard to make germinate but may be helped along by planting very shallowly and using a light mulch.

Onions of the Bermuda, Crystal White or Australian Brown varieties are splendid for the small gardener. Seed planted now should produce a supply of green onions throughout a good part of the winter and early spring and a crop of dry onions later. Onion sets may be put out if one prefers.

Spinach is one of those vegetables which seem to be especially well adapted to the climate of southern

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Arizona. Like lettuce when freight rates will justify there is a field for commercial planters, and considerable shipments have been made during the past few years, proving that eastern markets are ready to take it if it can be had at prices which will justify.

For the home gardener spinach has a place and should not be neglected. The Prickly Seeded Winter is generally preferred.

Radishes and turnips need little mention. Both may be planted continuously until next spring, furnishing the table from November to April.

October in the Ornamental Garden

Southern California

By Ernest Braunton

IN Southern California, though we garden throughout the year, and plant too for that matter, still we have two planting seasons. The first corresponds to the spring planting season of Eastern states, April-May, and the other is peculiarly our own, October-November, when we plant for the rainy season, which east of the Rockies is known as winter.

Autumn Bulbs

By some gardeners October is called the bulb month, especially so if the cool weather and rains come early. "We" will venture a guess that November will be equally good this year. The first to be planted are freesias and Watsonias and some plant these in September. Cyclamen may be next and then the dwarf gladiolus, Bride, Blushing Bride and Peachblow. There is an earlier species, a light yellow, growing wild in South Africa, Gladiolus tristis, which should be grown by all if bulbs can be procured. It has been growing in the writer's garden for 15 years without transplanting the bulbs. Next come the daffodils or narcissus. None are more satisfactory than the large trumpet varieties, Empress and Emperor. Spanish iris may be had in a dozen named varieties, ranging from white through blue to purple and through yellow to the smoky bronze "Thundercloud." Tulips, especially of the late varieties, will do well if planted deep, in free very rich loam and given an abundance of water.

The bulbous anemones give a great crop of blossoms over a considerable range of color, from white to blue and red, but no yellows. Ranunculus, or French buttercups, usually are planted at the same time and are not much unlike the anemones in appearance and requirements, also equally satisfactory, with great color range, and containing fine yellows. Japanese "Easter" and Madonna lilies may be planted now, but put Lilium auratum, the golden banded lily, not less than six inches deep. Put a handful of sharp sand in the hole, set the bulb on it and drop at least one handful of sand on the bulb before covering with soil. This may prevent decay if bulbs are slow to start. It is good practice with all true lilies, for they have loose scaly bulbs. All that class of bulbs known as Dutch or Holland bulbs, which includes the hyacinth, may be planted this month.

Hardy Perennials

These are often referred to as "like our grandmothers used to grow," but their granddaughters have larger and better ones with a far better variety. Foxgloves, columbines, larkspurs, goldenrod, golden glow, Shasta daisy, penstemons, Canterbury bells and other campanulas, including the "blue bell of Scotland" may all be put in at once and good results reasonably assured. Calendulas, cinerarias, lobelias, pansies, "pinks," poppies, primroses (especially Primula malacoides,) petunias and verbenas are other plants to set out now.

Seeds to sow are: Calendula, centurea, coreopsis, columbine, foxglove, forget-me-not, larkspur, hunnemania, lobelia, mignonette, pansy, phlox, penstemon, salpiglossis, scabiosa, snapdragon, stock, sweet pea, and almost any perennial. Some cuttings may also be easily rooted now; begonia, fuchsia, heliotrope, marguerite, etc., but do it at once—a month later will be too cold.

Do not forget in sowing seed to have a plat devoted to California wild flowers.

If rains come lightly prune the roses at once, merely taking out weak wood, crossing branches or thin, congested centers. If you wish fewer and larger blooms, prune and feed heavily.

Get ready for a new lawn if in need of one. Plant hardy evergreen trees and shrubs, especially native Californians. Take note now of what trees and shrubs have passed through the summer without irrigation.

Northern California

By A. R. Gould

THE recent early rains and the cool days remind that the planting season is here. Shrubs may be moved safely now, in fact, it is wise to get them into their new positions before the heavy rains. Make a general survey of your garden for any change you may wish to make.

When planting shrubs have the holes well prepared and always much larger than the ball of the shrub.

The lawns will also need attention. A dressing with dried blood and bone will stimulate growth at this time. Roses may be pruned back and the climbers should be tied in. Apply farm yard manure to the roots of these, but it should be well rotted. Other vines such as wistaria, jasmine, tecoma, passiflora, etc., all need attention, and manure will help these. New vines may also be planted now.

Bulbs

For the next two months bulbs of all kinds may be planted, and the sooner the daffodils, narcissus, crocus, hyacinths and freesias are in the better will be the results. We have given a selection of the best from time to time in these notes but a glance at the latest catalog will give full description. Tulips of all types should be ordered now and may be planted later. Narcissus are well adapted for cut flowers and should be planted in quantity.

Liliums

Some of these should be in every border as they are very effective and beautiful. The best are L Henryi, L. longiflorum multiflorum, L. Auratum, L. Pardalinum, Speciosum rubrum and L. tigrinum. They delight in semi-shade and well manured soil.

Gladiolus

These are most valuable as a cut flower and they give color to the border. There are a number of named varieties of very delicate shades but if you would like only one of these do not fail to get Prince of Wales. It's one of the very best we have seen. These should be ordered now and may be planted next month. The Fordhook strain may be raised from seed to flower in a year and seed may be sown now in boxes of fine soil. This strain will produce some choice flowers and is more than interesting to grow.

Sweet Peas

Complete the sowing of winter flowering types of sweet peas this month in well prepared trenches. The best are Fire King, Melody, Songster, Snowflake and Spring Maid.

Flowers for Winter and Spring

Snapdragons, Sweet Williams, pansies, violas, forget-me-nots, wallflowers, winter stocks, etc., should have been transplanted from the seed beds and receive every care. Beds and borders should be prepared this month for the winter flowers.

Ranunculus and Oxalis

For cut flowers ranunculus are hard to beat as they are of beautiful shades and flower early in the spring. Secure bulbs of these now and plant six inches apart. Oxalis are wonderful for borders and may be secured in white, pink, lavender and yellow. Plant 8 inches apart.

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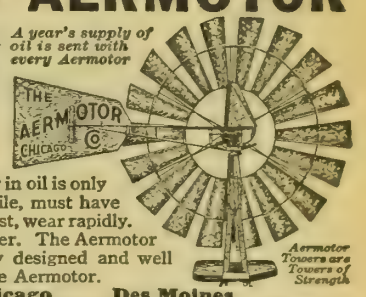

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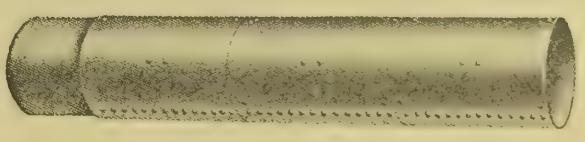

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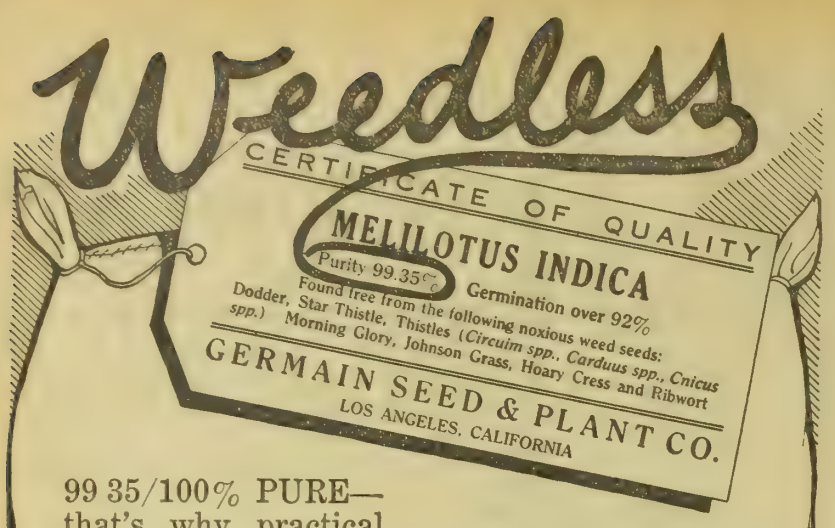
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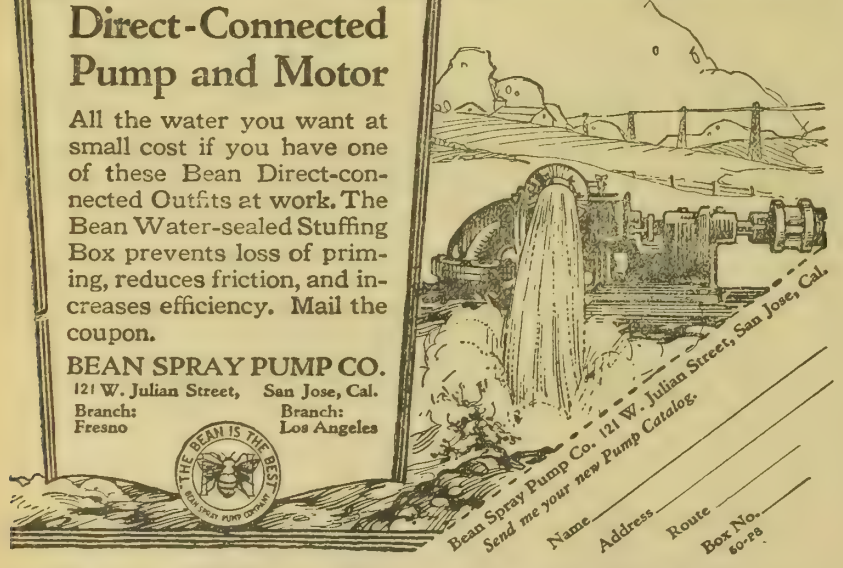

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Delphiniums

This is the most useful perennial of all and is now to be had in almost every shade of blue. There are now a number of choice hybrids. They may be raised from seed to flower the first year, but in the young seedling stage require careful handling as excessive moisture will cause them to damp off very easily. The dwarf type growing 12 inches high is known as Chinensis and may be had in light and dark blue shades. They like a fairly heavy soil, well manured. If cut down immediately after flowering, they will throw up again within a few weeks.

Southern Arizona

By M. E. Bemis

THE list of ornamentals for October is sufficiently lengthy to enable those who so desire to make a selection and still plant quite a variety, a variety that will harmonize and add to the hominess of the home far more than the actual cost in money or in labor. The list includes African daisy, calendula, clarkia, coreopsis, cosmos, daisy, globe amaranth, gaillardia, hollyhock, larkspur, mignonette, nicotiana, nigelia, pansy, petunia, phlox, poppy, scabiosa, stock and sweet pea.

The African daisy is a native of Africa, but is apparently well adapted to southern Arizona and is popular here. The calendula grows about one foot high and is attractive as a border plant. Clarkia grows a little taller, is a profuse flowering plant with white and purple blossoms both single and double. Double daisy and Shasta daisy, like the African, are favorites because easily grown. Hollyhocks planted here in the fall will bloom throughout a large part of the next season. For filling unsightly corners or hiding ugly fences where vines are not wanted, hollyhocks are unequaled. Larkspur and poppies make a pretty combination.

Pansies are a little hard to germinate. Sowing in finely prepared, rather sandy soil, and mulching is a help to germination. Phlox and mignonette are old favorites, that our eastern grandmothers planted in the spring, but that we in this more favored climate may plant in the fall for spring and summer flowering.

Sweet peas are becoming each season more and more of a favorite. They grow readily but respond wonderfully to culture. It is too late to plant the Christmas flowering variety for best results, but the well known Spencer varieties may be planted in October and November.

While the amount of time required to properly prepare the seed bed for flowers is small as compared to the long time that the flowers may be enjoyed, it nevertheless requires considerable effort to get the ground properly fertilized and pulverized, and without this preparation one cannot expect best results.

Flower seeds may be supplemented with bulbs for the October planting, the list comprising hyacinths, tulips, daffodils, Chinese lilies, freesia, Spanish iris, calla lilies, amaryllis, anemones, crocus and ranunculus.

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Dips for Dried Prunes

Can you tell me what strength or percentage of glycerine solution or indigo solution is used on dried prunes to darken the color—Subscriber, Encinitas.

As a rule prunes are simply dipped in boiling water or a bath of five pounds salt to every 100 gallons of water. Where glycerine is preferred to give additional gloss it is added to the hot water at the rate of one pound to 20 gallons. The principal idea with the hot dip for the cured prune is to kill any insect eggs which may be infesting the fruit. Some add a few pounds of sugar or syrup to the hot water, but this is too expensive. Very satisfactory glossing may be secured by cooking to a pulp a few pounds of cull prunes and adding this to the hot water, making a sort of ripe prune juice. We have never heard of the indigo dip.

Alkali

What is the difference between soda and black alkali? Which is more injurious to alfalfa and is there any remedy?—Subscriber, Los Banos.

Our most injurious alkalies are different forms of sodium. Sometimes it is common salt, or chloride of sodium, sometimes it is white alkali or sulphate of sodium or common Glauber's salt, and again it is black alkali, or carbonate of sodium or common sal soda. The latter is the more injurious, and it is often changed to white alkali and reduced by leaching through very heavy irrigation.

Making a Lawn

Last April I planted a lawn and now I wish some information. How often should it be mowed the first summer? Should the clippings be left on the lawn? What is the best fertilizer to use on it What is the value of cottonseed meal as a lawn fertilizer and also as a fertilizer for fruit trees? Is there any way besides fencing of keeping rabbits from eating my lawn? I cannot catch them in steel traps.—Subscriber, Claremont.

Yes, in order to secure fine lawn the mowing should begin as soon as it is of sufficient height. The clipping should not be as close as on an older lawn. The best fertilizer is thoroughly rotted manure. Be sure that its decay is complete for a vast quantity of weed seed is carried to the soil by the use of fresh stable manure. Cottonseed meal is all right, but one thing in favor of the rotted manure is that it carries a measure of decayed vegetable matter which is of mechanical as well as chemical value to the soil. Dried blood, bone meal and complete commercial fertilizers are all good. The best way to keep out rabbits is to build a fence.

Congressman

I would like to have the 1920 Year Book. Will you please tell me the name of the congressman representing this district?—Subscriber, Woodlake.

H. E. Barbour of Fresno represents the 7th district, which includes Tulare County. Denver S. Church was the representative for the three preceding terms.

Grapes Decaying

I am sending you specimen of Thompson Seedless grapes. They are rotting very badly, some worse than these sent.—Subscriber, Anaheim.

This was referred to Fred K. Howard, who answers: "The grapes referred to were in such poor condition that I could tell absolutely nothing about the cause of the trouble. The only possible impression I could get from the letter and from the specimen is that probably ordinary mildew was the original cause of their going bad."

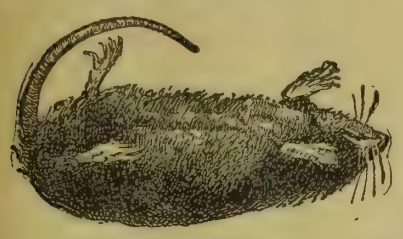
Scale on Orange Trees

I would like to know about scale on orange trees. How do they travel from one tree to another and do they travel all the year round or just during hatching period? In regard to a badly infested orchard one man told me I could not keep my place clean if I spray every month unless my neighbors clean up.—Subscriber, Exeter.

Our inquirer does not mention the kind of scale, but from his location we take it he refers to gray citrus scale, Coccus citricola. These insects reach maturity in April and May, when egg laying begins. It is sometimes well into July before all hatching is completed. Of course at that time the young are locating on the leaves and tender growth and are easily killed, hence control by fumigation or spraying is generally carried on during months of July and August. In the fall when all are hatched many become more or less resistant and the

WIPE OUT EVERY RAT AND GOPHER

Don't be satisfied with trapping or poisoning just a few. Exterminate the whole bunch — old, young, big and little. A single pair left, in a short time, will produce enough to overrun the place. That's why we say KILL THEM ALL.



Rats do millions of dollars' damage each year. They kill chickens, destroy grain, damage buildings and property. They are filthy, dangerous, destructive, disease carriers. Wipe them out—not just one or two at a time—but the entire colony.

Easy to Get Every One

A new scientific discovery, called Imperial Virus, now enables you to rid your place of every rat, mouse and gopher easily, quickly, entirely, without trouble, muss or danger. It is absolutely guaranteed to clean out every one of them.

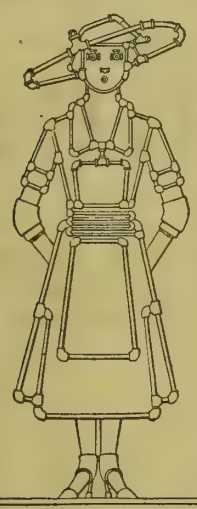
Not a Poison

Imperial Virus is absolutely harmless to humans, domestic animals, poultry, etc., but is sure death to rodents, and rodents only. Fed to them on bread, grain, etc., it gives them a fatal disease, which they give to others and are all wiped out. Best of all, they die outside, hunting water and air.

You can spread this Virus in your chicken house, around gopher mounds, anywhere, knowing it cannot possibly harm any fowl, dog, cat or other domestic animal.

Get Yours Free

The manufacturers of this amazing Virus are anxious to get immediate distribution everywhere and make this big offer. (Act now or clip this offer for future reference, as it may not appear again.) Send $1.00 (bill, money order, check, etc.) to the Imperial Laboratories, Room 157, 2110 Grand Ave., Kansas City, Mo., and you will receive two regular full sized (double strength) $1.00 packages, postpaid. Use one bottle to rid your own place of these pests. When you see how easy it is, tell a neighbor about it and sell him the extra package, making your own cost you nothing. You will be told also how you can make money by telling your friends about it. You need send no money. If you prefer, simply pay the postman $1.00 and postage when you get the two packages. If you are not satisfied after thirty days your money will be refunded.



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The Golden Fruit for a GOLDEN STATE.

My stock of plants consists of the very finest plants to be had, and varieties the very best.
I have for several years supplied some of the large growers of California with such varieties as Nick Ohmer, Marshall, Klondyke, Kellogg's Premier, etc. Ask for my free catalogue describing these berries and about 30 other varieties.

V. R. ALLEN

SEAFORD, DELAWARE

Stock for Peach Trees

Would seedlings from Elberta and Crawford peaches make favorable stock for budding Hale peaches?—Subscriber, El Cajon.

The best stock for the peach is usually considered to be from seed secured from a seedling tree. However, in practice it is quite common to secure pits of budded or grafted trees from the dry yard or cannery dump. Some maintain that there is actually no difference in the stocks secured. As to Elberta or Crawford many prefer that type of fruit, and some insist that the seed shall be secured from "strong growing yellow peach trees." However, if the trees are to be planted on a heavy soil the Myrobolan plum is preferred.

Loans to Returned Soldiers

Regarding loan to returned soldiers concerning which the Cultivator has had many inquiries: The last California state legislature of 1921 passed an act providing that there shall be submitted to the voters at the general election in 1922 the proposition to bond the state of California for $10,000,000 to be used for the benefit of the returned service men. There was also a direct appropriation made by the act providing for $2,000,000 emergency fund to care for those in most immediate need until the $10,000,000 becomes available. The funds to be used: 1. For educational purposes, this to all California service men and not for disabled only. 2. Colonization, securing and colonizing lands not now cultivated. 3. Providing loans for farms or homes for service men, these loans to be amortized over a period of 40 years at a rate of four per cent interest. The limit of this loan is $7,000 on a farm with, we believe, $2,000 additional for equipment. The amount on a home for the service man not to exceed $5,000. The applicants for these loans must have at least five per cent in cash of the amount applied for. 4. Bond issue for $10,000,000 to be decided by electors. 5. The enforcement of this act shall be in the hands of a veteran welfare board. This board has already been appointed and we believe is holding meetings in Sacramento at this time. The chairman of the board is Frank H. Nichols, Los Angeles.

Feed for Young Rabbits

What is a good feed for young rabbits after they are weaned? What is the best age to wean rabbits and what should be fed to the mother? How old should the doe of the Gray Flemish Giant be before being bred and how old should the buck be before using him for breeding?—Subscriber, Anaheim.

The feeding of young rabbits begins soon after the doe is bred. Proper feeding of the doe from this time to when the young begin to run about (say at ten days old) will prevent many troubles after weaning. A young rabbit is only a baby and the mother's nurse is a very important factor in its development. One must feed that which is adapted for this purpose. One formula is: Equal parts by weight of ground oats, rolled or flaked oats, calf meal and bran kept before them at all times. Some feed flaked oats alone, some bread dipped in milk and made mealy dry with bran. Any of these, with the rolled barley and good alfalfa hay, should produce good results. Young of proper size and condition should be weaned at six weeks. If litter is large, leave one or two of the smaller ones a few days longer to dry up the doe. Flemish does should not be bred until 10 or 11 months of age, neither should bucks be used before that age. A full reading of a good rabbit book on all these subjects will be of much profit.

Member Bud Selection Association of California

The Best Place to Buy Good Fruit Trees at the Right Prices!

You can't raise big crops of good fruit from poor trees. The BEST trees you can buy always prove the cheapest. The stock we furnish is not only clean and thrifty, and strongly rooted, but budded from trees of known productivity. They bear crops that pay! Many of the heaviest-bearing and most profitable orchards in the state are proof of the quality-trees propagated in our nurseries. Ask us to point them out, we'll be glad to do it. ALSO—SIGN AND SEND THE COUPON FOR OUR NEW PRICE LIST. We grow all home and commercial varieties of fruit trees, including berries, small fruits, etc.

Elmer Bros.' Nursery

The Nursery that helped to make Santa Clara Valley Famous

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BUY NO PEAR TREES

until you consider the money-value of a pear orchard on Usuriensis root-stocks (The Chinese seedling)

The HIGHEST AUTHORITY (Prof. F. C. Reimer of Oregon) declares this root-stock to be the most BLIGHT-RESISTANT known, many individual seedlings proving 100 per cent blight-immune under scientific testing.

Not only does this root endure drouth well, but last winter it was submerged by over-flow for ten weeks in Howard Reed's orchard WITHOUT INJURY. It appears to be as resistant to oak root fungus as other pear stock, and as little attacked by pear aphis as the Jap root. Bartletts worked on it make a perfect union, and grow as vigorously as it is possible for pear trees to grow.

After observing this species critically for five years, we consider it the

Best Pear Root-Stock in Existence

For the first time, we can this season furnish a few thousand branch-budded Bartletts, with roots, trunk, and main-limb crotches of this species. Price, $125 per hundred. Also Bartletts budded in the usual manner but on Usuriensis roots. Price, $45.00 per hundred. Superb trees.
Usuriensis seedlings, unusually fine, 5 to 7 feet, for immediate orchard planting, to be later top-worked, $35.00 per hundred. The finest young pear orchard in the world—that of Howard Reed Orchard Company, Marysville—has planted 214 acres of our seedlings and will begin top-working this winter.

Our stock is smaller than usual and early orders are advised. We have discontinued the growing of all nursery stock other than pear trees.

LOMA RICA NURSERY

Pear Specialists

A. L. Wisker, Manager **Grass Valley, California**

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FRUIT TREES

Our trees are grown under most favorable conditions in the choicest spots in California.

Let us know your requirements early.

Fresno Nursery Co.

Fresno, California

The Cultivator Patterns

3716. Ladies' Dress.—Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size requires 6⅝ yards of 32 inch material. Without panels 4¼ yards. The width of the skirt at the foot is 2 yards. Price 10 cents.

3121. Child's Dress with Bloomers.—Cut in 4 sizes: 4, 6, 8, and 10 years. Size 8 will require 3¼ yards of 36 inch material for the dress, and 1¼ yard for the bloomers. Price 10c.

3717. Misses' Dress.—Cut in 4 Sizes: 14, 16, 18 and 20 years. A 20 year size requires 5⅛ yards of 36 inch material. The width of the skirt at the foot is 2 yards. Price 10 cents.

3723. Girl's Dress.—Cut in 4 Sizes: 4, 6, 8 and 10 years. An 8 year size requires 3¾ yards of 27 inch material. Price 10 cents.

3718. Ladies' House or Day Dress.—Cut in 7 Sizes: 36, 38, 40, 42, 44, 46 and 48 inches bust measure. A 38 inch size requires 6 yards of 36 inch material. If made as illustrated it will require 4⅜ yards of plaid and 1⅝ yards of plain material 36 inches wide. The width of the skirt at the foot is about 2¼ yards. Price 10 cents.

3721. Girl's Dress.—Cut in 4 Sizes: 8, 10, 12 and 14 years. A 12 year size will require 3¾ yards of 38 inch material. The underwaist of contrasting material will require ⅝ yard 38 inches wide. Price 10 cents.

3719. Ladies' Apron.—Cut in 4 Sizes: Small, 34-36; Medium, 38-40; Large, 42-44; Extra Large, 46-48 inches bust measure. A Medium size requires 5¼ yards of 27 inch material. Price 10c.

3743. Child's Coat and Cap.—Cut in 4 Sizes: 6 months, 1 year, 2 and 4 years. A 2 year size will require 2½ yards of 27 inch material for the coat and ¾ yard for the cap. Price 10c.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH

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Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cents) stamps for each number. In order to furnish our readers with the very best **NEW YORK** styles, all patterns ordered are filled in **NEW YORK**. Therefore, we promise to deliver all patterns ordered within **TWO WEEKS**; we guarantee safe delivery of all patterns.

CATALOGUE NOTICE

Send 15c in silver or stamps for our Up To Date Fall and Winter 1921 Catalogue, containing over 500 designs of Ladies', Misses' and Children's Patterns, a concise and comprehensive article on dressmaking, also some points for the needle (illustrating 30 of the various simple stitches) all valuable to the home dressmaker.

PATTERN DEPARTMENT

California Cultivator **Los Angeles**

Household Department

MAMMY'S CROON

When de dark has come a-creepin'
And de mournful owl am weepin',
And de honeysuckles wait fo' evenin' dew,
Down my cheeks de tears am rainin'
On de road my eyes am strainin'—
I'se a-honin', honin,' Honey-chile fo' you.

Time to come. De co'n-bread's bakin',
And yo' cream-cake I'se a-makin'—
Oh, my Honey, how they feed you wha' you stay?
To de flowers de dew am comin',
To his mate de owl went strummin',
But my Honey-chile's so fa', so fa' away.

But, my Hon. you suah am comin';
Jest as suah as bees go hummin';
You am comin' wha' my moughty lovin' am.
Wha' de mocking bird am singing,
Wha' de honeysuckle's swinging,
You am comin', comin' Home, my Honey-Lamb.

—Annette Davisson Squire.

AN HOUR AT SAN FERNANDO VALLEY FAIR

By Ruth P. Dougherty

THE hour was so short and the fair so big that you might say it was only an aggravation, that quick look-over. But it wasn't; it was an inspiration. The ride from the southern end of the valley to San Fernando town was an exposition in itself, preparing the visitor for the close-ups under the tents. Thrifty young orchards, up-to-date poultry farms, rose bordered highways, prosperous looking modern homes along the way, then great stacks of alfalfa and groups of silos marking pure bred dairy and stock farms, with the circle of purple hills enclosing an empire—an empire of homes.

With the big tents only a mile away, the Old Mission tempted a brief stop, and a snapshot shows beside the crumbling walls to the north a high power tower—graphic story of the change from the old days of the Franciscans, the Indians and the scattered brown ranches to the today of green fields and orchards, electric lighted highways and prosperous communities brought into being by the great aqueduct whose course those towers follow.

On the Grounds

It was sunset as we reached the gate, but the visitors were still coming. The livestock were being fed and as we walked through the aisles between the horse stalls, lovely sleek heads looked out with as friendly a gaze as though they had not seen our like passing by all day. The cattle had no time to talk, they were busy with supper and the milking, but the goats looked us over like frisky puppies, straws dangling from busy jaws, with more than half an invitation to come play. Most of the swine were fed and snoring, but some of the Hampshires were talking to their boss as he went from pen to pen to rub and pet them and see if all were comfy after the warm day. Maybe pigs is just pigs, but those pigs talked like humans. The rabbits were beauties and the poultry tent full of fine feathers and brisk comment from the birds attending. It would take an indigo grouch to keep its color through that bunch of cheery chatter.

Just a peep at the big tractor and implement tent, for we must see the horticultural exhibit at the other end of the big grounds—and they were magnificently big, in keeping with the big outdoors. The exhibits were described in last week's Cultivator, but of special interest to our household readers were the variety exhibits from individual farms, the best of orchard and garden products fresh and canned for later use. These exhibits were arranged by artists' hands, apparently, for the grouping and coloring filled the eye and it was hard to pass on to the next and the next. Especially effective was the use of the sorghums and gold and vermilon splashed pumpkins and striped crooknecks.

One end of the horticultural tent was given to such a display of flowers and of needlework as would hold any home maker for hours. Wonderful old blue and white counterpanes were there—one 300 years old—ancestral treasures worth more than their weight in gold, and exquisitely pieced quilts and knitted and crocheted counterpanes which made you want to stop and ask the story of each—and what stories they could tell, those old bits of needlework, of the hopes and joys and changing fortunes from their first homes on the Atlantic to our California! Then there was up-to-the-minute needlework in plenty, beautiful things, so many that we despaired of seeing even a small fraction. An adjoining tent was hung with pictures, many paintings typical of California, the purple hills, the sycamores, the eucalyptus; some rare old treasures from the days of Spanish occupation; in all a showing one would wish to stop and study.

As we hurried out to catch our interurban car we heard women's voices, a trained chorus, one more of the community activities of this busy valley.

While we waited for the car a bootblack restored the shine to our dusty boots and to him we volunteered, "Fine show you have here." "Sure," he agreed, "but you ain't going now? Why, the horse show is the best we've got." And it looked as if others thought so, too, for as our train passed the fair gates the crowd was coming a-foot and in autos, the entire family strong.

JERKY RECIPES

Mrs. H. C. Rudolph, Esparto

In answer to the inquiry for way of using jerky, I am sending two.

Soak jerky over night, drain off water and with a sharp knife remove any fat parts or "strings," then grind with the coarse or medium grinder. Make a rich milk gravy and add the ground jerky. Cook slowly a few minutes. Serve with mashed potatoes or on toast.

For stew soak overnight, remove fat parts and simmer slowly until tender. Add vegetables. When done, thicken the juice with flour.

E. S. F., Madera County

In September issue of your magazine I note an inquiry for ways to use jerky. This is the dried flesh of deer or steer, i. e., it may be venison or beef, and is a very satisfactory method of presrving meat, especially in places where dry heat is the order during part at least of the year. Our children all enjoyed it best, I think, when they could nibble and chew it between meals (if they could get it); or, if going away from home some distance and uncertain of hour of return, to put a handful in a pocket to stay the pangs of hunger when needed. This, of course, refers to the home product which we knew to be clean and sterilized, indeed partially cooked or scalded before drying.

Jerky Stew—Soak amount needed overnight in water to cover, first breaking the brittle jerky into small pieces. In morning put on in same water to heat, adding potatoes cut in slices, carrots if liked and generous amount of sliced onion. Cover and simmer till tender, adding piece of chili pepper, salt if needed and cooked or raw tomatoes 20 minutes before serving time. Thicken to taste with flour and butter rubbed to a paste. As with all stews, different vegetables may be added if liked. If the jerky has been cut from young beef the time for cooking will be short. Also, if jerky is not too dry from long keeping a few hours' soaking will be enough. It is nearly time for us to be "jerking" our fall supply.

"Aida," Prescott, Arizona

I am sending the only recipe for jerky I have ever had. We find it fine, so hope your readers will like it.

For one meal take 15 cents worth dried jerky. Put through meat grinder. Have lard heating in frying pan. Put in jerky, keep stirring, brown nicely with two teaspoons flour, then add 1 half pint hot water and the same of milk. This will thicken nicely. Add butter and pepper. Use canned milk if fresh is not available.

A plate scraper of rubber or wood makes dishwashing easier, and keeps the water from becoming greasy.

There is something in being original

Ever since the early 70's Ghirardelli's Ground Chocolate has been acknowledged the *original* ground chocolate—the chocolate of proved purity, the chocolate of certainty. As a food-beverage Ghirardelli's stands alone—in taste, in flavor, in everyday economy. Say "*Gear-ar-delly*" to your grocer and accept no other ☕ Made by D. Ghirardelli Co., San Francisco—since 1852.

HOUSEHOLD QUERIES

Candied Figs

Have been interested in your recipe for candied figs on page 294 of the issue of September 17, but you say the skins must be slit and then that they must not be boiled hard enough to break the skins. Must the skins only be slit once—and that from top to bottom or around the fig and will these if boxed keep to send east at Christmas time?—Subscriber, Escondido.

With a sharp knife cut 3 or 4 tiny slits not more than a half inch long the up and down way of the fig, cutting only through the thin outer skin, not allowing the blade to go through the soft flesh at all or flesh and seed will boil out in syrup. This is merely to let the salt penetrate under skin to take out the strong taste. Mrs. Stone, who gave us this recipe, says that she uses firm, not too ripe, figs that have had little irrigation and are very sweet. Where one uses watery figs, practically no water is needed to make syrup. These adaptations one soon learns on trial. A soft, ripe fig would be difficult to handle and keep whole. Such figs would not need the soaking in salt water. Mrs. Stone packs her figs down in crocks just as they are, sprinkling a little more sugar over them. Tie on paper cover and store in clean, airy place (away from the ants) and they will keep perfectly for Christmas boxes.

Mexican Tamales

Please tell in the household department how to make Mexican tamales with chile peppers, etc.—Subscriber, Crescent City.

Here are two from the "Times Cook Book":

Have a chicken cooked tender in boiling water to cover; remove meat and chop fine; return bones to broth. From fresh corn husks, select a wide leaf of husk for each tamale, or use dry husks steamed until pliable. Remove and discard seeds from a dozen red chile peppers and chop pods very fine; peel 6 large tomatoes and squeeze seeds from them. Mix tomatoes and peppers and let simmer 20 minutes or until well reduced. Stir enough hot chicken liquor into 3 cups corn meal to thoroughly moisten it, then let stand half hour. When everything is ready, mix tomato and pepper with chicken, adding teaspoon or more of salt as needed to season. Salt should also be added to corn meal if broth in which it was mixed had not been seasoned. Put layer corn meal into corn husk and on this put two tablespoons chicken and tomato mixture. Let chicken come nearly to ends of corn meal, and corn meal well up to ends of husks. Keeping husk between fingers and meal, fold meal over chicken, from each side, to inclose chicken completely; roll husks over the whole, turn up ends and tie securely, using narrow strips torn from husks for the purpose. Put tamales on top of bones in chicken broth, taking care that bones keep them well out of broth. Cover closely and let simmer one hour. Serve hot.

Another.—Take piece of lean beef, veal or chicken, about 1½ pounds, and ¾ pound fresh pork, and put on fire with sufficient water to cover, add bay leaf, a little salt, cinnamon and piece of garlic. Let all simmer and when meat has consumed all of water and is tender enough to shred, remove from fire and add about 2 dozen almonds, blanched and halved, and 2 dozen large raisins. Fry all of this, add sufficient water to make consistency of hash, and season with 1½ tablespoons chile powder. Set this aside while making dough part. For the dough add 2 pounds corn meal, some salt and 1 large spoon lard. Scald meal and make into soft dough that can be handled. Put some corn husks on to boil until soft. Remove from water, dry, rub with brush dipped in lard and put a layer of dough on each husk, leaving about 1 inch at each end to fold. In middle of this spread meat mixture and roll up, and fold over each end. Steam for 2½ hours and serve very hot. If meat part be prepared a day before tamales are to be served they will be much riper and finer.

Many cooks for steaming put a few shucks in the bottom of a pot to prevent scorching and pack in the tamales, placing a weight on top. Cover with boiling water, adding one tablespoon each of lard and chile powder.

HINTS FROM HOUSEKEEPERS

Crabapple Jelly—Brown Overalls

I enjoy the household pages of your paper and get many good suggestions from them. Was about to inquire if any reader could tell me how to remove lime from a teakettle when I picked up the copy containing the very thing by using the eucalyptus leaves. Haven't tried it out yet, but hope to do so soon.

When making crabapple jelly, drain off the juice after cooking, cover with water and cook again, pour off juice again and cook the third time if you like, as the juice is not all extracted with two boilings, though I usually have all I want with two. Even when the fruit is plentiful it is an economy if one's time and strength are considered.

Can anyone tell me how to set the color in brown cotton goods? Sometime, somewhere, I read of using copperas but don't remember how it was used. I find the brown canvas overalls so much more serviceable than any others for little boys, though they fade even with the best of care and salt doesn't set the color, so hope someone can tell me of something.—Subscriber, Rumsey.

We know some mothers who keep on hand a stock of common dyes of the colors easily washed out. A little of the powder is dissolved in boiling water, this thinned with as warm water as the hand can bear (add only enough water so colored liquid will cover garment) and the faded garment dipped as in bluing water, then hung, wrong side out, in shady place to dry. Does anyone of our Cultivator readers know of a better way of keeping the brown color?

Preserved Figs

Peel figs, measure, and to each quart add one cup sugar or one-third as much sugar as figs. Let stand one hour, then cook until about half done. Add one lemon sliced, cutting off ends first. Boil down thick, then can like any fruit. Do not use any water. This is fine for filling for cake or cookies. —Mrs. Viola Fitzsimmons, Lodi.

Fig Conserve

2 quarts peeled figs, 2 cups seeded (or seedless) raisins, 2 cups walnut meats (broken but not chopped), 1 quart sugar, citric acid equal to about 10 peas in size, or the juice of three juicy lemons, pinch of salt. Cook figs, raisins and nuts and citric acid (dissolved in a little hot water) for one hour. Then add sugar and a pinch of salt. Cook for 15 minutes more, stirring constantly.—Rachel D. Roest, Burbank.

Pickles

1 dozen medium sized cucumbers, 6 medium sized white onions, 1 pint strong vinegar, 1 cup sugar, 1 teaspoon mustard seed, 1 tablespoon mixed pickling spices. Slice cucumbers and let stand in salt water one hour. Have vinegar and sugar and spices (tied in cloth) hot. Drain cucumbers. Add them and onions sliced, and boil 15 or 20 minutes. Seal in jars or bottles. —Rachel D. Roest.

CONVERSATION

"Jim," she said, as he settled down for a comfortable smoke, "I've got a lot of things I want to talk to you about."

"Good," said her husband. "I'm glad to hear it. Usually you want to talk to me about a lot of things you haven't got."—Cincinnati Enquirer.

Children do not always know what's best for them, but then, neither does anybody else.

KODAK An authentic, complete photographic record of livestock, farm equipment, crops—that's business.

Pictures like the one reproduced above—and every home abounds in such opportunities—that's pleasure.

Kodak does double duty on the farm.

Ask your dealer or write us for free catalogue of Kodaks and Brownies.

Eastman Kodak Company, Rochester, N. Y., The Kodak City

A King Segis Pontiac Offering

102 REGISTERED HOLSTEINS 102

SYCAMORE ACRES, Owned by Robt. N. Clapp, Nuevo, Cal.

SELLING AT

Rhoades & Rhoades Sales Pavilion, Hynes, Cal.

Friday, October 21, at 9:30 a.m.

This is without question the greatest offering of the blood of King Segis Pontiac ever made in the west, including high record cows and daughters of such cows, and a wonderful lot of individuals.

20 DAUGHTERS OF KING SEGIS PONTIAC
All young, many out of high record dams of most attractive breeding, and including a number of high class show quality.

31 DAUGHTERS OF PEARL KING SEGIS PONTIAC
Who is by King Segis Pontiac and out of a 37.51 lb. daughter of Pontiac Korndyke that milked 753.9 lbs. in 7 days, second dam a 727.03 lb. yearly record 4 year old daughter of Pearl of the Dairy's Joe De Kol.

13 DAUGHTERS OF KING PONTIAC NETHERLAND SEGIS 3D
The famous young sire formerly at the head of the Rosamaines Rancho herd. He is sired by a grandson of King Segis Pontiac and out of the twice 34 lb. cow Gerben Abbekerk Maid. His daughters in this sale are a wonderful group of young females, with records up to over 30 lbs. butter in 7 days for a 4 year old.

3 DAUGHTERS OF KING SEGIS PONTIAC CHICAGO
Who sold for the then world's record price of $20,000.00 when a calf. He is by King Segis Pontiac and out of the 40 lb. cow Johanna De Kol Van Beers.

7 DAUGHTERS OF PAUL CALAMO KORNDYKE
The great show bull that has many Grand Championships to his credit in the best shows. His daughters in this sale include the famous National Dairy Show winner Nancy Calamo Korndyke.

FOUR 30 TO 34 POUND COWS
Including the great twice 34 lb. cow Gerben Abbekerk Maid, now making a splendid strictly official yearly record in her tenth year.

If you are looking for young cattle with splendid type and rich King Segis breeding, you will find in this offering one of the choicest lots ever sold in California.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OLD TUBERCULIN TESTED BY DR. HURT, L. A. COUNTY VETERINARIAN, AND SOLD SUBJECT TO 60 DAY RETEST.

TERMS OF SALE: Responsible parties may arrange for credit with the sale managers on the basis of one-third cash, balance in three, six and nine months, with approved notes bearing eight per cent interest. Credit arrangements must be made before sale.

Catalog free on request.

Auctioneers:
RHOADES & RHOADES
Los Angeles

Managed by
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

80 Splendid Herefords
AT PUBLIC AUCTION

Beau Blanchard 76th

Harris Standard 2nd

NEVADA HEREFORD RANCH

J. H. Cazier & Sons Co., Wells, Nevada

will make a most attractive offering from their great herd of registered Herefords, affording a remarkable opportunity for selection of real foundation animals, selling at

State Fair Grounds, Sacramento, Cal.
Tuesday, November 1

The offering will include daughters of Beau Blanchard 76th out of Harris Standard 2nd dams; daughters of Harris Standard 2nd bred to Beau Blanchard 76th; and a desirable lot of cows with calves at foot by these great sires.

SEVERAL HIGH CLASS YOUNG BULLS will appear in the sale list, real herd headers.

This combination of breeding provided the sensation in the largest showing of registered Herefords ever made in California, at the last State Fair, winning consistently over animals that had won in some of the best middle west shows, and demonstrating conclusively that this herd is producing a class of cattle qualified to hold their own in any company.

THIS IS A FEDERAL ACCREDITED HERD

TERMS OF SALE: Arrangements may be made with the sale managers, by responsible parties, for payment of one-half cash, balance in six months, with approved notes bearing eight per cent interest.

Catalog of sale free on request.

HULL, Auctioneer
BUNTING, in the Ring

Managed by
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

The Proof
OF THE PUDDING
King Segis Pontiac Jannek
Grand Champion Holstein Friesian Bull

At San Fernando in one of the Strongest Holstein Shows in the West

KING SEGIS PONTIAC JANNEK 161758

At the 1920 Livestock Show at L. A. the ability of King Segis Pontiac Jannek to sire correct type was proved by the remarkable winnings of his offspring, his two year old daughter K. S. P. J. Pet Segis being Grand Champion cow. Now, in 1921, in his initial appearance in a show ring Jannek is declared Grand Champion.

A Grand Champion Cow by a Grand Champion Bull

K. S. P. J. Pet Segis also broke the state milk record for 1, 7 and 30 days, proving that Jannek is the sire of production along with type.

Buy One of His Sons

Santa Monica Dairy Co. **Venice, Cal.**

Our First Exhibition of Holsteins in California
Was Highly Pleasing to Us

In the big fair at San Fernando we showed a herd almost entirely of our own breeding and won:

Junior Champion Bull.	Junior Champion cow.
Reserve Grand Champion Bull.	Reserve Grand Champion cow.
2, Senior Yearling Bull.	Reserve Senior Champion cow.
1, 2 senior bull calves.	1, 2, 2-year-old cow.
2, Junior bull calf.	1, senior yearling.
1, 2, young herd.	4, aged cow.
1, calf herd.	3, 4, get of sire.
2, 3, three best cows in milk	1, produce of dam.

1, cow with association record (all breeds).
1, aged cow in three days' butter fat contest.
1, 2-year-old in three days' butter fat contest.
All breeds competing on the grounds.

We Believe We Breed the Right Kind

Come and see us at Ventura and Riverside or call at the ranch on Ventura Boulevard near Universal City. We will welcome you.

MAXWELL FARMS

Hollywood, Cal.

MR. FARMER:—

You are contemplating the purchase of a service bull next year. Why not save 50 per cent of the purchase price by buying a registered Holstein bull calf now. Pay for him next year when he is ready for service.

Sons of SIR VEEMAN KORNDYKE PONTIAC, who has 27 A. R. O. daughters, and of BURR WALKER SADIE VALE, whose seven nearest dams average 29 lbs. of butter in 7 days, included in this offer. Call or write at once.

BURR FARM 26th and Downey Road, Los Angeles
RFD 2 Box 120

LOS ANGELES COUNTY FAIR

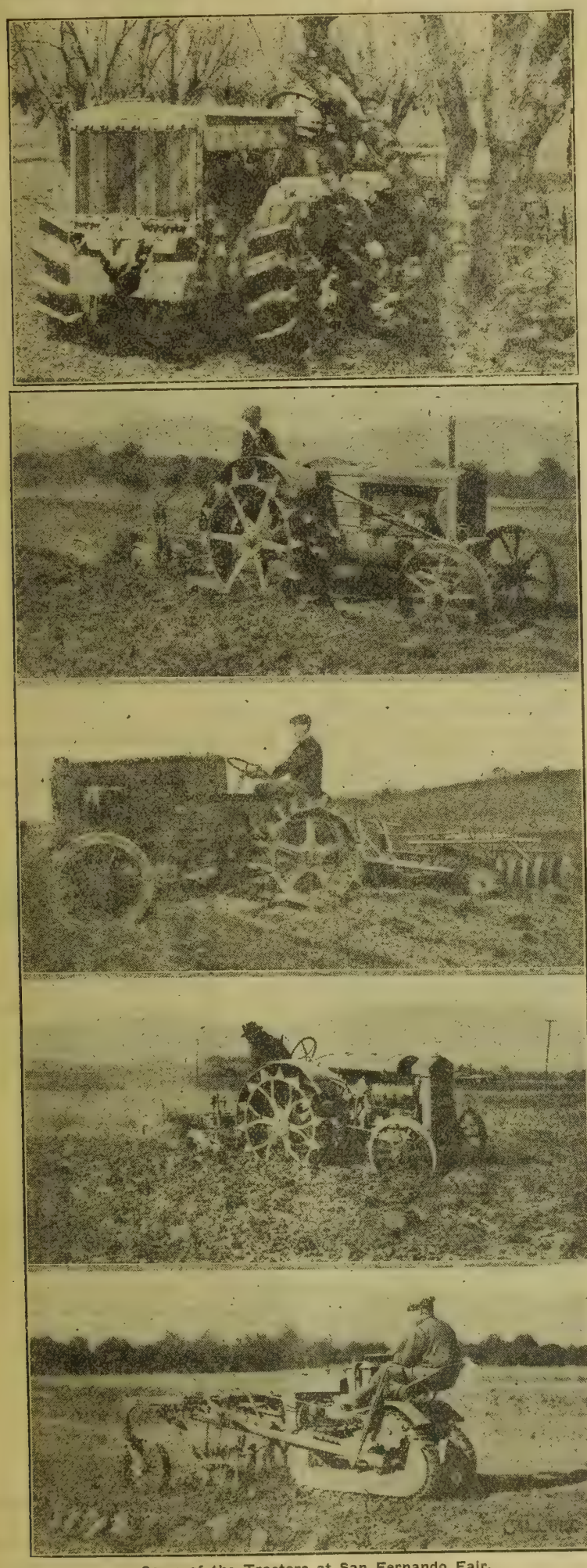
(Continued from Page 343.)

Ledgard, who showed the Maxwell cows into great prominence when their home was at Waterloo, Iowa. The Clapp bull is developing a little more rapidly than his competitor and was given first.

The senior calf class yielded the junior and reserve grand champion in Tritomia Ormsby Pietertje Fayne, owned by the Maxwell Farms.

Twelve grand cows made up the aged class and the first place wavered back and forth between Parthenia Paul Segis 2nd, shown by Earl Sturgis for the Hartsook Ranch, and Segis Walker Gelsche, the grand show cow owned by Clapp. The Hartsook cow was in great bloom and had been fresh recently while the old white cow was dry and heavy with calf who was born later on the show grounds. The Hartsook cow was much better in the head and shoulders, but the Clapp cow has a most wonderful mammary system.

(Continued on Page 358.)



Some of the Tractors at San Fernando Fair.

Upper, Wizard 4-pull, making short turn around tree. This machine can be turned in its own length.

Second from top, Wallis, equipped with Wallis motor, 25-15. Frame is U-shaped Wallis patented boiler plate. Will turn in ten feet.

Third from top, Tioga, 27-15. Tioga patented transmission, positive traction "lays its own track."

Fourth from top, Samson. Its name indicates its strength and it is declared to deliver the goods. "Our success depends upon making the business farmer an equal partner."

The illustration at the bottom is of the first Cletrac Model F. There is no danger of the man on the seat breaking it down though it does appear very small. It is an 1800 pounder. This new model is adjustiable as to height and as to width, is declared to work exceptionally well in cotton, corn, beets and other row crops.

Credit for the Buyer of Registered Cattle

Early this year we announced that we were prepared to handle the credit in public sales of registered cattle managed by us.

During the first six months we handled the entire credit on 10 public sales under our management, and as we are handling the credit in practically all sales managed by us this fall we make this announcement to more fully inform prospective buyers of the plan, which is this:

When a breeder arranges with us to sell his cattle, he may also arrange with us to handle all notes received in settlement, and at the conclusion of his sale we pay him in full for his cattle, deducting only the sale commission and note discount.

In sales of registered dairy cattle we will extend credit on the basis of one-third cash, balance in three equal payments in three, six, and nine months, with notes bearing eight per cent interest.

In sales of registered beef cattle we will extend credit on the basis of one-half cash, balance in six months, with approved notes bearing eight per cent interest.

Arrangements for credit must be made with us before the sale in which such credit is wanted, and we particularly invite applications from those who want to buy small foundation herds.

Bear in mind that in putting this plan in operation we have assumed very large financial responsibilities, and must therefore confine our accommodation to those who are able to show ability to meet their obligations promptly, but we will give just as careful consideration to the man who wants to buy one animal as to the man who wants to buy fifty.

Applications for credit may be made to us by mail, giving us such information as will enable us to pass on the matter intelligently—AND ALWAYS STATING WHETHER OR NOT YOU PRODUCE YOUR OWN FEED—or you may see the sale manager personally the morning of any sale, presenting, if you are an entire stranger, such references as will enable him to pass quickly upon your application.

On the terms outlined above we are handling the credit for the following sales under our management:

HOLSTEINS: Oct. 4, S. O. Walker, Visalia; Oct. 5, Robt. T. Curtis & Son, Tulare; Oct. 6, Alex Whaley, Tulare; Oct. 12, John Saxer, Modesto; Oct. 21, Robt. N. Clapp, Hynes; Oct. 29, F. H. Shanks & Sons, Susanville; Nov. 3, A. W. Morris & Sons Corp., Woodland.

GUERNSEYS: Oct. 20, W. H. Dupee, Santee, selling at Hynes.

HEREFORDS: Nov. 1, J. H. Cazier & Sons Co., Wells, Nev., selling at State Fair Grounds, Sacramento; Oct. 26, part and possibly all of the consignors selling at San Francisco in the Pacific Coast Hereford Cattle Breeders Association sale.

If you have feed and the ability to handle registered cattle do not hesitate to ask for credit. This service was established to aid the breeder, particularly the beginner.

California Breeders Sales and Pedigree Co.

J. M. Henderson, Pres. C. L. Hughes, Sales Manager

211-212 Ochsner Bldg., Sacramento, Cal.

EDGEMOOR FARM

Owned by W. H. Dupee

SANTEE, CAL.

WILL OFFER

51 REGISTERED GUERNSEYS 51

AT PUBLIC AUCTION

Rhoades & Rhoades Sale Pavilion

Hynes, California

Thursday, October 20, at 10 A.M.

THE FEMALES:

There will be 41 females in the sale, all heifers, and practically all are bred. A large number are bred to MASTERPIECE OF EDGEMOOR, one of the greatest young sires of the Guernsey breed, also some to the undefeated show bull DEANIE'S MAROSE OF APPLETREE POINT.

The offering includes granddaughters of Governor of the Chene, Spottswood Daisy Pearl, Rose of Lanwater and a considerable group sired by a double grandson of Governor of the Chene.

These choice heifers should meet with the approval of the many prospective buyers who wish a foundation of young registered Guernsey females of substantial breeding and bred to bulls of unusual merit.

THE BULLS:

The ten bulls in the sale list include a number ready for service, of desirable type and approved breeding, and should find favor with both breeders and dairymen.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OLD TUBERCULIN TESTED AND SOLD SUBJECT TO 60 DAY RETEST.

TERMS OF SALE: Cash unless arrangements for credit are made prior to sale with the sale managers, California Breeders Sales and Pedigree Co., who will extend terms of one-third cash, balance in three equal payments in 3, 6 and 9 months, to responsible parties, with approved note bearing eight per cent interest.

CATALOG OF SALE FREE ON REQUEST

PLACE OF SALE: Rhoades & Rhoades Sale Pavilion is at Hynes, south Los Angeles on Downey and Long Beach Boulevard.

Auctioneers:
RHOADES & RHOADES
Los Angeles

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

EXTRAORDINARY DISPERSAL

55 REGISTERED HOLSTEINS 55

ELDORADO HERD OWNED BY ALEX. WHALEY

Tulare Sale Pavilion, Tulare, Cal.

Thursday, October 6, at 10 A.M.

This is one of California's choicest herds, and its dispersal affords an unusual opportunity for the purchase of Holsteins of unusual merit, both from the standpoint of splendid breeding and much better than average type, while the fact that only one animal in the entire herd is over 5 years old adds to the general attractiveness of the offering.

20 DAUGHTERS OF SIR AAGGIE DE KOL ACME 2ND

Here is a group of heifers that might well be considered by a breeder looking for a high class foundation herd of females. Their sire is one of the best bred yearly record bulls of the breed, having an average of 1154 lbs. butter in one year for five of his seven nearest dams, while their dams are the best cows in Eldorado Herd, and in addition a considerable number of these heifers are bred to a son of the 34 lb. 4 year old Coloma Beauty Butter Maid, or to King Tola Korndyke Pontiac, the outstanding young son of King Korndyke Pontiac 20th and the 36 lb. cow, K. P. Tola.

A GREAT FAMILY OF FEMALES

The 30 pound cow, Melba Hengerveld, her daughter by Sir Veeman Korndyke Pontiac, and her granddaughter by King Sadie Vale Idyl Segis, all due to calve before December 7 to Sir Aaggie De Kol Acme 2nd, comprise one of the most attractive families of females presented in a California sale.

KING TOLA KORNDYKE PONTIAC SELLS

No matter how high you have set your sights for a herd bull, here is a youngster that you can well offord to consider. He is just now ready for heavy service, and is sired by KING KORNDYKE PONTIAC 20TH, the $12,000.00 son of Miss Valley Mead De Kol Walker, and is out of K. P. Tola, the 36 lb. daughter of King of the Pontiacs that made 33.98 lbs. butter in 7 days at a previous freshening. Study his pedigree in the catalog, and then consider what a great individual he is and you will find an exceedingly rare combination of breeding and type.

Every animal positively guaranteed to be a breeder; every animal over six months old tuberculin tested and sold subject to retest by the buyer.

TERMS OF SALE: Cash, unless arrangements for credit are made before sale with the sale managers, California Breeders Sales and Pedigree Co., who will extend terms of one-third cash, balance in three equal payments in three, six and nine months, to responsible parties, with approved note bearing eight per cent interest.

Auctioneers:
Ben A. Rhoades, Los Angeles
Geo. W. Bell, Tulare

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

DISPERSAL SALE

70 REGISTERED HOLSTEINS 70

S. O. WALKER HERD
VISALIA, CAL.

Tuesday, October 4, at 10 a.m.

There are bound to be many great bargains in this sale, as the herd is one of especially rich breeding, and a very large percentage of the offering consists of young females or cows just in their prime.

KING OF THE BLACK AND WHITES WILL BE SOLD, and with 47 A. R. O. daughters he now has the largest list of any sire in California. He was the first bull whose 7 nearest dams averaged over 30 lbs. butter in 7 days, and his only two daughters to complete yearly records have shown excellent production.

35 DAUGHTERS OF KING OF THE BLACK AND WHITES, many out of A. R. O. dams with records up to over 30 lbs. butter in 7 days. Most of these are 2 years old or younger and comprise a group that would be attractive in any sale ring in the country.

OFFICIAL RECORD COWS with up to over 26 lbs. butter in 7 days, many in calf to King of the Black and Whites.

MOST OF THE DAUGHTERS OF KING OF THE BLACK AND WHITES are bred to a well bred grandson of Sir Pietertje Ormsby Mercedes.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; NO TUBERCULIN TEST CERTIFICATES

TERMS OF SALE: Cash, unless arrangements for credit are made prior to sale with the sale managers, California Breeders Sales and Pedigree Co., who will make terms to responsible parties of one-third cash, balance in three equal payments in three, six and nine months, with approved notes bearing eight per cent interest.

CATALOG FREE ON REQUEST

Auctioneers.
Ben A. Rhoades, Los Angeles
Geo. W. Bell, Tulare

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

HOLSTEIN Fred Hartsook RANCH CATTLE

We have assembled an excellent foundation herd of females and will be glad to have breeders call. Fred Hartsook, Lankershim, California.

When Writing Advertisers Mention California Cultivator.

BIONDINI OF HUMBOLT WINS THE CULTIVATOR PRIZE FOR AUGUST

By F. W. Woll

Five grade cows owned by Eugene Biondini of Ferndale had the highest average production of butter fat of similar groups in dairy herds entered in the state dairy cow competition, during the month of August, viz., 71.26 pounds, and the California Cultivator prize for that month was accordingly awarded to him. The production of the individual grades for the month was as follows:

	Age Years	Days in Milk	Milk Lbs.	Butter Fat Per ct.	Butter Fat Lbs.
Midget	6	86	1566	5.5	86.13
Brownie	6	151	1370	5.3	27.61
No. 62	7	92	1181	6.0	70.86
Rosalie	5	146	1014	6.9	69.97
Judy	5	111	1135	5.0	56.75
Average	6	117	1263	5.69	71.26

This is the second time this prize has been awarded to Mr. Biondini; he won it last May for the production of five other grades in his herd. Like the latter grades, the prize winning cows for August are all grade Jerseys and are all mature animals. It will be seen that the production of these grades ranged from 86.13 to 56.75 pounds of butter fat, the average production of milk being 1253 pounds, with an average fat content of 5.69 per cent (average distance from calving at beginning of month, 117 days).

These cows stood first among similar groups of five grades in 21 dairy herds in different parts of the state that competed for the Cultivator prize the past month. The average production of butter fat of all but ten of the groups came above 50 pounds, the lowest producing grades averaging 34.77 pounds.

Five grades owned by the following dairy farmers produced an average of over 50 pounds of fat during the month, viz., E. Biondini, Ferndale, 71.26 pounds; Earl Graham, Compton, 62.93 pounds; N. Hauck, Alton, 62.64 pounds; M. Pontoni, Arcata, 60.37 pounds; F. F. Pellissier, Whittier, 59.06 pounds; J. A. Genzoli, Loleta, 58.04 pounds; P. Iversen, Grizzly Bluff, 57.84 pounds; P. Christen, Waddington, 56.12 pounds; H. L. Wakeham, Santa Ana, 52.99 pounds; Adren Certified Dairy, El Monte, 52.01 pounds; and J. B. Harbers, Waddington, 51.77 pounds.

SWINE AT RIVERSIDE

The swine show at the Southern California Fair at Riverside will show representatives of the Poland Chinas, Duroc-Jerseys, Hampshires and Berkshires running close in the contest for supremacy.

Among the Duroc breeders already entered are J. C. Craig, Owensmouth; J. E. Thorp, Lockeford; George Jr. Republic, Chino; William V. Mong, Whittier; Sierra Vista Stock Ranch, Perris; Charnock Ranch, Hemet; Winsor Ranch, San Diego.

The Poland Chinas will be represented by the Eastman Ranch, San Fernando; R. A. Chapman, Oakmere Ranch, San Diego County; Bucklin Ranch, Fresno; Fred Gatewood, Fresno. A number of local breeders will show in the open classes as well as in the specials.

The Hampshires will be well represented by herds from the Fairbanks Ranch, Redlands; the Llano Vista Ranch, Perris; Francis T. Underhill, Santa Barbara; E. Avery Newson, Lankershim; the H and G Ranch, Solvang; A. B. Buell, Carpinteria; Carl J. Meiners, Ojai.

The Berkshires, too, will come in with a strong showing from all parts of the state. A. B. Humphrey, Escalon; Italian Vineyard Company, Guasti; D. A. Bastanchury, La Habra; George E. Stingle, El Monte; F. L. Hall, Perris; R. N. Hall, San Jacinto; C. T. Johns, Cucamonga, are among the entrants.

In each of the swine breeds there will be special litter futurities, which have filled, and in all these cases there will be additional entries in the open classes.

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$3.98

A wonderful value in Hip or Knee Length Rubber Boots made of REAL gum Rubber with heavily reinforced seams. Made to order of the English Government for the British Army at actual COST OF MORE THAN WE ARE SELLING THEM FOR. Will stand all extremes of heat and cold and made to give extra long wear. Finest quality pure gum rubber with extra heavy soles. This is one of the very finest BARGAINS we have ever been able to offer our customers and the stock is limited so get your order in very early. Nothing better can be worn by ranchers or men who work in irrigated districts, rice fields, etc. This quality of Hip rubber boot would usually cost you $7.50 to $8.00. Remember you can get the full HIP boots for $3.98 or the shorter knee length boots for $3.29. Be sure to mark which kind you want on the coupon below. WE DO NOT WANT YOUR MONEY IN ADVANCE. We take all risk because these boots are such wonderful values. Fill out coupon NOW and mail at once if you want some of these boots before they are sold out.

Send for free catalogue of shoes for men, women, boys, girls and children.

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Send me..... pairs of Rubber Boots as marked below, postpaid, at once. I will pay postman for them on arrival. If I am not entirely satisfied I will return boots and you will refund my money immediately.

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Name .....
(Print Plainly)

Address .....

Town..... State.....

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Installation can be made in wells 10 in. or larger. Produce 300 to 1,000 gallons per minute. Ask for Folder No. 4. American Well & Prospecting Company 407 E. 3rd St., Los Angeles

LET 'ER RAIN

If you've a man's work to do — wear TOWER'S FISH BRAND REFLEX SLICKER $4.50

A. J. TOWER CO. BOSTON.

TOWER'S TRADE MARK FISH BRAND

Big Money Boring Wells

One Man One Team

Have water on your own farm. In spare time make wells for your neighbors. It means $1000 extra in ordinary years, double that in dry years. No risk—no experience needed.

Outfits for Getting Water Anywhere

Earth augers, rock drills and combined machines. Engine or horse power. *Write for easy terms and free catalog.*

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Blackleg

MAY BE PREVENTED BY USING PARKE, DAVIS & CO.'S SCIENTIFICALLY PREPARED

Blackleg Vaccines

BLACKLEG VACCINE (BLACKLEGOIDS)
THE OLD RELIABLE BLACKLEG VACCINE IN PILL FORM

BLACKLEG AGGRESSIN
(GERM-FREE BLACKLEG VACCINE)
A NATURAL AGGRESSIN

BLACKLEG FILTRATE
(GERM-FREE BLACKLEG VACCINE)
AN AGGRESSIN MADE FROM CULTURES.

Write for free instructive booklet on Blackleg Prevention.

ANIMAL INDUSTRY DEPARTMENT OF
Parke, Davis & Co.
DETROIT, MICH.

RHOADES

Expert Livestock Auctioneers
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Sales Pavilion
Stock Yards at
Hynes, Cal.

& WE CONDUCT SALES OF REG. DAIRY CATTLE GRADE CATTLE GEN. FARM SALES in all parts of Calif. and adjoining States. Satisfaction guaranteed. Write for dates and terms.

RHOADES

USE SHIRE HORSES

Breed your mares to Shire Stallions, good Shire Geldings are in demand. Get some registered Shire Mares.

Shire owners, record colts young, fees are double after one year old. Prepare Shires for fall shows, premiums are very liberal this year. For information on Shires write

W. G. Lynch, Secretary, American Shire Horse Association, Tonica, Illinois.

BREEDING DATE BOOK---FREE

We have issued a convenient little book for the keeping of breeding dates of cattle, hoping to aid the breeder and cattle owner in maintaining accurate records. We will gladly mail you a copy free if you request it. A postal will do.

CALIFORNIA BREEDERS SALES AND PEDIGREE CO.
C. L. Hughes, Sales Manager
Sacramento Cal.

Venadera Herd

Offers some excellent young bulls ready for service. Sired by Japs Perfection Owl. Out of cows with Register of Merit records. Also a few heifer calves.

GUY H. MILLER
Route 1 - Modesto, Cal.

For Profitable Durocs

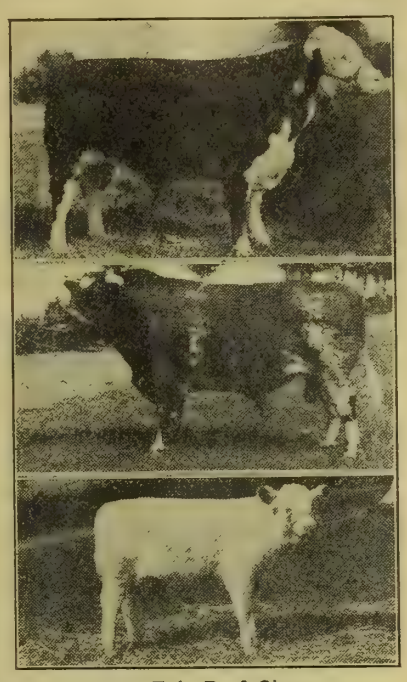
As we have sold out of bred sows and gilts, we are now offering big growthy fall pigs, either sex, at attractive prices.

D. G. Cummins & Son
Route 1 Visalia, Cal.

Some of the Prize Winners at the State Fair

A Dual-Purpose Champion

Grand champion Milking Shorthorn cow, Belleview Daisy, owned by Alexander & Kellogg.

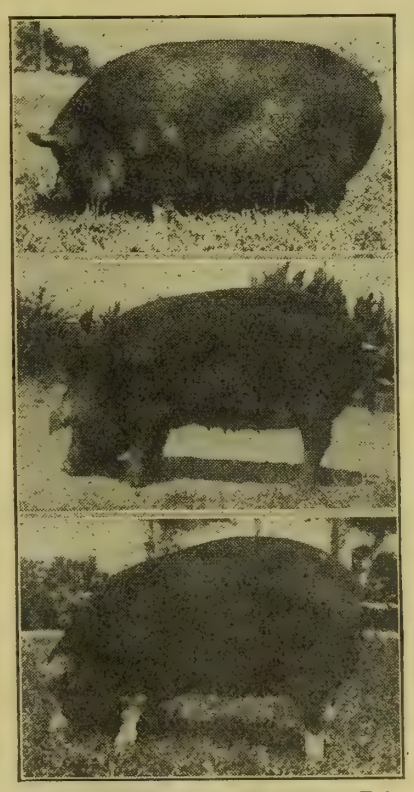


State Fair Beef Classes

Upper: Grand champion bull, Blanchard 1st, owned by the Nevada Hereford Ranch, Wells, Nevada.

Center: Senior champion Shorthorn bull, Imp. Corston Masher, owned by the Warm Creek Land and Cattle Co., Wells, Nevada.

Lower: Sensational junior champion Shorthorn, Caledonia Mischief 2d, owned by Caledonia Farms.



Grand Champion Hogs at State Fair

Upper: Grand champion Berkshire sow, Violet Festine, owned by Italian Vineyard Co., Guasti.

Center: Grand champion Duroc-Jersey sow, High Pathfinders Lady, owned by Wm. V. Mong, Whittier.

Lower: Grand champion Poland China sow, Hazel C, owned by Bassett Bros., Hanford.

Local meetings of the San Joaquin County farm bureau will be held at Acampo, October 4; Ripon, 5; Nile Garden, 7; directors, Stockton, 8; Lockeford, 10; Tracy, 11;; Linden, 12; Douglas, 13; Escalon, 17; Live Oak, 18; Bruella, 19; Summer Home, 20; Lathrop, 25; Calla, 28.

A Choice Holstein Offering

REGISTERED
47 HOLSTEINS 47
FROM
Robt. T. Curtis & Son Herd
Tulare Sale Pavilion, Tulare, Cal.
Wednesday, October 5, at 10 a.m.

The owners are selling the very tops of their herd in this sale, keeping only some of their older cows as the nucleus for building another herd.

SOME OUTSTANDING ATTRACTIONS

COLOMA BEAUTY BUTTER MAID, the great 34 lb. 4 year old, selling heavy with calf to Sir Aaggie De Kol Acme 2nd.

THREE DAUGHTERS OF THE $12,000 KING KORNDYKE PONTIAC 20TH, one out of Coloma Beauty Butter Maid; one out of a 26 lb. daughter of Winifred Hotaling; the third out of an excellent dam.

GRANDDAUGHTERS of Tilly Alcartra, Pontiac Korndyke, Pontiac Aaggie Korndyke, King of the Pontiacs, Sir Veeman Hengerveld and 13 granddaughters of the 38 lb. bull King Dollar.

A SON OF KING KORNDYKE PONTIAC 20TH WITH AN AVERAGE OF OVER 800 LBS. BUTTER IN ONE YEAR FOR SIX OF HIS SEVEN NEAREST DAMS.

MOST OF THE BRED FEMALES are in calf to King Prilly Mead, son of the 35 lb. Grand Champion cow, Betsy Lamb Prilly, that sold for $4,000.00, and is now making a splendid yearly record in the A. W. Morris & Sons herd.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OLD TUBERCULIN TESTED AND SOLD SUBJECT TO RETEST BY THE BUYER.

TERMS OF SALE: Cash, unless arrangements for credit are made before sale with the sale managers, California Breeders Sales and Pedigree Co., who will extend terms of one-third cash, balance in three equal payments in three, six and nine months, to responsible parties, with approved note bearing eight per cent interest.

Auctioneers
Ben A. Rhoades, Los Angeles
Geo. W. Bell, Tulare

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

DISPERSAL SALE

One of Stanislaus County's Choicest Herds
37 Registered Holsteins 37
Owned by JOHN SAXER, MODESTO, CAL.
Wednesday, October 12, at 11 a.m.

The sale will also include 6 head from the good herd of W. A. Walker, Ripon, Calif.

This is an offering of splendid type, substantial breeding, and presented in excellent physical condition. The offering includes

A 31 POUND GRANDDAUGHTER OF KING OF THE PONTIACS, out of a daughter of Sir Skylark Ormsby Hengerveld.

THREE DAUGHTERS OF SIR SKYLARK ORMSBY HENGERVELD, one of the very best sires ever developed in California.

A 2 YEAR OLD DAUGHTER of the great heifer Moorland Colantha Rose, sired by a 32 lb. son of King Mead of Riverside.

TWIN DAUGHTERS OF SEGIS PONTIAC DE KOL DUTCH, the Freeman & Edwards bull whose three nearest dams are all 1000 lb. yearly record cows.

THREE DAUGHTERS OF SIR WITKOP DE KOL, a three-quarter brother to the noted Freeman & Edwards heifer, Belle Faskie De Kol Witkop.

A SPLENDID LOT OF YOUNG COWS, many with good records, and representing most attractive and popular blood lines.

A SON OF MOORLAND COLANTHA ROSE

The sale will also contain a ten months old son of the great heifer, Moorland Colantha Rose, sired by Segis Dutch Ormsby, a 32 lb. son of Segis Pontiac De Kol Dutch. He is a high class individual, and should go to head a good herd of registered females.

Other young bulls of choice breeding, including two sons of the 31 lb. cow, Segis Johanna De Kol of Edelweiss.

Every animal positively guaranteed to be a breeder; every animal over six months old Tuberculin tested and sold subject to retest by the buyer unless otherwise announced at sale.

TERMS OF SALE: Cash, unless arrangements for credit are made before sale with the sale managers, California Breeders Sales and Pedigree Co., who will extend terms of one-third cash, balance in three equal payments in 3, 6, and 9 months, to responsible parties with approved note bearing eight per cent interest.

CATALOG OF SALE FREE ON REQUEST

Auctioneers:
Ben A. Rhoades, Los Angeles
John A Davis, Manteca

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

Tosantos Walker Mead

Born December 9, 1919
Exceptional Yearly Record Backing

His five nearest dams average over 1,000 lbs. butter in a year. He is out of a wonderful daughter of Prince Gelsche Walker and Sir Aaggie Mead De Kol. He is a show bull and is priced for immediate sale.

E. D. BARRY, JR. Workman and Azusa Ave., Covina, Cal.

Better service is assured by the advertiser if when writing you mention the California Cultivator.

35 TOP NOTCH HEREFORDS

— AT PUBLIC AUCTION —

California National Livestock Show Grounds

SAN FRANCISCO

Wednesday, October 26, at 1 P.M.

Providing an opportunity right at home to buy Herefords of most approved character and breeding. The cattle for this sale will be selected largely from the show herds of leading breeders in Nevada, Oregon, and California, by a committee representing

Pacific Coast Hereford Cattle Breeders Association

J. I. Cazier, President — J. A. Bunting, Secretary

The wonderful exhibit of young Herefords at this year's California State Fair was a revelation of the amazing progress the breed has made in California during the past few years, a progress that is right now only at its beginning.

Why not lay your foundation in this sale for one of the most useful, most profitable agricultural activities—the breeding of registered Herefords.

Write for circular and catalog of sale.

HULL, Auctioneer — BUNTING, in the Ring

MANAGED BY

CALIFORNIA BREEDERS' SALES AND PEDIGREE CO.

J. M. HENDERSON, President — C. L. HUGHES, Sales Manager

211-212 OCHSNER BLDG. — SACRAMENTO, CALIFORNIA

Santa Anita Rancho

Pure Bred Registered Percheron, Arabian and Thoroughbred Horses, Holstein-Friesian Cattle, Southdown Sheep, Big Type Poland China Swine, Mammoth Jacks and Jennets.

Young Breeding Stock of All Kinds

Every Animal Guaranteed

Santa Anita Rancho and Anoakia Breeding Farm

SANTA ANITA — Anita M. Baldwin, Owner — CALIFORNIA

O.U.R. Hampshire Swine

Ortega-Underhill-Rancho

Thos. T. Dinsmore, Mgr., Santa Barbara, Cal.

GLOBE "AI" FEEDS

-Judge them on Business Principles!

FEED FOR SWINE, STOCK AND POULTRY — ASK YOUR DEALER

GUASTI BERKSHIRES

We are breeding some awfully good Berkshires and are having very good success in the shows this fall.

We can supply your demand for

Big Modern Type Berkshires

in any class at reasonable prices.

Inquire about our bred gilts and young boars.

ITALIAN VINEYARD COMPANY

Alex. M. Wilson, Supt. — Guasti, Cal.

P. S.—Farmers and pig club boys given special attention.

LOS ANGELES COUNTY FAIR

(Continued from Page 355.)

After much deliberation the Hartsook cow was made first and later grand champion.

The junior champion was the beautiful Maxwell heifer, Lily McKinley Ormsby Skylark, a daughter of the unchallenged world's champion three year old, K. S. P. Lily McKinley.

Earl Sturgis showed a junior calf that was perfection itself and the sweetest thing in the whole show.

In the record cow class the Maxwell entry, Ormsby Buffalo Mercedes, with 928 pounds of butterfat and the highest score on conformation, was easily first over all breeds. De Kol Pet Segis, owned by Hartsook, was second.

In the three day milk contest the Maxwell cows won in both the aged cow and under three year old divisions.

The get of sire class was a humdinger with seven entries. Robert N. Clapp was first with Hartsook and Maxwell fighting for second.

Exhibitors: T. W. Jessup, Glendale; Harvey Frampton, Artesia; Maxwell Farms, Hollywood; Robert M. Clapp, Nuevo; Santa Monica Dairy Co., Venice; Herbert J. McDade, Jr., Pasadena; Sunshine Company, San Fernando; Carl Ray, Lankershim; Fred Hartsook, Lankershim.

Aged bull—1 Santa Monica on King Segic Pontiac Jannek; 2, Hartsook on Sir Aaggie DeKol Mead; 3, Sunshine on Canary Pontiac Ardsa Burke.

Two yr. old—1, Ray on Prince Juliana Fayne; 2, Clapp on K S P Jannek Count; 3, Ray on King Segis Pontiac Gelsche Walker.

Sr. yearling—1, Clapp on King Segis Pontiac Areo; 2, Maxwell on Sir Ormsby Heng. Sky.

Sr. bull calf—1, Maxwell on Tritoma Ormsby Piet. Fayne; 2, Maxwell on Tritoma Piet. Ormsby Burke; 3, Sunshine on unnamed; 4, Ray on Segis Idlwild De Kol.

Jr. bull calf—1, Ray on Sir Ormsby Skylark Segis; 2, Maxwell on Tritoma Ormsby Sky.; 3, Sunshine on unnamed; 4, Santa Monica on Segis Pontiac Butter Boy; 5, Hartsook on King Roderick Fayne.

Aged cow—1, Hartsook on Parthenia Segis Paul 2nd; 2, Clapp on Segis Walker Gelsche; 3, Hartsook on Jewel Phoebe 2nd; 4, Maxwell on Gerben Canary Belle De Kol; 5, Santa Monica on Miss Madrigal Segis.

Two yr. old—1, Maxwell on Flush Ormsby Skylark; 2, Clapp on K S P Joy May Beets; 3, Maxwell on Nancy Ormsby Skylark; 4, Santa Monica on Burbank Niko DeKol.

Sr. yearling—1, Maxwell on Lilly McKinley Ormsby Sky.; 2, Hartsook on Clara Juanita Newman; 3, Hartsook on Cornucopia Segis Pont. Jannek; 4, Ray on K L B DeKol Airplane Belle.

Jr. yearling—1, Santa Monica on Miss Aaggie Mead DeKol Veeman; 2, Hartsook on Burbank Seraphine Alcartra; 3, Santa Monica Dairy on Burbank Witkop Roderick; 4, Hartsook on Burbank Roxanna Alcartra.

Sr. Heifer calf—1, Hartsook on Julianna Repeater Marco Alcartra; 2, Ray on Mary Ann Mercedes De Kol; 3, Clapp on Pearl Nancy Calamo; 4, Maxwell on Pansie Skylark Trit. Ormsby.

Jr. heifer calf—1, Hartsook on Caronlie Wayne Fayne; 2, Sunshine; 3, Hartsook on Susy Newton Ormsby Snowball; 4, Ray on Mercedes Ormsby De Kol Korndyke.

Sr. champion bull—King Segis Pontiac Jannek; reserve, Prince Julianna Fayne.

Jr. champion bull—Tritomia Ormsby Pietertje Fayne; reserve, Sir Ormsby Skylark Segis.

Sr. champion cow—Parthenia Paul Segis 2nd; reserve, Flush Ormsby Skylark.

Jr. champion cow — Lily McKinley Ormsby Skylark; reserve, Caronlie Wayne Fayne.

Grand champion bull—King Segis Pontiac Jannek; reserve, Tritomia Ormsby Pietertje Fayne.

Grand champion cow—Parthenia Paul Segis 2nd; reserve, Lily McKinley Ormsby Skylark.

Aged herd—1, Santa Monica; 2, Hartsook; 3, Clapp.

Young herd—1, Maxwell Farms; 2, Maxwell Farms.

Calf herd—1, Maxwell Farms; 2, Hartsook.

Three best cows in milk—1, Hartsook; 2, Maxwell Farms; 3, Maxwell Farms.

Get of sire—1, Clapp, get of King Segis Pontiac; 2, Hartsook, get of Hazelwood Finderne Fayne; 3, Maxwell Farms, get of Sir Ormsby Skylark; 4, Maxwell Farms, get of Tritomia Pietertje Ormsby.

Produce of dam—1, Maxwell Farms; 2, Hartsook; 3, Clapp.

The Guernseys

The Guernsey show brought out a big surprise when Prof. Major, after long consideration, made Aristocrat of Windmere, a senior bull calf, grand champion over the great two-year-old Inspiration of Edgemoor, shown by the Adohr Stock Farm. There is no question that the calf is one of the best ever shown on the coast, but the big bull is exceptional also and it was a very hard class to judge. In the minds of the cooler and deeper thinking spectators the decision was right.

It was an excellent show all the way through with fairly large classes. In the aged bulls May King of Fern Ridge, many times grand champion, was first but yielded the senior honors to Inspiration of Edgemoor shown by Adohr Stock Farms.

In the aged cows the grand champion of the state fair, Sylvia of Frankland, shown by D. O. Brant, was first with Princess of Meadowbrook, many times champion, second, and Imp Cherry of the Effards shown by Dr. Wessels of Chino third. This class was easily decided as the second and third cows have calved recently and still carry considerable inflammation. Cherry was slightly lame also. Sylvia was easily senior and grand champion.

Brant showed a large herd and took most of the money.

The Adohr Stock Farm, whose business is principally that of producing certified Guernsey milk, had the distinguished honor of showing milk in the dairy division which scored 100 per cent. This is the first time that milk tested by the men from the United States department of agriculture was ever given a perfect score. Adohr also won 1 and 2 in grade cows with cow testing association records.

Exhibitors: D. O. Brant, Owensmouth; Windmere Farm , Chino ; Adohr Farm, Van Nuys.

Aged bulls—1, Brant on May King of Fern Ridge; 2, Adohr on Rex Harvester of Maple Hill; 3, Brant on Bayberry Barrier.

Two year old—1, Adohr on Inspiration of Edgemoor; 2, Brant on Itchen's Daisy King of Revada; 3, Adohr on Reuben King of Hollow-Hill Farm.

Jr. yearling—1, Windmere Farm on Imp. Man of War of Edgemoor; 2, Brant on May Day of The Rancho; 3, Adohr on Harvester Prime of Adohr; 4, Windmere Farm on Brilliant's May Secret of Edgemoor.

Sr. calf—1, Windmere Farm on Aristocrat of Windmere; 2, Brant on Noble King of The Rancho; 3, Adohr on Sephus of Adohr.

Jr. calf—1, Brant on Golden Glow of The Rancho; 2, Adohr on Adohr Escondido.

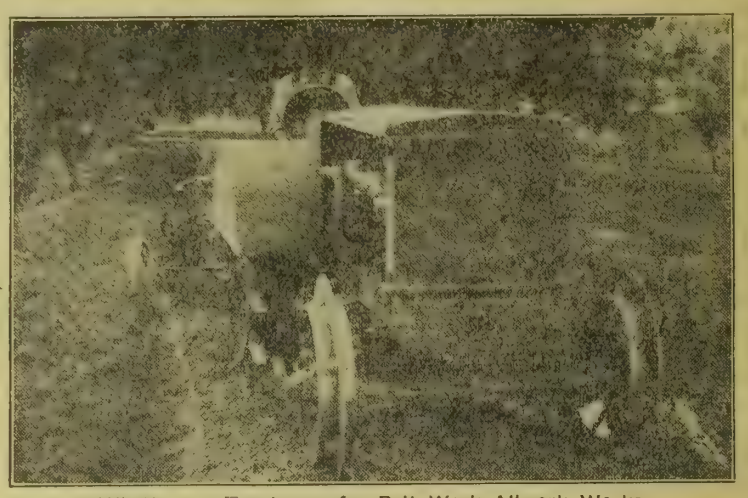
Aged cow—1, Brant on Sylvia of Franklin; 2, Brant on Princess of Meadow Brook; 3, Windmere Farm on Imp. Cherry 3rd of Effards; 4, Brant on Golden Glen Pansy.

Two year old;1, Brant on Rose Mary of The Rancho; 2, Brant on Elsie of The Rancho 2nd.

Sr. Yearling—1, Brant on Jeannie of The Rancho; 2, Windmere Farms on Pearl Rose Secret of Revada; 3, Brant on Pet of The Rancho.

Jr. Yearling—1, Brant on Felois Tungsten Priscilla; 2, Windmere Farms on Vampire of Edgemoor; 3, Windmere Farms on Minuet of Edgemoor.

Sr. heifer calf—1, Adohr on Inspiration Prime of Adohr; 2, Brant on Fascination of The Rancho; 3, Windmere Farms on Pearl Rose Golden Heiress of Edgemoor;



Whether as Tractor or for Belt Work Allwork Works.
The Allwork kerosene motor develops 28 horse power at belt, 14 at drawbar, has 36 inch wheels, weighs 4500 pounds and is supplied with automobile type of steering worm.

Classified Liners

The direct selling method from producer to consumer, and a clearing house for over 40,000 subscribers. Weekly Liner rates: Single insertion 4½ cents per word; 45c per issue minimum charge. Cash with Order.

Mail all classified copy to Los Angeles Office.

POULTRY

Continued requests are being received by the California Cultivator for varieties of poultry not advertised in our columns. If any of you, our readers and friends, have any you wish to dispose of, send a small advertisement to this office and you will be doing our readers a service as well as yourselves.

Day Old Pullets—Here is your chance to get day old White Leghorn and Ancona chicks, guaranteed at least 90 per cent pullets. We are taking orders fast for October and November delivery. We also have R. I. Red and Barred Rock chicks but do not separate the sex. All chicks are from strictly thoroughbred laying stock and are hatched right and shipped by Special Delivery Parcel Post. Send for prices and get your orders in at once. Orange County Hatchery, Santa Ana, California.

Baby Chicks from Petaluma Electric Incubator have "Pep" that surprises customers. Electricity is life. Modern poultrymen are rapidly adopting our system with splendid results. Safe, efficient, economical, better chicks. Hatch for yourself or get chicks from hatcheries using Petaluma Incubators. Write for our free catalog. Petaluma Electric Incubator Co., Petaluma, California.

OCTOBER—BABY CHICKS—JANUARY
Quality Stock—Reasonable Prices—
Good Service.
Write us about our R. I. Reds, Barred and White Rocks, Black Minorcas, White and Brown Leghorns. Book orders early and be sure. The Mission Hatchery, Box 27, Campbell, California.

Petaluma Hatchery—Established 1902 by L. W. Clark. White and Brown Leghorn chicks from heavy laying free range stock, every Monday and Thursday. We positively guarantee safe arrival and full count of good strong chicks and no questions asked. Send for prices and terms. L. W. Clark, Petaluma, California.

It's no wonder so many poultry raisers make a failure of the business. Without any knowledge of raising poultry people will branch out expecting to make a success. By putting in practice the valuable contents of POULTRY FOR PROFIT, $1.00 postpaid, success is assured in the poultry business. Cultivator Publishing Company, Los Angeles, California.

White Leghorn Baby Chicks: Walter Hogan stock. We get all our eggs from one flock of over 4,000 Walter Hogan hens that have been carefully Hoganized. Our specialty is first class White Leghorn chicks that satisfy our customers. We will have chicks every week. Lyon Hatchery, Gardena, California.

White King Pigeons of fine strain. Will dispose of old breeders at $3 a pair and unmated birds at $2 a pair up to Nov. 1st. Guaranteed to be as good birds as represented. Write for catalog. Paradise Valley Poultry Ranch, National City, California.

Chicks Every Week from good layers. Fall Broilers pay. Pullets make good layers. R. I. Reds, Barred Rocks, White Leghorns. Safe arrival guaranteed. Write for circular. Stubbe Poultry Ranch & Hatchery, P. O. Box 67, Palo Alto, California.

Baby Chicks from my heavy laying, carefully selected strain of pure bred S. C. White Leghorns. I am booking orders now for September and October delivery. Good chicks at reasonable prices. Write for particulars. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

White Leghorn Baby Chicks from heaviest laying (Hoganized) stock. Safe delivery live, vigorous chicks guaranteed. No money in advance; pay on delivery. Prices on request. Established 1898. MUST HATCH INCUBATOR CO., 438 Seventh St., Petaluma, California.

For Sale—Barred Plymouth Rocks; prize winners; some extra fine cockerels for sale now. Eggs for hatching in season; satisfaction guaranteed. Mrs. J. W. Snodgrass, Los Olivos, California.

Barred Plymouth Rocks — "Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Vodden, Los Gatos, California.

White Leghorn Baby Chix from Petaluma's heaviest producing stock. We guarantee safe arrival. Literature on request. Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

Watch Us Grow: Fall chicks, Rhode Island Reds, B. Rocks, White and Brown Leghorns and Anconas. E. W. Ohlen, Campbell, California.

Regal White Wyandotte cockerels, February hatch. White Feather Farm, Howard Burns, R. R. No. 1, Chowchilla, California.

"Eastman's Bred-to-Lay" Barred Rocks. Fall Chicks—March, April pullets. Fairmead Poultry Farm, Fairmead, California.

Success in business is attained by experience and knowledge. The poultry business can be made to pay by following the teachings and information contained in POULTRY FOR PROFIT, $1.00 postpaid. Cultivator Publishing Company, Los Angeles, California.

HORTICULTURAL PRINTING

Catalogues and Booklets, office forms and correspondence stationery for the nursery, seed and florist trade; half tone cuts of many standard plants. Correspondence invited. The Kruckeberg Press, 236 Court St., Los Angeles

RABBITS

Pedigreed Flemish Giants — No fancy prices. Maud Beeching, 1578 W. 46th St., Los Angeles.

FARM LAND FOR SALE

FARM RENTERS
You can become a farm owner on terms very much like those you are now paying to rent land. We have deep, rich soil with complete irrigation and drainage systems. We are willing to cooperate with hard working, reliable men who want to become owners of farms. Sutter Basin (in the heart of the Sacramento Valley) is your opportunity. Write now.
SUTTER BASIN COMPANY,
California Fruit Bldg., Sacramento, Calif.

Lake County Land for Sale—Bearing pear and prune orchards, dairy and stock farms. Alfalfa and grain land and other properties. Address Joe Hyman, Lakeport, Lake County, California.

For Sale — Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

CATTLE

Auction Sale—170 grade Holstein cows and heifers; 2 registered Holstein bulls; 20 head good farm work horses. Dairy herd one of the best producing herds in Sacramento Valley. Responsible parties may secure terms of one-third cash, balance in three, six and nine months, with approved notes bearing eight per cent interest, if arrangements are made before sale with NORTHERN CALIFORNIA MILK PRODUCERS ASSOCIATION, Sacramento, Calif. Sale will begin at 10 A. M., Saturday, October 8, on the M. T. Machado Ranch, 2 miles east and ½ mile north of Gridley, Butte County. Auctioneer, Col. Ben A. Rhoades, Los Angeles. Sale Manager, C. L. Hughes, Sacramento.

Auction Sale — 15 registered Holstein bulls; 35 grade Holstein cows and heifers. In order to make room for his rapidly growing herd of registered Holsteins, Mr. J. R. Crawford will sell his entire herd of grade Holsteins and fifteen richly bred registered Holstein bulls, nearly all ready for service. The owner, J. R. Crawford, Burrell, Calif., is prepared to extend liberal terms to buyers who make arrangements with him before sale. Sale will begin at 10 A. M., Monday, October 17, at West Lake Stock Farm, 20 miles south and 5 miles west of Fresno; 2 miles east of Burrell; 4 miles north of Riverdale. Auctioneer, Col. Ben A. Rhoades, Los Angeles. Sale Manager, C. L. Hughes, Sacramento.

For Sale — Several registered Guernsey bull calves, one old enough for service, Edgemoor Farm breeding, reasonably priced. Apply to Dr. J. A. Woodside, Santee, San Diego County, California.

Guernseys — Grape Wild Farms—Berkshires—Young bulls, from calf age up to 16 months old, of May Rose breeding and out of A. R. cows. Bred sows and gilts, service boars and pigs of both sexes for sale. Grape Wild Farms, Escalon, California. A. B. Humphrey, Proprietor.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome. Information cheerfully given. T. T. Miller, Hollister, California.

Berylwood Stock Farm—Breeders of registered Holstein cattle and Duroc-Jersey swine. Every cow an A. R. O. and T. B. tested. Bulls and females for sale. J. W. Snodgrass, Hueneme, California.

Yearly Record Holsteins—Bulls from 500 to 1,000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Some Choice registered Holstein heifers and bulls of serviceable age for sale. J. W. Scudder, Escalon, California.

Winsor Ranch Jerseys—Bull calves with production behind them, at reasonable prices. BONITA, CALIFORNIA.

MACHINERY

For Sale — Another big drop. Rebuilt windmills, tanks, pumps, cylinders. Why pay more. We make galvanized tanks, 400 gallons, $16.25; 600, $26.25; 1000. $37.25; 2000 capacity, $48.25. New irrigating pipe, 3-in., $13.50; 4-in., $17.50. Demmitt Co., office 120 N. Main, L. A. Phone 15191.

For Sale—Small Buzz Saw outfit, mounted. Tyrer, Box 96, Calabasas, California.

SEEDS AND PLANTS

Strawberry Plants for the Pacific Coast, such varieties as Nick Ohmer, Marshall, Kellogg's Premier, Klondyke, and about 30 other varieties; also Dewberries and Raspberries. Ask for free catalogue. V. R. Allen, Seaford, Delaware.

For Sale — Mountain Grown Strawberry Plants for fall planting. Carolina $2, Banner $1.50, Klondike and Brandywine $1.25 per hundred by mail postpaid. B. Bryan, Camp Baldy, California.

Alfalfa Seed — Certified Hairy Peruvian, Smooth Peruvian, Common. Write for samples and prices. Delta Seed & Feed Co., Yuma, Arizona.

LIVESTOCK

For Sale — Imported Percheron Stallion, good bone, fine action, excellent disposition, easy and safe to handle. Sires satisfactory colts with good dispositions. Several times grand champion. Worth $2500. Will sell for $1500, or consider trade for hay, straw, manure or heifers. J. J. Prendergast, Redlands, California.

Polled Herefords and Durocs — Diablo Stock Farm, G. W. Emmons, Prop., Danville, California.

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Carobs: California Wonder Tree, 10 to 20 tons to the acre of richest food grown; beautiful evergreen ornamental tree, fine for parkway, unsurpassed for windbreaks. Carob is not a soil robber but a nitrogen feeder. Send $2.00 for four sample trees; plant now. Original Carob Nursery, Colton Ave., No. 2, Box 60, San Bernardino, California.

FOR SALE — 100,000 SOUR ORANGE SEED BED STOCK; WASHINGTON NAVEL, VALENCIA LATE ORANGES AND EUREKA LEMON TREES; ALSO FUERTE, LYON, PUEBLA AND DICKEY "A" AVOCADO TREES. T. J. WALKER, FIRST NATIONAL BANK BUILDING, SAN FERNANDO, CALIFORNIA.

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For Sale—Grafted walnut trees, also citrus and deciduous trees. Order now for 1922 delivery. Get my prices. Ketscher's Nursery, 1101 E. 4th Street, Santa Ana, California. Phone 572-W.

Reliable Trees and grapevines at a fair price. Write us for price list. We ship on approval. J. F. Miller & Sons, Healdsburg, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier California. Selected stock for sale; inspection invited.

DUROC-JERSEYS

Weanling Boars and Gilts by Pathfinder Wonder (Great Wonder I Am ex an 800 lb. Pathfinder sow) for $10 each. Bred sows and gilts. Derryfield Farm, Capital National Bank Bldg., Sacramento, California.

Greenwood Farm Durocs — Moderate prices on bred gilts and weanling boars. Select individuals. Most popular breeding. H. C. Witherow, Mgr., Live Oak, Sutter County, California.

Boyanna Big Type Durocs — Breeding stock, priced right for sale. Inquiries invited. Satisfaction guaranteed. J. Boyd Harrold, Dixon, California.

Big Type Durocs—Better Durocs at right prices. Harvey M. Berglund, Dixon, California.

Winsor Ranch Durocs—The best of stock at reasonable prices. BONITA, CALIFORNIA.

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Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Calae Orchards, Martinez, California.

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Lendorris Ranch Polands — Big type Poland Chinas of all ages for sale. The kind that makes weight quickly. Weanling boars and gilts sired by Lendorris Liberator out of Lendorris Liberty Bond sows. Now ready for delivery. W. L. Haag & Son, Hanford, California.

Registered Poland Chinas. 40 tried brood sows; 40 gilts. Some choice young boars all at reduced prices to move at once. These Polands are as good as can be had anywhere at any price. W. D. Trewhitt, Route B Box 47, Hanford, Calif.

Big Boned Poland Chinas—Bred gilts and young boars priced to sell at once. Young stock, either sex, for sale at all times. Bassett Bros., Hanford, California

WANTED

Wanted—Walnut Meats and Cull Walnuts. We have been in this business 16 years; solicit culls for cracking only, paying cash. Fred L. Mitchell & Son, 214 French Street, Santa Ana, California. Phone 551-M.

Wanted to Buy—Any kind of dried fruit, honey or walnuts. Mail samples to W. A. Collins Co., Santa Ana, Cal. Packing house at 1001 East Fifth St., Santa Ana, California.

Wanted — Unsulphured Calimyrna and black figs and other unsulphured fruit. Write for information. Martin A. Witt, 120-122 West Ann Street, Los Angeles.

We Will Buy your Calla Lily roots. If you have 100 or more, write us. Sevin-Vincent Co., 512 Washington St., San Francisco, California.

Wanted: Avocado Seed. L. A. Tuttle Nurseries, Pasadena, California.

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ANGELUS ROOFING & PAPER CO.
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For Sale, Goats. Choice of 5 Toggenburgs, one fresh, six months, five quarts first kidding, two yearlings and two six months kids, all raised by me, some registered, others eligable, one perfect marked, sell one or all reasonable. Call afternoon or evenings. Mrs. O. B. Holman, 141 No. Allen Ave., Pasadena, Calif.

TURKEYS

For Sale — White Holland Toms, six months old, large, healthy birds of fine stock. For information write Garfield Johnson, Box 116, Fairoaks, Cal.

Bourbon Red Turkeys, Buff Orpingtons. The Ferris Ranch, Reservoir Street, Pomona, California.

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For Sale—Orchard Heaters—5,000 7-gallon "Citrus" Heaters, 500 "Hislop" Heaters. Practically as good as new, having been used but very little. Will sell at bargain prices. Call or write. Charles C. Chapman, Fullerton, California.

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Some Fine Toulouse Geese, a year old, bred from imported strain. Will sell at $15 a pair or $20 a trio until surplus stock is disposed of. All guaranteed to be in good condition. Write for catalog. Paradise Valley Poultry Ranch, National City,

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4, Brant on Melissa's Queen of The Rancho.

Jr. heifer calf—1, Windmere on Vesta of Windmere; 2, Adohr on Sweetbrier of Adohr; 3, Brant on Fenix of The Rancho; 4, Brant on May King's Rose Mary of The Rancho.

Sr. champion bull—Inspiration of Edgemoor; reserve, May King of Fern Ridge.

Jr. champion bull—Aristocrat of Windmere; reserve, Golden Glow of The Rancho.

Sr. champion cow—Sylvia of Frankland; reserve, Rosemary of The Rancho.

Jr. champion cow—Jeannie of The Rancho; reserve, Felois Tungsten Priscilla.

Grand champion bull—Aristocrat of Windmere; reserve, Inspiration of Edgemoor.

Grand champion cow—Sylvia of Frankland; reserve, Jeannie of The Rancho.

Aged herd—Brant.
Young herd—Brant.
Calf herd—Brant.
Three best cows in milk—Brant.
Get of sire—1, Brant; 2, Adohr; 3, Brant; 4, Windmere.
Produce of dam—1, Brant; 2, Brant.

Ayrshires

There was only one herd of Ayrshires present, the one shown by A. MacMinn of Phoenix, and all honors went to it.

The Swine

The Duroc-Jerseys were the most numerous in the swine and with the large herds shown by William V. Mong and J. C. Craig having just returned from the state fair they showed the most class.

Mong's state fair grand champion sow, Pathfinder's High Lady, was beaten by his senior yearling sow, Col. Pathfinder's Lady, who was reserve grand champion up north, for senior and grand champion.

The junior champion was a wonderful pig shown by Ward B. Wilson of Lankershim.

In the boars a junior yearling owned by Chas. LeMayne of Lankershim was made grand champion. This boar was sired by Great Sensation 3rd and is out of a daughter of Model Defender Lady, the old sow that won so many championships for Bob Walker. He is a wonderful boar excepting for one wrinkle just behind his shoulders.

In the pigs, Mong's boar, Sensation Bankroll, won again. His litter of pigs was first in young herd, get of sire and product of dam, and won the special trophy awarded by the Duroc-Jersey Association. Mong's aged herd was also first again.

Hampshires

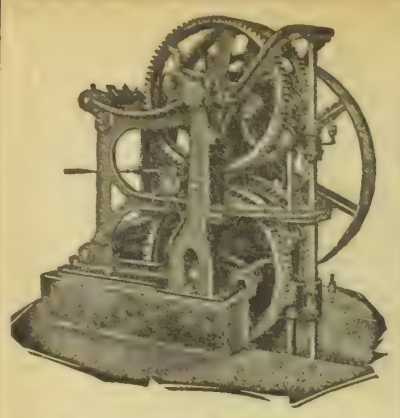
"Lonnie" Buell of Carpinteria came loaded to the Hampshire show and walked away in nearly all classes in which he exhibited. The aged herd shown by Buell could have won in any show on earth, according to the judge. It surely was a beauty with the grand champion boar, O. U. R. Hawkeye Grant and the old sow, Floreine 2nd as its main components.

Floreine 2nd, who was grand champion all around last year, had the honor of being grand champion and mothering the junior champion boar and sow also shown by Buell.

Josh Wilson, a young boy from Pasadena, showed the first prize senior yearling boar. Josh is a coming livestock man and buys, feeds and shows his animals.

Dr. E. Avery Newton was present with a large herd and took many blues as well as placing in all classes.

Citrus growers associations of Orange County are seriously discussing formation of a shipping company to send fruit through the Panama Canal to avoid excessive railroad rates.



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PETALUMA, CAL.

The San Fernando Poultry Show

By Jean A. Koethen

AFTER nearly 12 months without a poultry show in or near Los Angeles (the last was at Exposition Park last October) the show held in connection with the San Fernando Valley fair last week was heartily welcomed by all poultry folks of the south. It was time we knew what the fanciers were doing and no more auspicious time or place could be found than a tent at such a fair. To be sure, it was early for good plumage, and a little too hot for the birds under that big white tent, but all the folks enjoyed it, and there was no livelier spot on the fair grounds and no better exhibit than that in the poultry tent.

This was a good show, not so large as some that have been staged in years past, but a good representative show and well managed by that veteran fancier and poultry show director, E. I. Hammond, of Riverside. Over 600 brids were entered, including bantams, turkeys, ducks and geese. The entries were so thoroughly representative, and from such widely distributed territory that the seeker for good stock of almost any breed had no difficulty in getting a line on what he wanted.

Utility Stock Leads

Maybe some fancier will object to my calling Rhode Island Reds utility stock. Certainly there is no finer bird for the fancier's purpose, but the Red breeds beautifully to type and is also in high esteem as a layer, a mother and a meat breed. In every show of the past few years the R. I. Red has led in numbers and in this show its popularity was overwhelmingly evident, one-fourth of all birds entered being either S. C. or Rose Comb Reds. Of course the single comb birds were greatly in the majority. They always are, but the few Rose Combs were among the best birds shown.

But in speaking of utility breeds leading I had in mind not only the Reds, which were first in number, but the Leghorns, of three different colors, but mainly White, which were such a good second that no other breed came in sight of them. Out of 552 chickens (exclusive of bantams) in the show, 286 were Reds and Leghorns. This is exceptional and significant. The fancier has evidently discovered that if he is to sell his eggs at profitable prices he had better work with breeds that have a reputation as producers. Eggs and fine feathers are not mutually exclusive and some of our finest pure bred hens are also heavy layers.

Unusual Varieties

The Silver Leghorn may not be a new breed, but it is very rare, and the three birds shown attracted much attention. The male is black and white and the female mostly gray with some buff in breast and wing. Then there were more entries of Brown Leghorns than usual, with Light Brown and Dark Brown as carefully and distinctly differentiated as the Light and Dark Brahmas, which were also noticeable for their differences. The Light Brown Leghorn is the bird we are familiar with. The Dark Brown, which I do not remember to have seen before, is much darker, more on the color of the Partridge Rocks and Orpingtons.

Another entry that attracted a good deal of comment was the three roosters from a cross of R. I. Red and Blue Andalusians. They were long-legged, too long for vigor, but of very beautiful coloring, a mixture of red and slaty-gray, or perhaps I should say red on a background of bluish gray. It needed only a few white feathers somewhere to make every passer stand at attention and listen for the strains of "The Star Spangled Banner."

Wyandottes Score

Wyandotte Alley, while shorter than Red or Leghorn Alley, contained some very fine birds. Whites led with 47 birds, but there were specimens of Silver, Partride and Golden. Anconas were a smaller class than usual, only 38 birds being shown, and Light Brahmas had exactly the same representation. Barred and White Rocks are always good classes, but this time the White led, with Buff second and Barred third. Cornish, Buff and Black Minorcas and Sicilian Buttercups were not large classes, but creditable, and there was a sprinkling of R. I. Whites, Sussex, Langshans, Blue Andalusians and Houdans.

Bantams were interesting, as always, and the 82 birds entered included the best known breeds, Buff and Black Cochins, Silver and Golden Sebright, Black and White Rose Comb, Light Brahma and Black Breasted Red Game being among them. Half a dozen Bronze turkeys, a pair of geese, a pair of Runner ducks, and two White African guineas, one with a brood of baby guineas, completed a show worthy the careful study of any one interested in poultry.

POULTRYMAN'S CALENDAR—OCTOBER, THE PULLET MONTH

By October 1 all the pullets should be in the laying house beginning their fall work. The poultryman's first business this month is to make them so comfortable and feed them so well that every pullet with the requisite stamina will do her best. If they have been carefully culled every pullet will be starting without a handicap.

Absolute cleanliness—clean water, clean air, clean nests, clean droppingsboards, clean bodies, clean soil to run on, clean litter to scratch in—is the first esential.

An adequate ration is the second. A laying mash always before the pullets in hoppers; a full feeding of mixed grain at night, or divided between night and morning, with the night feeding heavier; greens twice a day; a light meal of mash moistened with sour milk early in the afternoon; this is the bill of fare that is put on by careful feeders. Not all feed the moist mash in the fall, but many do.

Abundant green feed is the third. Commercial egg production on a skimpy allowance of green is impossible. Alfalfa, kale, barley, chard and mangel beet, all are good, but alfalfa is the stand-by. Half an acre of alfalfa, well irrigated, will feed 2500 hens or more.

HIGH CLASS POULTRY AT STATE FAIR

THE recent exhibit of poultry at the state fair was declared to be one of the best yet staged. The total number of entries was 1,688. 517 of these were pigeons, which was 40 more than any preceding year. There were 323 bantams, 67 ducks, 30 turkeys, 10 geese. The rabbit exhibit was much lighter than preceding years. Judge Robert V. Moore said the crying need of the state fair poultry exhibit was "more room." Double-decking is not satisfactory, and this year's plan of doubling up entries was declared most objectionable. The only way to get in more cages is by spreading. The leaders in exhibits were Orpingtons, Rhode Island Reds and Columbian Wyandottes.

The Awards

AMERICAN CLASS

Barred Plymouth Rock

Ck.—1, P. A. Bryant; 2, Geo. H. Irwin.
Hen—1 and 2, Cameron Bros.; 3, Bryant.
Ckl.—1, Cameron; 2 and 3, Bryant.
Plt.—1 and 3, Cameron; 2, Bryant.
Pen—1, Cameron; 2, Bryant; 3, Poppy Hill.

White Plymouth Rock

All awards to Howards Poultry Farm.

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LOG SAW Tree Saw fells trees; Limb Saw cuts branches. Other Saw Rigs and farm and shop engines from 1½ to 22-H. P. Log Saws shipped promptly from 1 of 9 warehouses nearest you. 30-Day Trial. Cash or Easy payments. WRITE FOR FREE BOOK TODAY.

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Partridge Plymouth Rock
All awards to John R. White.

Silver Wyandotte
Ck.—1 and 3, J. K. Browne; 2, G. J. Bassette.
Hen—1 and 2, Browne; 3, Frank Blackwell.
Ckl.—1 and 2, Browne.
Plt.—1 and 2, Browne; 3, Bassette.
Pen—1, Browne.

Golden Laced Wyandotte
All awards to Manual Roberts.

White Wyandotte
Ck.—1, Jesse Moore.
Hen—1 and 3, J. W. Atkinson; 2, Moore.
Ckl.—1 and 2, Atkinson.
Plt.—1 and 3, Atkinson; 2, G. H. Buhrman.
Pen—1, Bassette; 2, Moore; 3, Mrs. R. C. Gruhlke.

Partridge Wyandotte
All awards to Manuel Roberts.

Columbian Wyandotte
Ck.—1 and 3, G. L. Aumock; 2, Howard.
Hen—1 and 2, Mrs. P. H. Chaussee; 3, Mrs. H. C. Browning.
Ckl.—1 and 3, Howard; 2, Chaussee.
Plt.—1 and 2, Chaussee; 3, Aumock.
Pen—1, Chaussee; 2, Howard.

R. C. Rhode Island Red
Ck.—1, Wm. Larm.

S. C. Rhode Island Red
Ck.—1 and 2, G. W. Wittenberg; 3, Larm.
Hen—1, Ward's Poultry Farm; 2, Joseph Fowler; 3, Wittenberg.
Ckl.—Wittenberg; 2, Fowler; 3, Ward.
Plt.—1, 2 and 3, Ward.
Pen—1 and 2, Ward; 3, Bryant.

ASIATIC CLASS

Light Brahma
All awards to Stewart Poultry Farm.

Blank Langshan
Ck.—1, Roselawn Poultry Yard; 2, C. R. Alvin.
Hen—1, 2 and 3, Roselawn.
Ckl.—1, Roselawn.
Plt.—1, Roselawn.
Pen—1, Roselawn.

MEDITERRANEAN CLASS

S. C. Light Brown Leghorn
Ck.—1, Williams Bros.
Hen—1, Williams; 3, M. C. Albrecht.
Ckl.—1, J. D. Roberts.
Plt.—1 and 3, Williams; 2, J. D. Roberts.

S. C. Dark Brown Leghorn
Hen—1, Williams.
Ckl.—1 and 2, Williams; 3, Roberts.
Plt.—1 and 2, Williams; 3, Roberts.

S. C. White Leghorn
Ck.—1, J. E. Fisher; 2, L. J. Amos; 3, Amock.
Hen—1 and 3, Fisher; 2, C. A. Blackmar.
Ckl.—1, Blackmar; 2, Fisher; 3, Amos.
Plt.—1, Fisher; 2, Roberts; 3, Blackmar.
Pen—1, Blackmar; 2, Amos; 3, Geo. Schmidt.

R. C. White Leghorn
All awards to R. G. Baxter.

S. C. Black Minorca
Ck.—1, Fisher; 2, Wittenberg; 3, Mrs. J. G. Johnston.
Hen—1 and 2, Albrecht; 3, Fisher.
Ckl.—1, 2 and 3,—W. A. French.
Plt.—1 and 2, Fisher; 3, Albrecht.
Pen—2, Johnston.

S. C. White Minorca
Ck.—1, Earl E. Sanders.
Ckl.—1, L. S. Poisal; 2, Sanders.
Plt.—1, 2 and 3, Sanders.
Pen—1, L. W. Pray.

S. C. Buff Minorca
All awards to Sanders.

Blue Andalusian
Ckl.—1, Albin; 2 and 3, Peralta Pigeon Farm.
Plt.—1, 2 and 3, Peralta.
Pen—1, Albin.

S. C. Black Leghorn
All awards to John E. Short.

S. C. Buff Leghorn
Ck.—1, M. Roberts.
Hen—1, 2 and 3, Roberts.
Ckl.—1, 2 and 3, Roberts.
Plt.—1, 2 and 3, Roberts.
Pen—1 and 3, Roberts; 2, Eugene Coons.

S. C. Ancona
Ck.—1, Reay's Royal Ancona Yards; 2, Atkinson; 3, Henry A. Dietz.
Hen—1 and 3, Reay; 2, Howard.
Ckl.—1, A. S. Wilkinson; 2, Atkinson; 3, J. M. Crabtree.
Plt.—1, Reay; 2 and 3, Atkinson.

ENGLISH CLASS

Black Orpington
All awards to Short.

S. C. Buff Orpington
Ck.—1 and 3, Marwick; 2, Short.
Hen—1, Marwick; 2 and 3, Short.
Ckl.—1, 2 and 3, Marwick.
Plt.—1 and 3, Marwick; 2, Short.
Pen—1, 2 and 3, Marwick.

S. C. White Orpington
Ck.—1, Short; 2, R. P. Lutzi; 3, Charley Stewart.
Hen—1, Lutzi; 2, Short; 3, Stewart.
Ckl.—1, Stewart; 2, Short.
Plt.—1 and 3, Stewart; 2, Short.

Speckled Sussex
All awards to Marwick.

Dark Cornish
All awards to J. O. Johnson.

POLISH CLASS

White Crested, Golden Laced, Non-bearded Silver Laced and Non-bearded White.
All awards to Mrs. Blanch Meredith.

Bearded White
All awards to R. G. Baxter.

FRENCH CLASS

White Houdans
All awards to Lutzi.

CONTINENTAL CLASS

Silver Campine
All awards to Bryant.

(Continued on Page 363.)

How Can the Farmer Prosper Unless the Railroads Prosper?

THE development and prosperity of farming in the United States have in the past gone hand in hand with the growth and development of the railroads. Ahead of or beside the courageous pioneer has gone the railway.

The railway is dependent on the farmer for the tonnage which enables it to live and conduct its pusiness. Likewise the farmer is dependent on good and adequate service by the railway as the means of getting his products to the markets of this country and the world under conditions which will enable him to prosper.

Railway Development at a Standstill

The development of the railways has been practically at a standstill for some years. No industry can grow unless it can get people to put new capital into it. No industry can get people to invest capital unless it can pay a return on this additional capital.

Stagnation in the railroad industry is a menace to the farmer. The products of the farms are constantly increasing. Without increased means of transportation these increased products of the farms cannot be carried to market.

The Earning Power of the Railroads Was Practically Destroyed During the War

They are now trying to get it back. They want to get it back so they can provide additional locomotives and cars to handle the increase in traffic and provide for the future development of the country. They must raise large amounts of new capital to provide these facilities.

Not Asking Return on "Watered" Stock

Every farmer and business man knows it is impossible at present to borrow large amounts of money for even 6 per cent. How can the railroads be expected to raise new capital for new facilities if they are not allowed to earn at least 6 per cent, which the Interstate Commerce Commission has held they need?

Is this 6 per cent on "watered" stock? No. It is not based on stock at all, or on bonds either. It is based on the minimum value of the property which the railways devote every day to the public service in transportation—tracks, stations, locomotives, cars, shops, and so on. This valuation has been made by the Interstate Commerce Commission under the Valuation Act fathered by Senator LaFollette of Wisconsin eight years ago.

It is not based on what it would cost to rebuild the railroads at present high prices of materials and wages, but **on what it would cost to rebuild them at pre-war wages and prices as they stood in 1914.** A valuation based on present wages and prices would be twice as great.

Some railroads are "overcapitalized." Many, including most of the big systems, are undercapitalized. But neither in the one case nor the other does this affect the basis on which rates are made.

What Regulation Can Not Do

The farmer has just lost a friend and the country a valuable citizen by the death of ex-Judge C. A. Prouty. He was for seventeen years a member of the Interstate Commerce Commission. He was in charge of the valuation of the railroads from the time it was begun until his death. He said:

"We can regulate the railways. We cannot by legislation force one single dollar of private capital into railway investment against its will."

The farmer, by favoring regulations that will help the railways to regain their reasonable earning power, can help them to attract hundreds of millions of dollars needed for rehabilitation and enlargement of railway facilities and for increased and improved transportation service to the farmer.

The further development of the country will be arrested and the farmers and all other classes seriously injured unless the railways are given opportunity to raise the capital needed to enable them to make their service better and more adequate.

Association of Railway Executives

61 BROADWAY NEW YORK — 764 TRANSPORTATION BUILDING CHICAGO, ILL. — MUNSEY BUILDING WASHINGTON, D.C.

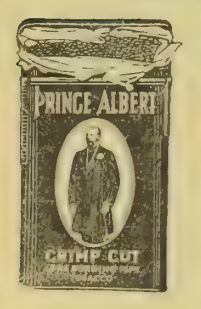
Those desiring further information on the railroad situation are requested to address the offices of the Association or the presidents of any of the individual railroads.

A pipe's a pal packed with P. A.!

Seven days out of every week you'll get real smoke joy and real smoke contentment—if you'll get close-up to a jimmy pipe! Buy one and know that for yourself! Packed with cool, delightful, fragrant Prince Albert, a pipe's the greatest treat, the happiest and most appetizing smoke-slant you ever had handed out!

You can chum it with a pipe—and you will—once you know that Prince Albert is free from bite and parch! (Cut out by our exclusive patented process!) Why—every puff of P. A. makes you want two more; every puff hits the bullseye harder and truer than the last! You can't resist such delight at any stage of the game!

Prince Albert is sold in toppy red bags, tidy red tins, handsome pound and half pound tin humidors and in the pound crystal glass humidor with sponge moistener top.



PRINCE ALBERT

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the national joy smoke

SOUTHERN CALIFORNIA FAIR

Riverside, Oct. 11 to 16, 1921

The Great Agricultural and Livestock Exhibition of the Great Southwest

The Largest Show of Dairy Breeds of Cattle in the State this Year

¶ ¶ ¶ ¶ ¶

The Greatest Display of Agricultural Products of Southern California Ever Yet Assembled. All Leading Counties of the South Compete for Liberal Premiums

¶ ¶ ¶ ¶ ¶

Largest Poultry Show in the State. Largest Goat Show in the World. Largest Dog Show in Southern California

Great Racing Program on the Fastest Track in the State. Five Days of Wonderful Racing

It's a Real Farmers' Fair. Let's Go!

Correspondence with the advertisers in the California Cultivator will convince you that their articles will save you money.

Los Angeles Markets

Los Angeles, September 28, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price 48 cents.

Prices Creamery Extras last week:

Sept.	21	22	23	24	26	27
'21 ...	48	48	48	48	48	48

CHEESE

Brokers prices:
California flats, 21@23.

EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 55, case count, 50; pullets, 41; pewee pullets, 23.

Extras last week:

Sept.	21	22	23	24	26	27
'21 ...	50	50	52	52	54	55

POULTRY

Price to producers: Hens, 27; colored, 32; broilers, 37; roasters, 30; old roosters, 20; fryers, 30; ducks, old, 12; ducklings, Pekin, 3½ up, 25; others, 25; geese, 25; turkeys, live, young tom, 50; dr., 55; old, live, 40; dr., 41; hens, live, 38; dr., 44; squabs, 45@47.

Belgian hares, live, 12@17; old, 8.

LIVESTOCK

Los Angeles, Sept. 27.—Weighed and delivered off cars without food or water:

Hogs (hard grain fed), 125 to 175 lbs., 9.00; 175 to 225 lbs., 9.50.

Cattle (on foot, gross weight): Steers, good, 6.50; medium, 6.00; cows, good, 5.00; medium, 4.50; bulls and stags, 3.00; calves, 125 to 150 lbs., 8.00; 175 to 225 lbs., 7.00.

Sheep: Ewes, 3.50@4.00; lambs, 7.00@7.50.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock September 27, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies heavy, demand and movement moderate, market firm. New stock: Mostly 1.00@1.25 per lug. Stocktons: Burbanks, per cwt., choice, 2.50@2.75; fancy, 2.85@3.00; few best, 3.25. Sweet Potatoes: Supplies moderate, movement slow, market weaker. Locals: No. 1, 75@1.00 per lug; No. 2, 50@70 per lug. Jobbing: 2½@3 per lb.

Onions: Supplies liberal, movement moderate, market firm. Locals: Per cwt., Whites, sacked, 3.25@3.50; poorer, 3.00; few best, 3.60; per lug: 1.15@1.25. Spanish, 4.00 per cwt. Stocktons: Per cwt., Whites, 3.50@3.75; Yellows, 3.50@3.75; per lug, Browns, 1.25; Yellows, 1.25.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock, September 27, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Supplies moderate, demand moderate, market weaker. Per lb.: Kentucky Wonders mostly 5½@6 per lb.; Green pods mostly 5@5½. Limas: Supplies liberal, movement moderate, market steady, mostly 4½@5; few best 6.

Beets: Supplies moderate, market steady. Per dozen bunches mostly 35 40.

Cabbage: Supplies liberal, market firm. Per field crate, best, 3.00@3.25; poorer, 2.50@2.75.

Carrots: Supplies moderate, market steady, per dozen bunches mostly 35@40.

Cauliflower: Supplies moderate, market steady, 2.00@3.00; mostly 2.50@2.75.

Celery: Supplies liberal, movement moderate, market weak. Per crate, mostly 5.00@5.50; poorer, 4.00@4.50.

Corn: Supplies light, movement moderate, market steady. Locals: Per lug, mostly 75@85; fancy, 1.00@1.10.

Cucumbers: Supplies liberal, movement moderate, market steady. Locals: Lugs mostly 50@65; pickles, 1.50@2.25 per lug, according to size and quality.

Eggplant: Supplies liberal, demand moderate, market steady, 5 per lb.

Lettuce: Supplies liberal. Movement good, market steady. Local: Field crates, best 1.00@1.25, poorer 75@85.

Okra: Supplies light, market steady, fancy, small, 9@12 per lb.; poorer, 7@8.

Peas: Supplies light, market firm, best 12@14 lb.; poorer, 10.

Peppers: Supplies heavy, market steady. Locals: Bells mostly 35@40 lug; poorer 30; Chili, 3@4 per lb.; lug best, 35@40; poorer, 25; Red Pimiento, 80@90.

Squash: Supplies moderate, market weaker, summer mostly 50@75 lug; Hubbard, 1½ lb.

Tomatoes: Supplies heavy, demand and movement slow, market weak. Locals: No. 1, per lug, pinks and ripes, 75@1.00; mostly 80@90. No. 2, 50@60.

Turnips: Supplies moderate, market weak. Per dozen bunches, 35@40.

FRESH FRUITS

Apples: Supplies heavy. Demand and movement very slow, market weak. Locals: 2@4; few fancy Yucaipa section, 5@6 per lb. Sebastopol: B Gravensteins, small sizes, 1.00. Watsonville: Fancy 4-tier Bellflowers, 1.50; 4½- tier 1.25; B grade 4-tier, 1.25; 4½-tier, 1.15 @1.20.

Cantaloupes: Supplies liberal, demand and movement moderate, market steady. Home growns: Tiptops, small crates, best, 90@1.00; other varieties, 50@60; Honeydews and Casabas, 1@1½ per lb.

Figs: Supplies moderate, demand good, market firm. Locals: Per box, 75@1.25; mostly 1.00; per lb., 8@10.

Grapes: Supplies liberal, movement good, market firm. Muscats, mostly 5@5½; Tokays, 7@8; few fancy Black Hamburgs, 5@6; Thompson Seedless, 5@6; Cornichons, 6 per lb.; Zinfandels, 5 per lb; Concords, 2.50 per lug.

Peaches: Supplies heavy, demand moderate, market weak. Wide range in quality and condition. Freestones mostly 75 @1.00; few best, 1.25; poorer, 40@65 per lug. Clings mostly 75@1.25, according to quality.

Pears: Demand and movement moderate, market firm. Bartletts mostly 5@6, few 6½@7; poorer, 3½@4 per lb.

Prunes: Supplies moderate, demand good, market firm, various varieties 5@6 lb.

Watermelons: Supplies heavy. Demand moderate, market steady. Locals: Klondikes mostly ½, few ¾ per lb.

CITRUS FRUITS

Grapefruit: Supplies moderate, movement moderate, market firm. Local: market pack, mostly 3.50@4.00; smaller, 2.50@3.00 special packed, 4.00@4.50.

Lemons: Supplies liberal. Demand moderate, market firm. Local: Special pack mostly 5.00@5.50; market pack, best, 3.50 @3.75; poorer, 2.75; lugs, 90@1.00.

Oranges: Supplies moderte. Demand moderate, market firm. Special brands mostly 5.50@6.00; market pack, 3.50@3.75; small sizes, 2.25@2.75; loose pack, 1.00@1.50, mostly 1.00@1.25.

HONEY

Supplies of white honey nearly cleaned up account short crop and good demand. Production of fancy grades considered only 25 per cent of normal. Moderate supplies of other grades new crop but old crop supplies nearly exhausted. Light nectar flow from beans anticipated. Demand fairly active past two weeks and prices advanced slightly. Market firm at present. Carload f. o. b. usual terms at loading points. White orange, 10½@11¼; white sage, 9½@11; light amber sage, new crop, 7@8; old crop, 7; light amber alfalfa, new crop, 5¼@5½; old crop, few sales, 5½. The quality of new crop alfalfa and sage said to be variable, due to the unfavorable season. Beeswax: Supplies moderate, demand light, market weak. Growers receiving 22@23; dealers asking 25 for crude wax.

NUTS

Cal. Walnut Growers Assoc.:
Opening prices to wholesalers:

No. 1 Softshell	24½
No. 2 Softshell	17½
Standard Budded	28½

GRAIN AND FEEDS

Grain Exch. price bid September 27:
Barley: 100 ton lots, Oct. del., 1.55.
Milo: 100 ton lots, Oct. del., 1.28.

HAY

Alfalfa Growers of California report:

Market past week firm in all parts of the state, especially for higher grades, and exceeded the supply as far as these grades of hay were concerned. In Los Angeles market Standard sells at $16, No. 1 Dairy is in sharp demand at $21 and $22, and rabbit and goat hay at $27, but could fill only a small part of orders for this grade. There is a continued sharp demand for fertilizer alfalfa from the orange districts in the southern part of the state but supplies of damaged hay in the alfalfa producing sections there are about exhausted; further business in large volume will therefore only be possible if users are willing to advance their bids sufficiently to meet the price for the next better grade of hay or to cover the cost of the higher freight rate in bringing damaged hay from the more distant parts of the state.

There were 730 tons of grain and alfalfa hay received on the Los Angeles tracks the week ending September 24, with 120 tons held over.

Prevailing prices, delivered in vicinity of Los Angeles:

Choice Rabbit Alfalfa	$28.00
Choice Dairy	24.00
No. 1 Dairy	21.00
Standard	16.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats	18.00@26.00
Barley	16.00@24.00
Alfalfa, Rabbit	22.00@26.00
Alfalfa, No. 1 Dairy	19.00@21.00
Standard	16.00@18.00

San Francisco Markets

San Francisco, Sept. 27. 1921.

Quotations made daily by San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

BUTTER

Extras 48.

Sept.	20	21	22	23	24	26
'21 ...	..	..	47	47	..	48

CHEESE

Dairy Exchange quotations:

Cal. Flats	23
Cal. Y. A.	25
Ore. Trips	21½
Ore. Y. A.	25

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Prices bid on Dairy Exchange quotations, September 26:

Extra	61
Extra firsts	57½
Extra pullets	47½
Undersized pullets	30

Sept.	20	21	22	23	24	26
'21 ...	..	..	55	56	..	57

POULTRY

Wholesale prices are:

Young chickens: Leghorns, 1 to 1¼ lbs., lbs. and up, 32@33; heavy breeds, 1½ to 1¾ lbs., 32; 2 lbs., 32; 2½ lbs. and up, 35@38; staggy roosters, 20@25; old roosters, Leghorns, 15; heavy breeds, 18; hens, Leghorns, large 25@27; small to medium, 20@23; hens, heavy breeds, 35@38.

Ducks: 20@23 per lb.; geese, 30 per lb.; turkeys, live, 31; dressed, 45; Belgian hares, live, 15; dressed, 18@20; squabs, fancy, 40; do, common, 3.50 per doz.

LIVESTOCK

Western Meat Company quotes:

Cattle: Steers, No. 1, 5¼@5¾.

Cows and heifers: 4@4½; No. 2, 4¾@5¼; second quality, 3½@4¼.

Calves: Light weight, 7@8; heavy, 5½@6½.

Sheep: Wethers, 3½@4; ewes, 2½@3.

Hogs: Hard, fat grain-fed, weighing 125 to 200 lbs., 10; do, 200 to 250 lbs., 9½; do, 250 to 350 lbs., 8; light sows, 8; heavy, 7.

California Farm Bureau Marketing Association reports:

No. Hogs	Ave. Wt.	Dock	Price
Turlock, September 20			
19	186	...	$10.10
19	243	...	9.10
7	340	130	7.60

One car, 10 consignors, $952.00.

Madera, September 22			
87	182	...	10.30
3	173	...	8.90
47	257	...	8.90
6	368	110	6.90

Two cars, 7 consignors, $2,910.80.

Fresno, September 23

One car @ 9.65, 1 consignor.

Total for the week, 4 cars, 18 consignors, $5,318.76.

These prices are f. o. b. shipping point, to the farmer, while the prices quoted to the newspapers are off cars at their packing house.

POTATOES AND ONIONS

Street prices:

Potatoes: White, fy., per cwt., 2.00@2.25, fy. 2.50; Salinas, 3.00@3.25; Ore. Burbanks, 2.25@2.50; Sweets, 2½@3⅛ per lb.; Turlock Nancy Hall, 2½@3½ per lb.

Onions: Australian Brown, nominal; crystal wax, nominal; new crop Yellow, 2.25@2.75; Brown, 2.50@2.75; green, 1.50@2.00 per box.

Garlic: 3@5 per lb.

VEGETABLES

Wholesale selling price:

Beets: 1.75@2.00 per sack.

Beans: String, 4@6 lb.; Lima, southern, 5@7;

Carrots: Sk., 1.00.

Celery: 3.50@4.00 cr., bunch 25@35; bleached 5.00 cr.

Corn: Alameda, 90@1.50 sack; 2.00@2.75 cr.

Cucumbers: Bay, 40¾@50; fy. River, 50¾@65 lug.

Eggplant: Lb., 3@5; Livingston, 6@7.

Lettuce: Crate, 1.25.

Okra: 1.00@1.50 per box of about 10 lbs.

Peas: 10@11.

Peppers: Bells, 3@4 lb.; 50@75 lug; Chili, 3@5.

Squash: Bay 40@60 per 40 lb. lug; Italian Pinensula, 70@1.10 lug; cream, 75@1.00.

Tomatoes: Sacramento and Peninsula, 50@1.00.

BEANS

Below California Bean Growers Association shippers prices choice recleaned:

Large Whites	5.05
Pinks	4.80
Mexican Reds	5.05
Red Kidney	7.75
Henderson Bush	4.80
Cranberries	5.75
Bayos	5.70
Blackeyes	3.55

HAY AND FEED

A. W. Scott Co. says under date of Sept. 24:

Receipts were 1,288½ tons. All grades of hay and all branches of business seem to record a little movement and more encouraging conditions; while prices may not respond for some time on account of the oversupply, nevertheless better markets seem to be developing and we can report the situation as one of much encouragement. Alfalfa has been moving a little more actively on account of a few small scattered export shipments, but with so little local demand as to keep prices at their present low level.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the markets in San Francisco (for prices to consumers, charges of switching, cartage, commission, and handling expenses must be added, according to conditions).

Wheat Hay No. 1	15.00@18.00
Wheat Hay, fair grade	13.00@15.60
Tame Oat Hay	12.00@15.00
Wild Oat Hay	10.00@12.00
Alfalfa Hay, later cuttings	12.00@14.00
Stock Hay	8.00@10.00
Barley, Ground	31.00@33.00
Rolled	29.00@30.00
Oats, Rolled Feed	34.00@36.00
Bran and Millrun	25.00@28.00
Middlings	40.00@43.00
Cocoanut Meal	22.00@25.00
Alfalfa Meal	21.00@23.00
Cottonseed Meal	38.00@40.00
Sugar Beet Pulp	31.00@32.00
Molasses, Tank, 21.00; bbl.	25.00
Milo Maize	38.00@41.00
Corn Meal & Crkd Corn	38.00@41.00
Scratch Feed	45.00@48.00

GRAIN

Sales on Grain Exchange Sept. 26:

Wheat: Milling, 2.00@2.07½; feed, 1.95@2.07½.

Barley: Feed, 1.20@1.25; shipping, 1.27½@1.35.

Oats: Red Feed, 1.40@1.60.

Corn: California yellow, 1.50@1.55; No. 2 Eastern, in bulk, 1.50@1.52; do, No. 3, 1.66@1.75; No. 3 Kafir, in bulk, nominal; White Gyp., 1.75@1.80; Cal. Red Milo, 1.65@1.75.

Citrus Markets

Los Angeles. Sept. 28, 1921.

The old citrus year has but a few weeks to finish the greatest of all the years in citrus shipments from California. Most of the Valencias remaining will be off the trees by the first day of November, and observers are carefully taking note of Navel condition. Accurate figures are not available but rough estimates are that the crop will be materially larger than the present year, in some sections as great an increase as 25 per cent is noted. The Florida crop will be somewhat greater than that of last year.

The lemon market continues excellent.

Shipments

Shipments of citrus fruits to date since November 1, 1920, Southern California: Oranges, 38,253 cars; lemons, 10,876; total, 49,129. To same date last season: Oranges, 29,092; lemons, 7,767; total, 36,859. From Central California to date this season: Oranges, 6,649; lemons 212; total, 6,861. To same date last season: Oranges, 5,381; lemons, 289; total 5,670. From Northern California to date this season: Oranges, 305; lemons, 5; total, 310. To same date last season: Oranges, 261; lemons, 23; total, 284.

POULTRY AT STATE FAIR

(Continued from Page 361.)

DUCKS

White Pekin

Old Drake—1, Marwick; 2, A. J. Coe.
Old Duck—1, Blackman and Mumford; 2, Marwick; 3, Coe.
Young Drake—1, B. & M.; 2, Marwick; 3, Coe.
Young Duck—1 and 2, Marwick; 3, B. & M.
Pen—1, Marwick.

Rouen

All awards to Bryant.

Fawn and White Indian Runner

All awards to William McGee.

White Muscovy

All awards to Albrecht.

Buff Orpington

All awards to McGee.

GEESE

Gray Toulouse

All awards to Coe.

White Embden

All awards to John G. Mee.

TURKEYS

Mammoth Bronze

Old Tom—1 and 3, Mee; 2, Cal. Swine Corp.
Old Hen—1, Cal. Swine Corp.; 2 and 3, Sanders.
Yr. Tom—1 and 3, Sanders; 2, Mee.
Yr. Hen—1 and 3, Mee; 2, Sanders.

Bourbon Red

Old Tom—1 and 2, J. J. Barry; 3, Lloyd.
Old Hen—1, 2 and 3, Lloyd.
Yr. Tom—1 and 2, Barry.
Yr. Hen—1 and 2, Barry.

CAPONS

Trios

1 and 2, Cameron Bros.

EGGS

Special (One Dozen)

Best White, Howard; 2nd, Johnston.
Best Brown, Chaussee; 2nd, Marwick.
Best Plymouth Rock, Howard.
Best Wyandotte, Chaussee.
Best R. I. Red, Wittenberg.
Best Brahma or Cochin, Coe.
Best Leghorn or Ancona, Howard.
Best Minorca, Johnston.
Best English, Marwick.
Best Continental, Bryant.

New Lamp Burns 94% Air

Beats Electric or Gas

A new oil lamp that gives an amazingly brilliant, soft, white light, even better than gas or electricity, has been tested by the U. S. Government and 35 leading universities and found to be superior to 10 ordinary oil lamps. It burns without odor, smoke or noise—no pumping up, is simple, clean, safe. Burns 94% air and 6% common kerosene (coal-oil).

The inventor, V. N. Johnson, 31 N. Fifth St., Portland, Ore., is offering to send a lamp on 10 days' FREE trial, or even to give one FREE to the first user in each locality who will help him introduce it. Write him today for full particulars. Also ask him to explain how you can get the agency, and without experience or money make $250 to $500 per month.

The Problem of Plowing an Orange Grove

It is generally admitted and in fact seldom questioned that the planting of a cover crop in an orange grove is absolutely necessary. There has been serious difficulty, however, in plowing the cover crop under due to the fact that up until now there has been no really satisfactory orchard plow offered for sale for plowing under of the cover crop. To do this work successfully the plow should be low to the ground to avoid tearing the trees but at the same time should have plenty of clearance so that the cover crop may be properly turned under. The plow should be designed so that one may get as close to the trees as possible when plowing either to or away without injury to the trees. The wheel base of the plow should be narrow in order that it might get close to the trees at the same time it must not tip over and this has been a common fault with the plows offered to do this work in the past.

It will be a great satisfaction to orchardists to see the new La Crosse Orchard and Vineyard Disc Plow doing all these things and doing them successfully. The La Crosse Orchard Disc Plow is built upon an entirely new principle. The beams are overhead instead of there being a frame around the discs which gives unusual clearance, in fact more clearance than any plow ever offered in this section. This gives the plow a wheel base that makes it almost impossible to turn over. The discs are large, 26 inches wide and are equipped with a practical scraper which acts exactly like a moldboard in turning the cover crop. A cover crop to the height of 4 or 5 feet can be turned so that the ground is left perfectly clean. The discs, when cutting either to or from the trees are well outside of the frame so that it is not possible to get closer to a tree than one can plow with the new La Crosse Plow.

The general agents for this plow in California are Dixon & Griswold, No. 130 North Los Angeles Street, Los Angeles, Cal. The La Crosse Orchard and Vineyard Disc Plows are sold with the distinct understanding that the plow will perform to the absolute satisfaction of the orchardist or the plow may be returned and the purchase price refunded in full. In other words, Dixon & Griswold absolutely guarantee these plows to give perfect satisfaction in orchards or vineyards. Circulars with full descriptive matter and prices may be had upon request.

Public Sale

POLANDS and DUROCS

53 head Big Type and extra good. 2 bred gilts in the Polands. Balance spring gilts including 4 boars. The Polands represent the blood lines of Peter the Great, through his good son Gladiator, Big Orphan, The Argonaut. One litter by the Californian, and other sires recognized by the best breeders of Polands. This is an especially good lot of young gilts, fit to be placed in any herd in the state. The Durocs are headed by the herd sire, a son of Cummin's Good Enough, a prize winner.

Free Lunch
Sale will be held on Tagus Ranch,
TULARE, CAL.
Saturday, October 8

Four month's time will be given purchaser on approved note
Write today for Catalog to GEO. W. BELL. Tulare, Cal.
CLYDE HORR, TULARE, CAL.

Watch La Tierra de Uva Durocs **Pathfinders, Orions, Sensations**
Three Top Boars

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Remember that even the best-intentioned hen won't "pay in full" unless the feed you give her contains the elements necessary for egg-building. Nature provides each laying hen with just so many eggs in embryo. And if you leave it to Mrs. Biddy she is apt to take six or seven years to produce her full quota of eggs. And, incidentally, she is apt to leave *you* high and dry in the process.

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LVII — October 8, 1921 — No. 15

More Pest Fighting Suggestions

THE fund of good things given in our issue of September 24 seemed most complete, yet there were other items and illustrations in hand which we had hoped might be given with that issue. They were necessarily held out because we had provided too liberally. As it was, our subscribers have been coming back and asking for additional copies and expressing freely their admiration for the number "well worth far more than the entire year's subscription price." So we give this week a number of illustrations and short articles to round out and complete the fund of spray, dusting and fumigation information.

* * *

GRAPE INSECTS AND DISEASES AND THEIR CONTROL

By Fred K. Howard

California Root Worm (Adoxus obscurus L.)—A black beetle whose larvae attack the leaves, stems, petioles, roots and fruit of vines. Cultivate deeply around the base of the vines. Spray with Formula 19 (as given on page 314 of September 24 issue of Cultivator) as soon as beetles appear.

Erinose (Eriophyes vitis)—This so-called disease is produced by a small mite and is characterized by swellings formed upon the upper surfaces of the leaves. Dust plants lightly with sulphur when they are wet with dew.

Flea Beetle (Haltica carinata Germ.)—It infests the foliage and may be handled by spraying liberally with Formula 19 (see first paragraph).

Grape Leaf Folder (Desmia funeralis Hub.)—The larvae roll themselves up in the leaves which they eat. Spray with 19 (see first paragraph).

Grape Phylloxera (Phylloxera vastatrix)—Attacks roots and foliage of the vines. Plant resistant stock. Be sure of your nursery stock. Give the affected vines the best of care to minimize crop reduction.

Hawk Moth (Philampeles achemon Drury)—The large green larvae of this moth feed upon the foliage. Hand pick, or if too numerous, spray with:

Lead arsenate (paste)	5 pounds
Water	100 gallons
or	
Lead arsenate (powder)	5 pounds
Water	100 gallons

Use casein spreader as directed or 12 pounds atomic sulphur to each 100 gallons.

Nematode Root Gall (Heterodera radicicola Mull.)—A minute worm attacking the small roots. Do not plant infested vines. Control in field impractical. Fertilize and improve general tilth.

Vine Hopper (Typhlocyba comes Say.)—Infests foliage of the vines. Spray as soon as the young begin to appear with

Black Leaf 40	1 pint
Whale oil soap	4 to 5 pounds
Water	200 gallons

Mealy Bug (Pseudococcus bakeri)—Second brood feed on maturing grape cluster. Exude large quantities of honey dew, rendering fruit unfit for sale. Spray vines before buds open with miscible oil, 15 gallons to 200 gallons of water, or after buds open and before shoots reach 1½ inch length with miscible oil, 32-34 degrees Baume, 7 gallons to 200 gallons of water.

Common Cut Worm (Euxoa atomaris)—Attacks opening buds in early spring, feeding at night. Use poison bran mash at base of vines or hand pick with aid of bullseye lantern before midnight.

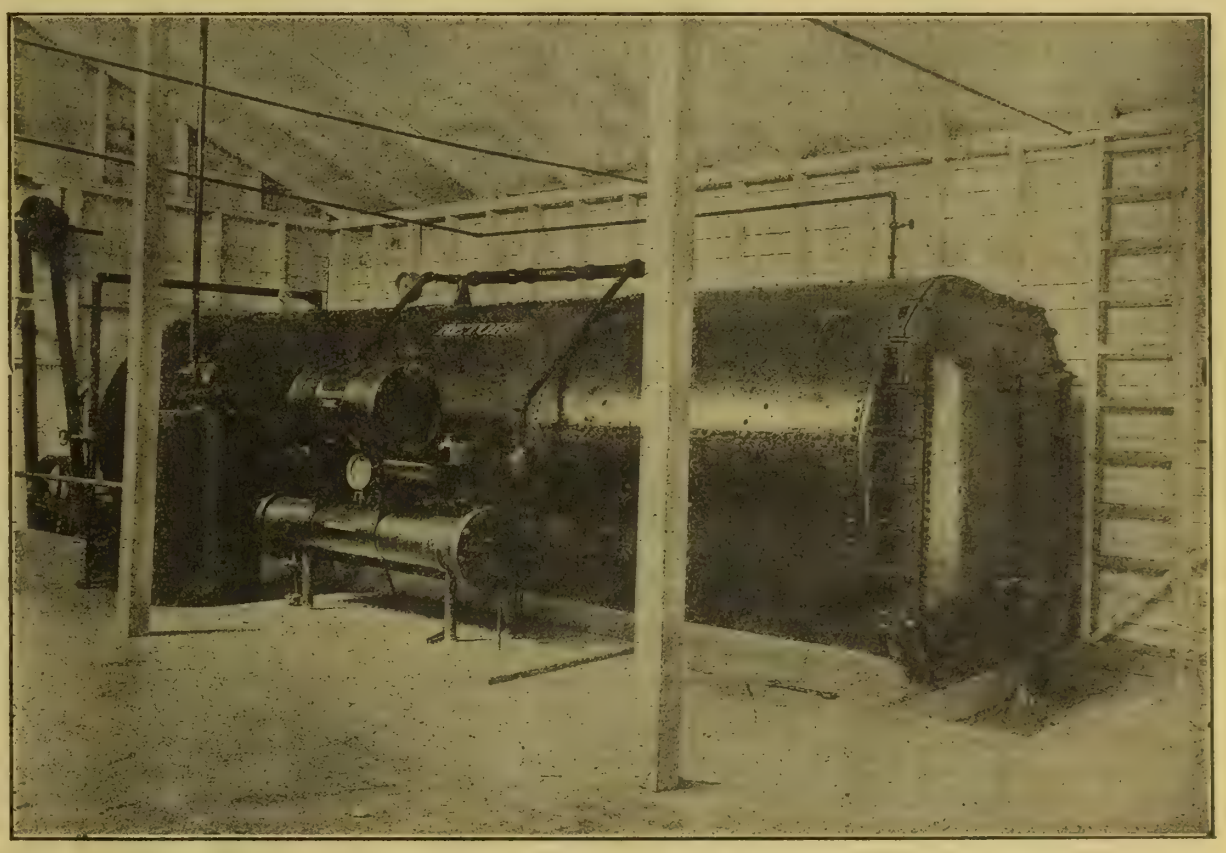
Grape Vine Hoplia (Hoplia callipyge)—Feeds on leaves of grape vines during early summer. Jar into receptacles containing oil or spray every week with arsenical sprays.

Powdery Mildew (Uncinula spiralis and Uncinula necator Schw.)—Grows upon the canes, leaves and fruit. Dust often with sulphur as soon as the disease appears. Spray early with No. 1 or 2 (a) as given on page 313 of September 24 issue of Cultivator.

Cut Worm Bait:

Part I—White arsenic	2½ pounds
Bran	50 pounds
Part II—Lemons (chopped fine, including rind)	½ dozen
Syrup or molasses (cheap)	4 quarts
Water	5 gallons

Mix Part I and Part II and add enough water to make a wet mash. The parts should not be mixed until ready for use.



Big Enough to Take in a Load of Cotton.

Bales of cotton are placed in this vacuum retort. When air is exhausted hydrocyanic acid gas is admitted and penetrates to the very center of the bale. This retort is located in San Francisco. Engraving courtesy state department of agriculture.

NEMATODES

By H. J. Ryan

One of the most insidious of the pests with which the grower of crops must contend is a minute worm known as the root-knot nematode, so named because of the knotty swellings produced upon the roots of infected trees and plants. The swellings should not be confused with the bacteria nodules found on the roots of beans, alfalfa and other leguminous plants nor with the tumors caused by the crown gall organism and known as crown gall root knot. Both of these are in the nature of growths attached to the plant root while the root knot nematode causes a swelling of the root itself which interferes with cell growth and in many cases kills the plant.

An almost unbelievable number of plants are attacked by the little animal. The list of plants known to be immune or somewhat resistant to injury is short in comparison.

Generally speaking the fleshy rooted trees and smaller plants are the most severely injured. Figs and peaches are seriously damaged; potatoes are rendered unsightly for market or table purposes; tomatoes, beets, beans, melons and a number of other plants are often so stunted that a crop cannot be produced.

Too much care can not be exercised to prevent the distribution of infested plants or soil on plants to areas which are free from the pest. Garbage, manure, or waste matter of any kind containing parts of diseased tubers or roots may spread the parasite and should never be placed on uninfested land. The pest is also frequently carried to other fields by means of irrigation water and surface waters resulting from heavy rains.

The most common method of transporting the disease from one locality

(Continued on Page 370.)

Established 1877 Forty-fourth Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877

Combined with California Cultivator 1914 Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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Saturday October 8, 1921

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

If among the more than 40,000 Cultivator's weekly circulation any fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

EDITORIALETTES

One of our exchanges in the extreme southern end of the state announces that the farm bureau is asking from the federal government aid in fighting ducks. Another paper in the same county speaks of farmers in that section appealing to the biological survey for aid in securing relief from blackbirds. The survey has been aiding in controlling mountain lions, bobs and other four footed pests, now it will have opportunity to furnish guns and ammunition, and even the hunters, to secure the four and twenty birds to bake in a pie. But, seriously, it is serious when a farmer puts costly seed into the ground and sees the blackbirds by millions devouring it.

* * *

Gifford Pinchot recently made a flying visit to California in the interests of the campaign of preserving for the people their own. In a talk in Los Angeles he referred to an incident where a speaker chose for his subject two letters. The placing of these two letters on a blackboard brought out wildest enthusiasm and prolonged cheering. Those two letters were "T. R." This enthusiasm was not of the political kind but came simply from admiration for integrity, for character, for manhood. Mr. Pinchot said that California's power resources had been preserved for the people because of the staunch stand of Theodore Roosevelt. He then gave warning to the people that if those great privileges were to be preserved the people of all the state must awake and claim them. As to the possibilities in the present fight Mr. Pinchot added: "There is no good thing without a way for securing it."

* * *

Many a man finds the hardest part of a job is getting started to do it. When that man happens to be a farmer it is probable he will leave implements and tractors out in the elements between jobs, and the implement man makes money because of his laxness, that is, providing the farmer saves enough to purchase another new implement.

* * *

Implement people are to gather in Chicago next week and talk with each other as to the needs of agriculture, so far as they can be seen from an implement maker's standpoint, and, incidentally, we doubt not, talk much as to the commercial side of implement marketing. As a hint, we may suggest that if the present effort in congress to secure just marketing privileges in a cooperative way is supported farmers marketing will bring in more money to the implement maker. Farmers will use the latest and best of labor saving implements, not because of pride but because of necessity, but no matter how great the necessity for implements, there is greater necessity for cash.

* * *

The war finance corporation continues extending its activities and is securing real advantage to agricultural interests. Its effectiveness depends largely upon cooperation of national and other bankers. At first many of them looked with distrust upon the work of this board because they did not fully understand the provisions of the act creating it. This has been overcome, and today California and all other states have opportunity to finance large productive undertakings.

* * *

The orange growers have figured out that present day freight rates have added to the cost of California produced oranges from $150 to $200 per acre more than in the good old days of long ago. Not so very long ago, either, though from present indications the long ago will be still longer before material relief is afforded. The western railroads have made fine showing of a reduction which will amount to a few cents per acre, but this offer was conditional upon acceptance by the eastern roads. Presumably the wink was given to the eastern roads and they politely declined to favor those western citrus growers.

* * *

The citrus league is not entirely content with present conditions and is again appealing to the interstate commerce commission for relief. It must ultimately be secured, but the long, long months of waiting are most disheartening to the grower whose funds are all going where the major part of the funds raised by the United States government is going—to support the railroads.

* * *

In acknowledging very material help in the gathering of the great fund of information on fighting of pests which was given in our issue of September 24 and continued in this issue we failed to mention one whose suggestions were used and added much to the completeness of these two numbers. A. O. Larson, assistant entomologist in investigations as to pests infesting truck crops of California, with the station located at Alhambra, assisted in revision of formulas and suggestions as to the handling of crop pests.

SECRETARY WALLACE ENDORSES FIRE PREVENTION DAY

National Fire Prevention Day is to be observed October 10.

Its object is to call attention to the vast annual loss by fires which might have been prevented, and to emphasize the necessity of safeguards against future fires. The Nation's total fire loss is estimated at 15,000 lives and $500,000,000 in property each year.

According to the statistics of the National Board of Fire Underwriters, there were 38,266 fires on farms in 1918 and the estimated loss was $18,166,710. That means that 38,266 rural families in 1918 suffered loss in degrees varying from slight damage to the loss of home, livestock and, in many cases, human life.

Farmers, and all persons in rural communities, well may join in the observance of fire prevention day, both individually and in public gatherings, such as schools, churches and farm organizations.

HENRY C. WALLACE,
Secretary of Agriculture.

ANNUAL ROLL CALL

The Red Cross announces its fifth annual roll call which will be held November 11-24. This will be a campaign for new members and for renewal of memberships already carried. The Red Cross declares that its opportunities for relieving suffering are almost as great now as during the war. In fact, the war is hardly ended in respect to Red Cross service.

WALTER HUGH FLEET

Walter Hugh Fleet, for many years manager of the Sespe Ranch at Fillmore, Ventura County, died in Los Angeles, September 23. Mr. Fleet was not only manager of the great lemon grove but made an intensive study of lemon culture and many other problems confronting managers of large producing properties. These lessons he has not only used in his own business but has at many of the citrus institutes and other conventions given of his knowledge for the information of others. Mr. Fleet was a native of Virginia but has lived in California for nearly 30 years. His pioneer efforts and investigations along cultural lines and his sterling worth and integrity won for him the respect and love of his business associates and others engaged in California productive industry.

DEVELOP THE POWER

The attitude of Californians has materially changed toward the development of our hydroelectric power possibilities. But a few weeks ago charges of "power grabbing" were freely passed back and forth. The effort seemed to be largely to increase the antagonistic spirit, in other words, a manifestation of clenched fists and the shouting of "You shan't have it." The grabbing spirit has not entirely subsided, but there is more "Let us get together and develop the state's resources and use them for the benefit of all." There are certain large interests which are going to secure the privilege of making these great developments to the extreme limit, and there is where cooperation on the part of "We, the people," must be secured.

One great step in this direction was taken last week at Santa Monica at the convention of the League of California Municipalities when, amidst wildest enthusism the delegates to a man passed a resolution endorsing the proposed amendment to the California constitution enabling the people to unite in developing and conserving her water and power.

We noted last week the complete change of front of farm bureaus which were formerly placed on record as opposed to public development and ownership of water and power. That action, with this unanimous vote of the League, is a most hopeful sign. Many counties are now getting into line with organizations whose sole purpose will be the encouragement of this public ownership and distribution campaign.

MARKETING

There are many long questions connected with the question of marketing products which must traverse 3,000 miles of desert and of plain before they reach the greater consuming market. Transportation, direct handling agencies and other considerations are up for decision. The citrus grower, the walnut, the raisin, the prune and many other cooperators have settled these questions, at least partly to their own satisfaction and with a great measure of success. The bean growers, the almond, the canned and dried fruit growers have more of a question confronting them than have the older associations which have arrived. To be sure, these associations have been confronted by problems other than transportation and marketing. Especially is this true with the bean and almond men who have not only had to compete with established marketing systems but have been compelled to market their products alongside of those grown by coolie labor of Asia or underpaid labor of Mediterranean countries. Some of the canned fruit people arranged some years ago with a large packing concern of the East, a concern which handles many products but had no canned fruit. While the wisdom of the combination of cooperators with the large trust was questioned by many the immediate results were very satisfactory to the producer. Through federal regulations in effect decreeing that meat packers should not handle groceries or other side products the arrangement was necessarily terminated, and California cooperators are suffering. With cooperators handling only a few hundreds of carloads of canned goods it seems impossible to create a big marketing machine at a low enough cost to let the grower by with his fair proportion of the return. Then how may the machinery of marketing be created which will help cooperative cannery people to dispose of their products? The cooperators so far have answered: "We do not know," and are appealing to Attorney General Dougherty to consent to a modification of the decree which cancelled the arrangement through cooperators and packing concerns. This appeal is concerned in no way with the packer control bill now before congress, but simply asks the federal courts for temporary relief

California Cultivator

Vol. LVII, No. 15 | Los Angeles, October 8, 1921 | One Dollar Yearly

Annual of Los Angeles County Farm Bureau

THE Los Angeles County Farm Bureau held an all-day convention and picnic at Ganesha Park, Pomona. It appeared there were acres of autos in attendance, and the crowd under the trees and in front of the bandstand showed that most of the automobiles had emptied their loads of farm bureau people. The principal feature of the day was the awarding or presenting of the silver cups which have been won by members of the dairy cow competition. This competition has covered the year from July 1, 1920. The winners are:

Class A—1, Fred Hartsook, 33 cows tested, average fat per cow, 475.4 pounds. 2, Earl Graham, 34 cows, 470.9 pounds.

Class B—1. E. L. White, 77 cows, average fat, 399.0. 2, L. A. County Farm, 105 cows, 372.1.

Class C—1, H. Michel, 194 cows, 330.5. 2, Adohr Stock Farms, 283 cows, 320.2.

Class D—1, Brant Rancho, 571.7 pounds fat. 2, Brant, 543.6.

Class DD—1, F. F. Pellissier, 496.3 pounds fat. 2, L. A. Conuty, 476.2.

Class E—1, Graham, 739. 2, Hartsook, 696.1.

Class EE—1, Graham, 740.0. 2, Pelissier, 714.6.

Class F—1, Graham, 658.1. 2, Hartsook, 644.7.

Class G—1, L. A. County, 637.8. (cows milked three times daily). 2, Burr Farm, 647.6 (cows milked four times daily.)

Class H—Pellissier, 638.2 pounds. 2, Pellissier, 553.1.

In addition, winners of the Southern California Milk Producers Association awards only to their own members were as follows:

Class A—Highest herd average under 60 pounds, Hartsook.

Class B—Highest herd average 60-150 cows, Burr Farm.

Class C—Highest herd average over 150 pounds, no herd competing.

Class D—Highest producing pure bred heifer, first calving, Burr Farm.

Class DD—Highest producing herd heifer grade, first calving, Ira S. Hostettler.

Class E—Highest producing pure bred cow, Graham.

Class EE—Highest producing grade cows, Graham.

Class F—Best five cows in Class A herds, Graham.

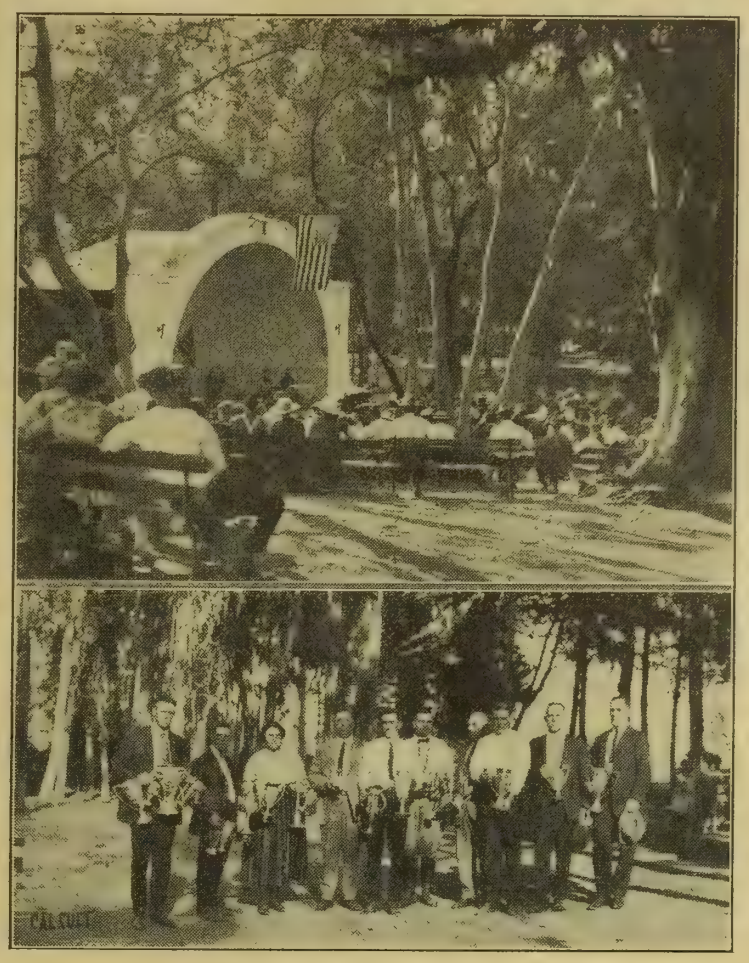
Class G—Best five cows in Class B herds, Burr.

Class H—Best five cows in Class C, no herds competing.

From report on the work of the dairymen's department we quote:

"It is now three and a half years since the organization of the Los Angeles County Cow Testing Association under the auspices of this farm bureau. As you know, the function of such an association is to furnish the member dairymen with accurate figures on the monthly milk and butterfat production of each cow. This is done by sending an association employe to each ranch once a month to weigh and record the milk produced and test it by the Babcock method for the content of butterfat. These records are extremely useful, in fact indispensable, if the man is to continue in the dairy business under present day conditions. The average dairy cow in the United States does not produce enough fat in a year to pay for her feed under

(Continued on Pagt 371.)



A Typical California Farm Bureau Meeting

Upper shows the audience in front of bandstand listening to closing of the program. One of the last features was the awarding of silver cups for which dairymen of the county have been striving during the past year. The lower engraving shows the winners after they secured possession of the cups.

San Diego County Farm Bureau Fair

By Robert R. McLean

THE two outstanding features of the Third Annual San Diego County Farm Bureau Fair were better and more comprehensive exhibits than have been made in previous years by the farm centers and home departments, and a much larger showing of livestock, cattle, horses, and poultry.

This latter feature is probably the most encouraging and hopeful indication of better days ahead for agriculture. In many fruit sections of California it has been apparent for years that the livestock industry was not being rated at its true value, but signs have not been lacking for many months of a revival of interest. A necessary supplement to fruit growing as it is, as well as an original source of wealth, the development of the livestock industry all over the state should be encouraged by everyone interested in permanent agriculture.

The farm bureau exhibits were many and varied. Notwithstanding the fact that the rainfall for this section has been far below normal for two years now, displays from dry farming communities far surpassed anything yet undertaken by these farm centers. This can be directly accounted for by better methods of tillage, proper rotation of crops, heavier fertilization, selection of seeds and conservation of water, due in larger part to the educational stimulus of the farm bureau movement.

Perhaps the most remarkable strictly dry farming showing was made by the Jamul center, it being awarded fourth prize in the community exhibit competition. Japatul center, also a dry farming section, but with a slightly heavier annual rainfall, was given first prize. This mountain community was organized into a farm center some two years ago, making its first exhibit last year and winning fourth place at that time. This year it was awarded 98 points out of a possible 100, winning over long established irrigated sections. This was possible only because of the united purpose of the center, every family in the community being actively connected with the farm bureau and home department. Exactly 247 varieties of fruits, vegetables and other soil products were shown by this center.

The Prize Winner at San Diego County Fair

The diversity of productions of Japatul Valley is abundantly shown in this photograph.

Poway, famous for its grapes and peaches, won second honors and again was given a perfect score for quality. El Cajon, first last year, took third, and the new center of Otay, fifth. Among the horticultural novelties shown by El Cajon were an Egyptian melon from the near East, the flesh of which is white, and a mammoth European "Potiron" squash.

The new farm bureaus of Valley Center, Bear Valley and Otay made creditable exhibits, featuring fruits and vegetables especially suitable to their respective sections. There are 21 families in the Bear Valley district and the number of members of the farm bureau and home department totals 35.

Fallbrook center featured many varieties of corn, as well as grain and sweet sorghums, fruits, beans and honey; Escondido, citrus fruits, grains, deciduous fruits and grapes; El Cajon, rare fruits, grapes, deciduous and citrus fruits; Potrero, apples, peaches, plums and canned fruits; Ramona, eggs and deciduous fruits; Encinitas-Olivenhain, beans, fruits and honey; Lakeside, many kinds of corn, other sorghums, grains, fruits and eggs; Oceanside Union, fruits, vegetables and beans.

The Chula Vista district, although not organized into a farm bureau, made an exceedingly interesting display of citrus and sub-tropical fruits, many of the latter being from the U. S. D. A. experiment station located there. Among those noted were the pepino, sometimes called the melon pear (solanum muricatum), white sapotes, avocados, mountain papayas (carica candamarcenses) from the mountains of Colombia and Ecuador, Natal plums (carissa grandiflora) and Orinoco bananas. One clump of this latter fruit bore six bunches at the station last year.

Illustrating the individual interest taken by some members of the farm bureau in their community exhibits, C. Nelson of Potrero entered 31 kinds of canned fruits and 64 varieties of fresh fruits and vegetables, J. S. Scott of El Cajon, 55 varieties, and O. Dannesboe of Carlsbad, 45 varieties of vegetables. In the general horticultural exhibit J.

(Continued on Page 370.)

Agricultural News Notes of the Pacific Coast

Northern California

The rice crop in Glenn County is moving into warehouses. Average production is good.

The Santa Rita Stock Farm west of Livermore has been sold to A. V. Mendenhall of Oakland.

Because of the county fair at Red Bluff no farm center meetings were held last week in Tehama County.

The poultry demonstration plant at Hayward is in full swing. It is in charge of the Alameda County farm bureau.

The Alameda County Farm Bureau Exchange will reduce admission fee from $50 to $25 "in justice to the small land owner."

Pleasanton, Alameda County, will harvest some 6,000 tons of sugar beets. They are sent to the factory at Spreckels.

The annual convention of agricultural instructors of Northern California will be held at Colusa at an early date to be announced soon.

Demonstrations of care and handling of bees have been given in different sections of Placer County by Prof. Coleman of the state university.

Secretary Merry of the Pacific Rice Growers Association says that his association has not applied to the war finance corporation for marketing funds.

Glenn County farm bureau center meetings: Directors, Willows, October 8; Codora, 10; Orland, 12; Jacinto, 14; Capay, 19; Plaza, 21; Grapevine, 26; Larkin, 28.

At a meeting of the Farmers Protective Association held at Livermore, Alameda County, last week, it was decided to establish a meat market there in endeavor to lower retail costs.

Directors of the Placer County farm bureau held their October 1 meeting on the R. S. Seydel ranch at Lincoln. Special discussion of fruit growers convention at Auburn, October 11-12.

Receipts from the federal government from grazing permits and sale of timber amount to $17,806.25 for Plumas County; $14,119.03 for Tuolumne; $11,479.30 for Eldorado; $109.44 for Colusa.

The Alameda County farm bureau has formally severed connection with "so-called farmers cooperative market maintained by W. S. Mooney on the corner of Telegraph Avenue and 19th Street in Oakland."

Last spring the Placer County chamber of commerce inaugurated a plan to replace Japanese with white lessees on fruit lands. To date 700 white families have replaced Jap tenants, according to report of Secretary Pottenger of the chamber.

The state college of agriculture will hold again this year a fruit show. It will be at Berkeley, November 17-19. Fruit growers are asked to exhibit. This will be made an educational feature with lectures and demonstrations upon deciduous fruit growing.

State Market Director Maddox called a meeting of rice growers of the Colusa district, September 26, to talk over cooperative marketing of their product. The growers failed to answer call but Mr. Maddox reports that differences have been smoothed out and probably no independent association will be attempted.

Central California

Inyo County staged a successful fair at Bishop, October 4, 5 and 6.

Fresno County fair just closed had a large and representative livestock exhibit.

Stanislaus County farm bureau is organizing a new cow testing department.

A home department has been organized in the Stanislaus County farm bureau.

Stanislaus County expects to enroll 400 members in its home demonstration department.

Directors of the Modesto irrigation district have approved plans for concrete lining of many canals.

Showers in the San Joaquin Valley the middle of September had no injurious effect on raisin crops.

The Stanislaus County farm bureau will soon start a campaign to increase its membership from 1,200 to 2,000.

The Harvest Festival at Waterford, Stanislaus County, September 29-October 1, brought out a fine exhibition of poultry.

San Joaquin Valley rice growers are informed that all their 1920 crop has been disposed of by the Pacific Rice Growers.

The Spreckels, Monterey County, sugar factory started its season's run September 17 and expects to run through January.

Scotts Valley, Santa Cruz County, held an old fashioned country fair and harvest festival September 22-24. Nine farm centers united in the fair.

Santa Clara County ranchers who established the farmers free markets in San Francisco are satisfied with the business they have transacted there.

A harvest festival and community fair was held at Waterford, Stanislaus County, September 29 to October 1. There were more than 200 entries of poultry.

The Tulare County horticultural commission distributed during August in its rodent fight 3,240 pounds of poison, 4,550 pounds of carbon, 25,100 jute balls.

The section of Stanislaus County west of the San Joaquin campaigned against the ground squirrels last week. This winter a carbon drive will follow the fall poisoning.

A carload of Blackeye beans was shipped from Stanislaus early in August to Memphis, Tennessee. Memphis is said to be the largest Blackeye bean market in the United States.

Farm Adviser Conner of Tulare County is visiting all the schools in the county, talking to pupils on organization of calf, pig and poultry clubs. Work of organization will be taken up about a month later.

The Associated Raisin Company has leased the warehouse of the alfalfa mills at Kerman and will use as a receiving plant. This, with the packing plant at Biola, it is hoped will relieve congestion in Kerman deliveries.

Commissioner Waite of Imperial County referring to some real estate boosting of the money to be made in Imperial Valley vineyards says "The truth is good enough. As a matter of fact the vineyards of the valley are averaging $400 an acre."

Southern California

An apple packing plant has been established in Redlands.

A state dairy inspector has been located in Imperial Valley.

Palo Verde Valley cotton growers are receiving $13 per ton for cotton seed.

A horticultural inspector has been located at Victorville, San Bernardino County.

Carpinteria bean growers have appreciated the warm weather at threshing time.

Citrus growers of Covina met last Tuesday to talk over shipment of their fruits via Panama Canal.

Sales of Delicious apples are reported from Yucaipa Valley at $2.75 for Fancy and $2.50 for B grade.

A Santa Ana orange grower reported to the sheriff's office theft of fruit from 100 of his Valencia trees.

The El Centro chamber of commerce is planning for a fair to be held some time the latter part of October.

A. V. Buell of Carpinteria brought home from the San Fernando fair 22 ribbons on nine head of Hampshires.

The Rialto Heights Citrus Association made a season's average of $2.78 per packed box including all sizes and grades.

Cotton pickers in the Imperial Valley are being paid 80 cents a hundred, and below the Mexican border, 40 to 60 cents.

The annual convention of the California Fruit Growers and Farmers will be held at Exposition Park, Los Angeles, October 24-26.

Picking of "Delicious" apples in Yucaipa Valley shows big percentage of large sizes. Opening prices on eastern markets, $3.75 to $5 per box.

Water transportation for fruits will be one of the big questions discussed at the farmers and fruit growers convention at Los Angeles, October 24-26.

The beekeepers department of the Orange County farm bureau had a big showing at the county fair held at Huntington Beach September 28-October 1.

Lettuce growers of the Imperial Valley have been notified that the freight rate to Chicago will be $1.45 instead of $1.66½; to Missouri river points, $1.39 instead of $1.59.

Imperial Valley irrigators are still investigating the Boulder Canyon dam and all-American canal project in connection with the various hyrdo-electric development proposals.

Ventura County mourns the death of W. H. Fleet, manager of Rancho Sespe. Mr. Fleet was for 33 years a resident of the county and engaged in orchard development.

C. W. Brown of Calipatria, chairman of the duck control committee of the Imperial County farm bureau, has asked federal aid to combat the nuisance of the myriads of ducks in the valley each winter.

The annual meeting of the county horticultural commissioners will be held in Los Angeles, October 27-28, in conjunction with the Fruit Growers and Farmers Convention, which will be in session October 24-26.

Showers of the past week have proved efficient fire fighters, much to the relief of the men who were combating the flames in the foothills and mountains and of the property owners whose farms and future water supply was endangered.

The Coast and General

New Mexico expects a bumper crop of corn.

Yakima, Washington, began shipping Jonathans last week.

The cannery at Cottage Grove, Oregon, has a weekly payroll of $2,800.

The Mount Vernon district of Texas reports sweet potato crop short.

The Yakima Valley, Washington, will ship out 200 carloads of onions.

Phoenix reports more than 2,000 bales of Arizona Pima cotton sold during the last two weeks.

Arizona has two cow testing associations and it is expected several others will be organized the coming fall.

For the marketing of the Arizona cotton crop the War Finance Corporation has extended a credit of $1,200,000.

The honey crop of Western Washington will be 50 per cent short this year on account of the ravages of foul brood.

Arizona cattle men expect 1922 to be a prosperous year because heavy rains have assured the best of pasture and feed.

Reduction of 20 per cent in freight rates on livestock, except horses and mules, effective September 20 to December 31.

The Pacific Mail Co.'s steamship, Golden Gate, carried 600 Filipinos to the Hawaiian Islands to help in relieving labor shortage.

The Wenatchee, Washington, apple season is a week earlier than last year. The first carload of King Davids was sent to New York September 8.

Clarke and Skamania Counties of Oregon will cooperate in putting on an exhibit at the National Grange convention in Portland in November.

A large number of feeder cattle are being brought from Montana to the Yakima Valley, Washington, because of the large supply of cheap feed.

The 58th annual convention of the American Veterinary Medical Association was held at Denver September 5-10, with 500 delegates attending.

The Yakima Valley is the largest of the potato growing districts of Oregon and Washington. This year's crop is estimated at between 3500 and 4500 cars.

Washington cranberry growers are holding out for $5 per box shipping point. With light Eastern production they feel that their fruit should bring good prices.

Stock of all kinds are in excellent condition and roundups are in progress in various parts of Arizona where animals are being gathered for veal and fat range cattle.

Most of the oats and wheat in northern Arizona are in shock and have been put up in splendid condition. All crops in that section are much above the average as to quality and quantity.

Eighty carloads of fruit daily were shipped out from the Yakima Valley of Washington during the month of August. One week's shipments during the pear season amounted to 708 carloads.

Secretary of the Interior Fall has ruled that no more leases on the Yakima Indian reservation in Washington will be issued to Japanese. Effort has been made to secure this ruling for two years.

As Others See Us

By Geo. H. Woolley, Jr.

CALIFORNIA'S cultural conditions are different. The soils seem to call for handling different from that of eastern soils. The climate calls for deeper culture that the rains, which are all too light, many penetrate as deeply as possible and then be conserved as carefully as possible; so we plow deeper than any other sections of this country, and our orchardists, feeling that plowing is not sufficient, bring the sub-soiler into use. Therefore, some eastern manufacturers of tractors have asked. "What ails California? What does she need? Why are those heavy weight implements and tools required?"

To secure answers to their own satisfaction they have sent experts to this state, some of whom have spent months studying and observing. One of these men, Geo. H. Woolley, Jr., of the Hyatt Roller Bearing Co., spent three months here interviewing tractor dealers and farmers who had tested out under varying conditions power farming machinery. Mr. Woolley makes report from which we are permitted to quote.

* * *

In the evolution of California agriculture the tractor has played an important role. Confronted with wide expanses of prairie lands, unusual climatic conditions and varying soil textures, the limitations of animal power were early recognized. Tractors have been in use on the ranches of California for over 15 years. In no other section of the country has the tractor gained a stronger foothold. In no other section is it more closely dovetailed into the routine of farm work.

During the rush season it is quite customary for the larger operators to run three crews in eight hour shifts, and they not only want but demand that a tractor work 24 hours a day, day in and day out, until the rush season is over. Ordinarily the California rancher will get more work out of a tractor in one season than would result from several years' use in other agricultural sections. Hence, a study of the farm machinery industry in California is not only interesting within itself, but throws some light on what may be expected in the way of future developments elsewhere.

Diversity of Uses

In California the use of tractors is by no means limited to plowing and harvesting. They are used more extensively for belt work than in other sections. Furthermore, their use is not confined to conventional ranch operations. Many machines are sold for building roads, levees and ditches. The logging camps of northern California offer a big market for the larger machines.

The original California ranches were extremely large. In many cases the fields were measured in square miles rather than acres. The large track type tractor was first developed to handle these wide expanses of rough virgin land. The successful operations of this type of machine gained for it a strong foothold, and for a number of years the track type tractor has dominated power farming on the Coast.

Following the pioneer days, ranches became smaller and were more intensively cultivated. Small tractors of the track type have been developed to meet these new conditions and, as the acreage per ranch becomes less, the wheel tractor is coming into more general favor.

Market For All Types

With a few extra appliances wheel tractors are now being used on ranches where in the past it had been thought that nothing but the track type could work successfully. Traction is the big factor, and some of the wheel machines are gaining effective traction by the use of two or more extension rims. This practice seems to be quite necessary when working on the light soil.

There always will be a big demand for the large track type. Many thousands of acres are controlled by syndicates who use this kind of machine for all heavy work, such as plowing, harrowing, disking, harvesting, etc. An excellent example of the large scale operations in practice on the Coast is afforded by the mammoth combined harvester. With this outfit one acre of wheat is cut, threshed, cleaned and bagged, ready for the market, every six minutes. However, even the largest operators use wheel machines, especially for seeding and light hauling around the ranch.

Soil Conditions

Many kinds of soil are found in California. In fact there are from six to ten distinctly different soils on the average ranch. In a half mile furrow, I had the opportunity of observing soil variations including white ash, blow sand, red clay, adobe, chocolate dry bog and Bermuda sod. Obviously, with such frequent soil variations, it is practically impossible to get an even job of plowing with horses. On the other hand, with a farm tractor of sufficient power, the furrow may be turned at an even depth through the hard spots without readjusting the plow. Underlying all such soils is a hard red clay sub-soil which is surprisingly uniform.

Before the advent of power farming, subsoiling was done with dynamite, because it was difficult to do a satisfactory job when using horses. The use of dynamite usually left a hard packed wall. This, in itself, was bad enough, not to mention the danger element. The practice of subsoiling is now coming into greater favor because it has been demonstrated that such work can be done more economically and effectively by the use of the tractor.

To meet the demands of the Pacific Coast ranchers special implements such as combined harvesters, orchard plows and disk sand sub-soilers have been developed, but in most cases the implements used in other parts of the country give satisfaction in the West.

Diversification of Crops

In former days wheat was the one big stable crop. Today it is hard to name anything that is not grown in California, and in no other state are the marketing channels so highly and effectively organized. Diversified crops are the direct result of power farming, and they, in turn, have created a demand for all kinds and types of farm machinery. The farm tractor in some form or another has a sphere of usefulness in connection with each of these crops. Perhaps the crops that lend themselves most successfully to tractor operations are grains of all kinds, fruits, beets, hay, cotton and beans.

Tractor in Rice Fields

A tractor is particularly useful in the rice fields. The year 1912 saw the first introduction of rice growing in California. The year 1919 showed California to be the second state in the production of rice. Land which five years ago was considered worthless is now valued at from three to four hundred dollars per acre. One crop of rice often improves the soil so that a good crop of barley, broom corn, or other crops may be raised.

A successful rice crop depends largely on good ditches and levees, and the loss of water from broken levees greatly reduces the yield per acre, sometimes entirely wiping out the profit from the crop. Furthermore it is important that the leveling be well done. High spots receiving insufficient water will not raise any rice. Low spots are impossible to drain at harvest time.

It is essential that rice be put in at just the right season and the time for harvesting is very limited due to the fact that the winter rains are apt to set in. Therefore it is essential that the implements used at harvest be strictly up-to-date and built to withstand the severe conditions imposed upon them. The loss of a very few hours may sometimes spell disaster.

The tractor also has its field of usefulness in waging war against the pests that prove so troublesome throughout this country. With the aid of a tractor the rancher can put in his wheat crop earlier than would otherwise be possible. Wheat sown at just the right time attains an early maturity and more readily withstands the attacks of the Hessian fly.

Cotton in California

Cotton is becoming one of the most important crops of Southern California. Fifteen years ago the yield was nothing. In 1920 the value of the crop will run something over $60,000,000. Last year there were under cultivation 250,000 acres. This year the acreage will be materially increased. It is quite essential that cotton be cultivated several times during the season, and for this work the motor cultivator is coming into extensive use.

The boll weevil has not as yet made its appearance, nevertheless it behooves the rancher to be constantly on guard for this pest, and a very effective precaution is to turn the stalks under as soon after harvesting as possible. This can best be accomplished by the use of the tractor.

Garden Tractor Market

The vast irrigation system which is spreading through the state is transforming unproductive land into truck gardens. Many of these ranches are large enough to well afford a medium size tractor of either the track type or the wheel type. Even the smallest truck farms offer a ready market for garden tractors, which are becoming very popular.

Orchard Work

Tractors are used extensively in orchard work. This is a strong argument in favor of power farming economy. No ranchers keep more accurate cost accounts than do the California orchardists, nor is there any other class of producers who use more tractors to the acres cultivated.

The Business of Farming

California agriculture has been reduced to a scientific business basis. A tractor is purchased as an investment. It has been proved a necessity. The California rancher is sold on the power farming idea. At the present time service is the prime consideration on the part of the buyer.

Most of the ranchers who operate two or more tractors have at least one repair man whose sole purpose is to keep the tractors in running order. Ordinarily the tractioneer is not expected or allowed to make mechanical adjustments or repairs. It is recognized that his qualifications do not necessarily make him a repair man. When a tractor shows signs of needing attention, a competent repair man is despatched to do the work.

All other things being equal, the rancher will buy of the dealer who is best fitted to render prompt and efficient service. This does not mean that he expects something for nothing, but he does insist that sufficient parts be kept in stock to take care of him in any emergency.

Need for Educational Work

A better understanding of the tractor on the part of the rancher is highly desirable. Above all things the tractor must be kept running. Service in the form of simple instruction at the time of purchase is more effective than repair work at a later date. I have been told by manufacturers, dealers and ranchers alike that 80 per cent of the repair service could be eliminated if the dealer would thoroughly instruct the rancher regarding the care and operation of the different parts of the machine.

The tractor manufacturer who seeks a permanent market on the Pacific Coast should guard against extravagant advertising claims. Often it has been found that a tractor advertised to pull three plows has been unable to pull more than two under the conditions peculiar to this territory. The dealer should remember that the test upon which such ratings are based were made in other sections of the country where the draft per bottom does not run so high.

The rancher thinks in terms of number of bottoms. Any effort on the part of the manufacturer to rate his tractor accordingly is likely to result in a misunderstanding. Therefore the only safe procedure is to give horsepower only, and it is up to the dealer to interpret this horsepower to the rancher in terms of number of bottoms, basing his interpretation on the actual soil conditions to be encountered. The more successful dealers are underselling their tractors rather than overselling them.

Labor Situation

The labor situation in the West seems to be about the same as it is in other parts of the country. While wages are high, often amounting to $7 a day, nevertheless it is difficult to secure help. In order to operate a ranch profitably the use of power farming equipment is imperative. To secure and hold ranch labor the living conditions must be attractive. The ranchers operating on a large scale are giving this subject much consideration. Besides motorizing their ranches, they are building modern houses fitted with running water, shower baths, electric lights and other conveniences of the city. The floating ranch laborer of yesterday, the man who carried his roll on his back, is rapidly becoming a thing of the past. He finds it more profitable to settle down than to move from place to place.

California as Future Market

The aggressiveness of the Pacific Coast rancher, the increasing shortage of labor, the improved irrigation systems and the tendency toward a still further diversification of crops, make this field one of the most attractive markets in the world for the sale of modern power farming equipment. The dealer who is alive to the potential possibilities and who is keeping abreast of the rapid strides of power farming is dominating tractor distribution in California. The rancher wants the very best equipment and he is willing to pay the price.

About 90 per cent of the farm machinery business is conducted on a cash basis. Nevertheless, the banks do not hesitate to discount the ranchers' paper. They are liberally inclined toward the ranch machinery industry. This, I believe, is a reflection of the businesslike methods under which agriculture is conducted. When a man is in a position to show accurate financial statements he has no trouble in securing the credit to which he is entitled.

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PEST FIGHTING SUGGESTIONS

(Continued from Cover Page.)

to another is through shipments of nursery stock, tubers, and bulbs. No nursery stock should be accepted until it has been found free from nematodes, and, if suspected of having come from infested districts, it should be planted on a separate part of the farm until upon examination later it is found to be free from the trouble. In certain irrigated districts of California and Nevada seed potatoes have been chiefly instrumental in introducing and spreading the worm. In attempting to control this disease it is absolutely essential to plant only unifested tubers.

No trees, plant or potatoes should be set out until they have been examined by a county horticultural inspector.

Nematodes may also be carried from field to field by such agencies as running water and the soil which clings to agricultural implements, the feet of men, and the hoofs of animals.

The disease may be eliminated in greenhouses and seed beds when they are not being used by the application of steam under high pressure or by the introduction of uninfested soil into clean, whitewashed benches.

BIOLOGICAL CONTROL OF INSECTS

Alexander Craw, Albert Koebele, George Compere, Harry Smith and some others who have been for a long time engaged in securing and encouraging the insects that destroy insects, have not the honor of being the very first ones on the game. These men have done noble service, and California and the world honors them, and this is not meant in any way to detract from the value of the service they have rendered, but we now note in "Science" of August 15, 1921, in a report made by Paul Popenoe:

"Control of destructive insects by the introduction of their natural enemies has become an important technique during the last generation. But if competent observers are to be trusted the southern Arabs employed the same method more than 150 years ago in the culture of the date palm.

"In his 'Relation d'un Voyage dans l'Yemen' (Paris, 1880, p. 155), P. E. Botta says:

"I was able to verify the singular fact previously observed by Forskal, that the date palms in Yemen are attacked by a species of ant which would cause them to perish, if each year the growers did not bring from the mountains and fasten in the tops of the palms branches of a tree that I did not recognize, which contain the nests of another species of ant which destroys that of the date palm."

"P. Forskal was the naturalist of C. Niebuhr's expedition; his work was published posthumously in 1775. I have not seen his account to which Botta refers.

"It would be interesting to know whether the history of economic entomology furnishes any earlier record of the 'biological method' of pest control."

GRAPE PHYLLOXERA

In Bulletin No. 903 of the United States department of agriculture, W. M. Davidson and R. L. Nougaret have written a complete 128-page history of this grape pest, Phylloxera vitifoliat, in California, its injuries to the industry, etc., but remedial measurements have been left as the subject of another bulletin.

The pest was introduced into California about 1858 on vines imported by settlers from the eastern part of the United States, where it is a native, or about the time it reached France, where the first evidence of its activity was vaguely noted in 1862. It has since spread throughout most of the grape districts of California wherever conditions have been suited for it, but has never assumed such disastrous proportions as it did during the first years of its ravages in France. It is estimated that since its appearance in California, or during a period of 60 years, it has destroyed about 75,000 acres of grapes. It has in many cases been distributed through the agency of infested rooted vines imported into uninfested districts or vineyards, while in other cases it has been carried on vineyard material. Its modified life cycle in California, that is, sterility of the winged form, coupled with topographic barriers, consisting of mountain chains and dividing valleys, has prevented the rapid distribution in the state which took place in the vineyard districts of France.

Vines attacked when young, before their rooting systems have become established, will succumb more rapidly than those infested at a later age. The first indication of its presence in a vineyard occurs in the form of one or more stunted vines and in the premature yellowing of the foliage. Gradually more and more of the surrounding vines are affected, and those first infested become very much weakened or die outright. Following the initial infestation of a vine under favorable conditions for phylloxera, the pest multiplies rapidly and within two or three years increases its range to involve the entire root system. The phylloxera which settle on the growing rootlets form fleshy lesions or swellings, termed nodosities. In a great majority of instances further apical growth of the rootlet is stopped, and the rootlet ceases to supply nourishment to the vine. Other phylloxerae settle on the older roots, and in most cases cause swellings termed tuberosities, which vary in size, the majority being about 0.2 in. in diameter. The bark of the root often cracks longitudinally, and a chain of swellings arises from phylloxera punctures. So long as these swellings remain fresh, the health of the vine is not much impaired, but as soon as they decay the vine is injured. When they decay in numbers the roots are frequently destroyed, causing first the stunting and then the death of the vine.

"The diffusion of the phylloxera is effected in nature by the wandering newly hatched larvae of the radicicoles during summer and autumn. These pass from vine to vine, either on the surface of the soil or through subterranean cracks or pathways. They may also be borne by the wind or on vineyard material, such as picking boxes. Probably water is responsible for some diffusion in hilly or irrigated vineyards, and cultivating instruments, by picking up pieces of infested root, may effect fresh infestations. The phylloxera is easily introduced into a vineyard or section by the practice of planting infested rooted vines to make up for cuttings which did not succeed in previous years."

SAN DIEGO COUNTY FARM BUREAU FAIR

(Continued from Page 367.)

H. L. Vogt alone made 105 entries, winning 89 prizes, 33 being firsts, 32 seconds and 24 thirds.

The home department combined its exhibits this year, entering none on a competitive basis. The garment division of which Mrs. C. T. Ferguson is leader, the food preservation division, Mrs. Mary Gird Peters, leader, the house furnishing division, Mrs. Mary Le Stourgeon, leader, the hot school lunch division, Mrs. Ida Michenfelder, leader, all had unusual displays that attracted much interest. The food preservation division drew more than passing attention by its exhibit of home evaporated grapes, apples, figs, apricots, peaches, prunes, corn, green beans, peas, spinach, rhubarb and carrots.

The center of feminine interest, however, appeared to revolve about

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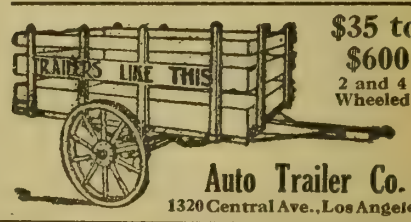

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the remarkable showing of garments prepared by the clothing division. Far be it from a mere man to adequately describe them, but here was a bewildering display of children's clothing, hats, dresses and underwear, women's clothing from inside out, including corsets and beautiful dresses made from dyed sugar and flour sacks, street suits and hats at least one season ahead of hats bought in the shops. Miss Fleda E. Smith, home demonstration agent is authority for the statement that the women of the San Diego County farm centers wore hats last season that are just now being bought by their less fortunate city sisters, and the patterns of dresses they made last spring are but now finding their way into the city shops.

Worthy of special note in the livestock pens in the dairy class were the Guernseys from the Sycamore Ranch, San Marcos, San Dieguito Ranch, Ramona, Winsor Ranch, Bonita; Jerseys from Winsor Ranch and A. C. Whiting Ranch, Ramona; Holsteins from J. C. Broody Ranch, Palm City, and San Diego County Farm. In the beef class D. H. Ogden made an exceptional showing with his Herefords, winning 14 firsts, 2 seconds and 1 third.

Rambouillet, Shropshine and Cotswold sheep prizes were very largely taken by C. S. Bond of San Diego.

The Glenwood Ranch, Mission Valley, was awarded six first prizes, four seconds and four special prizes on Poland China hogs. Durocs were shown by the Winsor Ranch, Bonita, and a long list of prizes taken by their entrants; Berkshires and Durocs were exhibited by the San Diego County Farm and Tamworths by the Monte Vista Ranch, El Cajon.

Percherons entered by the Monte Vista Ranch received special attention from the throngs of visitors.

The attendance was, approximately, 45,000, about the same as last year, but the fair itself was an improvement over those of previous years, much better arrangements being made for the housing and showing of stock.

A distinct advance was made this year in enlisting the interest and support of the public schools, both in the matter of exhibits and contests among the pupils. The First National Bank of San Diego through its farm service department originated a "Use More Milk Poster Contest" among the school children, designed to bring out in poster form advantages to be gained by children by the use of milk. Although only a little over a week was available in which to prepare these posters, 550 were turned in from every part of the county and made an unusual showing that attracted much attention.

ANNUAL OF LOS ANGELES COUNTY FARM BUREAU

(Continued from Page 367.)

present conditions in this county. The average cow in California is better but because of the high cost of land, improvements and labor, her production would not suffice to keep the dairyman's balance out of the red. So it is necessary to find these low producers and eliminate them to insure the permanence of our milk supply, for if dairymen cannot be sure of profit they will not continue to be dairymen but will turn their capital and energy elsewhere. These records help the herdsman to eliminate his boarder cows, improve the efficiency of his herd and, by pointing out his heavy and consistent producers, indicate the lines from which he should propagate his future herd. They also enable him to see clearly the results of variations in the feed and govern himself accordingly.

"To furnish permanent records of this work the records of the monthly tests on each cow are entered and signed by the tester in a loose leaf book, each leaf being made in the form of a certificate of production with a place for a diagram of color markings for identification of the animal. It has been proven that such records have a very substantial value in selling the stock, the certificate being transferred to the new owner as absolute proof of the quality of his purchase. This form of record which was devised for our own use has proven so well suited to the purpose that it is being widely copied throughout this state and elsewhere.

"As the cow testing work increased in scope and importance we felt that other questions affecting the permanency and profit of the dairy industry should be considered by our members and the organization of the dairy department of the farm bureau was completed April 24, 1920, assuming the activities of the old association. Since that time the growth of the association has been very rapid. In the original organization one tester was employed, about 900 cows being under test. We now have three men on full time in different districts testing 48 herds containing over 3300 cows each month, nearly four times the original number. In May 1918 the average of all cows tested was 28.5 pounds fat each. Three years later in May 1921 the average production was 39.3 pounds. This is an increase of 10.8 pounds of butterfat per cow tested or nearly 38 per cent which means that by advanced methods the members of this association are producing approximately $36,000 per month or $400,000 per year more than with the same number of head at the time this work was begun. During the month of May, just three years from the start of our organization, there were 3378 cows tested which gave an average production of 981 pounds milk and 39.3 pounds fat per cow. Thirteen hundred of these cows made over 40 pounds fat apiece or 38.5 per cent of the total tested against averages of 5 to 15 per cent of 40 pound cows in other associations.

"Probably the most vital and immediate question is local control of bovine tuberculosis which was made the object of a great deal of study and discussion during the past year. In collaboration with the Milk Producers Association, the Southern California Holstein-Friesian Association and the local veterinarians society a committee of this department examined all sides of this question which is so important to both the producer and consumer of dairy products. The best method of attack on this problem seems to be through: Legal prevention of the shipment of tuberculous cattle into this county except when they are for immediate slaughter. Requirement that all cattle tested in this county and found to be tuberculous must be branded in a specified and conspicuous manner. Securing from distributors and consumers a differential price in favor of milk and cream produced in tuberculosis-free herds.

"This should prevent increase of number of tuberculous animals within the county, identify reactors now in the county for the buyers protection, and provide a real economic stimulus for the man who would not clean up his herd from other motives. An ordinance containing the first two provisions mentioned has been drafted, approved by the several organizations mentioned and presented to the board of supervisors, but has not yet been acted upon. We expect to continue this line of action until present unsatisfactory conditions are remedied."

Officers elected for the county farm bureau the coming year are: President, W. S. Rosecrans; first vice-president, Donald Graham; second vice-president, Mark Grimes; secretary, Dr. D. S. Fox, Pasadena; treasurer, Ralph McNees. Directors at large are: Volney H. Craig, Dr. George P. Clements, Robert H. Neely, Harry S. Bissell, Dr. J. H. Miller, Warren R. Schooner and director to state federation, J. B. Vaile.

PLACER FRUIT GROWERS CONVENTION

On October 11 and 12 the Placer County fruit growers will have a convention. Some of the best speakers in California will talk on various Placer County problems. Among them are Dr. J. C. Whitten who will talk on orchard management, long pruning in Placer County and injury to young orchard stock; Professor J. W. Nelson on soils and fertilizers; Professor Hendrickson on plum pollination; Prof. Ralph Smith on brown rot, sour sap; G. H. Hecke on the state department of agriculture and its relation to Placer County; I. J. Condit, standardization and naming of persimmon varieties; Professor E. O. Essig, peach worm control in Placer County; F. W. Read, standardization; Harry Smith, spraying; Gov. Wm. D. Stephens, agricultural legislation.

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Stormy weather or bad roads won't keep the children out of school when there's a Harley-Davidson on the farm. And this handiest of vehicles is cheaper than car fare, shoe leather, automobile or the "horse and buggy way".

A Harley-Davidson will serve the farmer and his family every day of the year, for years and years. For hurry-up trips to town, railroad station, creamery or neighboring farm—with the roomy sidecar full of luggage—a Harley-Davidson combines speed, comfort, economy and dependability. 50 miles for a dollar—including gasoline, oil and tires. You can't beat that for cheap mileage!

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Prices Down 25%! Model J. Now $365 (was $485) Similar reductions on all Models and sidecars

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When anyone is looking for a ranch home almost the first question that arises is the nature of the improvements. A place with a good ORCHARD INCOME is certain to sell first.

IMPROVE your vacant land by planting ROEDING'S TRUE TREES. Remember that the cost of a tree is not the only cost,—a good tree, like any other good article, is the cheapest in the long run.

We have a magnificent stock of properly grown, vigorous, well rooted Deciduous and Citrus Fruit Bearing Trees, Ornamentals, Vines and Roses.

Let us have your name and address and we will mail you new price list when printed.

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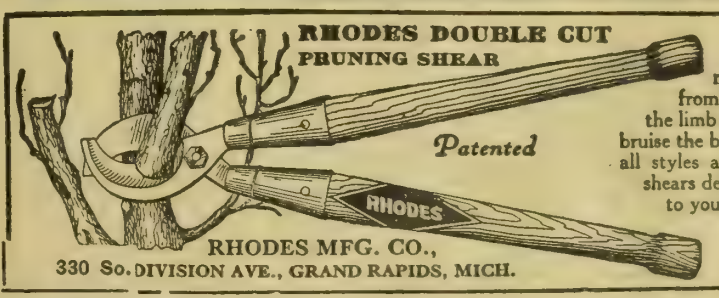

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Hyacinths, Narcissus, Jonquils, Daffodils, Tulips, Spanish and Dutch Iris, Oxalis, Ixias, Sparaxis, Freesias, Amaryllis, Watsonias, Ranunculas for winter and spring flowers. Ask for Bulb Catalog. Mailed on request.
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Roadster,*	*was 695; now*	595
Coupe,**	*was 1000; now*	850
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Reliable Trees and Vines

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June Drop

From Report of R. S. Vaile and Gordon Surr to Tulare Citrus Growers

One of the prominent problems for which a solution is urgently and properly desired is the so-called June drop. The work done some years ago by Dr. Coit and Mr. Hodgson remains to date the best information we have on the general question. This work was of particular value in that it showed clearly the fact that the shedding of fruits the size of quail eggs during June and July may be caused by several very different things. It seems that some of the fruit is affected with a fungus organism (Alternaria citri) which causes it to drop. Last year a very high percentage of the fruit which shed was found affected with this organism, while this season the percentage is very much less. Last year our observations on the experiment blocks showed nearly 90 per cent infected, while this season there does not seem to be over 40 per cent. A second cause of this summer shedding is to be found in the moisture relationships that exist as between the transpiration from the leaves and the water available to the tree. Many times during hot weather there is so great a transpiration that water is drawn back from the fruit itself and transpired through the leaves. This is said to so weaken the small fruit that it drops. Summer covercrops should help to prevent this occurrence, for they reduce the transpiration requirements by lowering the temperature and at the same time raising the humidity. Measurements of the evaporation from porous clay spheres during June, 1921, showed a reduction of 17 per cent due to a covercrop at Lemon Cove, together with a reduction of three degrees in the average daily maximum temperature, taken five feet above the ground. So far the crops seem to indicate that this change in atmospheric conditions has been of value in the setting of the crop, but there is still some question as to whether the trees can be maintained in good condition with the continuous use of summer covercrops. Also, as has already been pointed out, unless there is ample water available at frequent intervals a summer covercrop may be a decided detriment. We have attempted, during the two years, to grow a few trees under cloth covers, where the atmospheric conditions could be even more completely controlled than with the covercrops. The conditions under the covers were just a little too extreme, however, for practical deductions to be drawn from them at the present time. There did not seem to be any material effect on the set of fruit the first season that the trees were covered and since that time the type of growth has been so modified that the crop might be different for this reason rather than as a result of the climatic changes.

Whatever may be the cause of the June drop the fact remains abundantly illustrated by individual examples that splendid crops of fruit may be set and matured despite this particular malady and without any attempt at its control other than careful and painstaking attention to the details that go to make up good grove management.

Walnut Growers Name Prices

Opening prices for new crop walnuts, which were named by the California Walnut Growers Association on September 28, reflect better financial returns for the entire crop than were enjoyed by the growers last year. The estimated tonnage is approximately the same as it was last year and prices are ten per cent higher than they were then. Opening prices to the wholesale trade are: No. 1 Softshell, 24½ cents; No. 2 Softshell, 17½ cents; Standard Budded, 28½ cents per pound.

The crop is estimated by Sales Manager W. T. Webber at nearly 40,000,000 pounds. Counting the meats which will be obtained from low grade walnuts, he figures that the crop is worth between $11,000,000 and $12,000,000.

While the strength of the market would appear to justify higher opening prices, General Manager Carlyle Thorpe, who returned from a complete survey of Eastern market conditions about a month ago, believes that the prices just announced are altogether in keeping with sound business and are such that the crop should be sold out promptly and go into ready consumption. He says:

"It should be borne in mind that a pound of walnuts is not sold until it is eaten and the public will not eat walnuts unless it regards the price as being fair. Today the wholesale price of all food products combined is 33 per cent lower than at the corresponding time last year. When the price strikes the consumer as being too steep for his pocketbook, regardless of what the wholesaler or retailer may be willing to pay, the consumer simply refuses to buy and the walnuts pile up on the dealers' shelves.

"The walnut production in this state has been doubling itself every four years and foreign competition has grown to the point where, if California walnut growers are to dispose of their crops they must adhere to sound business principles and secure the widest possible distribution of the product.

"This season the buying power of the country is not as strong as it was a year ago because there are 5,750,000 unemployed people in this country, most of whom were earning good wages a year ago; and the fact cannot be overlooked that the laboring classes are good spenders. The ten per cent increase in prices more than offsets the slight crop shortage which is statewide, and it is my belief that the growers, most of whom are business men, are well pleased with the association's opening quotations."

FRUIT GROWERS AND FARMERS CONVENTION

The 54th annual convention of the California Fruit Growers and Farmers will be held in Los Angeles October 24 to 26, at Expositon Park, under the auspices of the state department of agriculture.

The great problems confronting the fruit growers and farmers will be discussed by eminent authorities, including Secretary of Agriculture Wallace.

President Teague and Manager Powell of the California Fruit Growers Exchange will discuss agricultural legislation and the failure in distribution of agricultural products.

At a banquet which will be given Tuesday evening, October 25, Governor William D. Stephens will be guest of honor. Governor Stephens will deliver an address on "Agriculture as the Basis of Prosperity."

The subject of water transportation for shipment of fruit and other perishable products, will be one of the subjects under discussion, and will attract the attention of railroad officials and others in various parts of the country, as well as one of the commissioners of the United States shipping board.

Horticultural Commissioner Ryan and Farm Adviser Hodgson of Los Angeles County, Dr. Clements of the chamber of commerce, Henry Musser and James P. Britt of the state department of agriculture, have been named as a committee to take charge of the details of the convention.

The California Flower Show will be held at the same time and place.

SACRAMENTO COUNTY OLIVES SELL AT $100

The recently formed Fairoaks, Sacramento County, Fruit Growers Association announces sale of 50 tons of green olives from the groves of 22 members for $100 per ton. It is expected that 150 to 200 tons more will be sold for the same price at an early date.

Secretary G. L. Camden says the association was organized to handle citrus and deciduous fruits, but that the olive being a slow seller, it was to confine its activities to that fruit this fall.

The association controls about 300 tons of olives and growers recently have been refusing offers of $75 per ton, which buyers said was the limit they would go. The association took hold and succeeded in making sales at $100. The olives were sold for consumption by the foreign element in the East and will be processed.

Officers of the new association are: C. E. Weikert, general manager; Dr. S. W. Cartwright, treasurer and G. L. Camden, secretary.

WHAT ARE "FRESH CLEAN SACKS?"

Quarantine Officer Vary of the state department of agriculture is sending out letter of notification.

Several inquiries have been received as to the definition of the term "fresh, clean sacks," used in Regulation 3 of Quarantine Order No. 34, which pertains to the movement of potatoes from alfalfa weevil infested areas into California. I am advised by L. A. Strong, chief quarantine officer of the state department of agriculture, that hereafter only new sacks from the original bale will meet this requirement. Potatoes from alfalfa weevil areas arriving in sacks other than new sacks, as defined above, will be held in quarantine by this department until requirements as specified in this regulation have been complied with.

HARDY AVOCADO

A variety of avocado, the fruit of which attains a weight of 18 ounces and the trees of which will stand some frost, has been sent to the office of foreign seed and plant introduction, United States department of agriculture, by Wilson Popenoe, plant explorer in South America, and buds of it are now growing in the department greenhouses. Curiously, the new avocado, hardier against cold than the ordinary West Indian and Guatemalan varieties, was discovered in Ecuador. The region, hitherto unknown as producing this fruit, is in what is known as the Chota Valley, 6,000 feet above sea level, giving a climate comparable to many regions much farther north. Most of the fruits of varieties of this Mexican race are small. This one has fruits comparable in size with those of the more tender races. Regions occasionally visited by a temperature of plus 18 degrees Fahrenheit have produced bearing trees of the Mexican avocado.

HUMUS FOR CITRUS

On the W. J. Worsham ranch near Covina a liberal application of strong barnyard manure was made two months ago. The cost was five dollars a ton spread in the orchard. This was plowed under, and now straw is being given, a bale to a tree, which cost $10 a ton, delivered but not spread. As the manure had a fertilizing value and contained enough nitrogen to keep the beneficial bacteria busy, the straw was applied solely to provide humus. For such use it is considered the cheaper, though the cost per ton is more than twice as much, for a ton of dry straw contains three or four times as much organic matter as the damp manure. Though the orchard trees are in good condition, the leaves are not quite so large or of as good color as they should be, so the orchard will later be subsoiled and an application of lime made.

EXTENSION SCHOOL FOR BEEKEEPERS

An extension school for beekeepers will be held in Los Angeles December 5 to 10 inclusive. This will be an advanced course of instruction for commercial beekeepers and will include such subjects as winter and spring management, diseases, queen rearing and swarm control. The program will be provided by the division of entomology of the state college of agriculture and will include prominent apiculturists from the state university, the federal department of agriculture and other institutions. As soon as the location has been selected the complete program will be announced.

Farm home department meetings will be held in Kern County at Shafter, October 11; McFarland, 12; Arvin, 13. Farm home department committee, 15; Weed Patch, 18; Inyokern,, 21; Kern Delta, 25; Wasco, 27; Edison-Fairfax, 28.

A preservative for YOUR roof

Examine your shingle roof. It needs protection against the heavy weather that is coming.

ORONITE SHINGLE OIL
Preserves Shingles

Shingle roofs had a hard battle last winter. Drenching rains and sharp, whipping winds cause moisture and air to penetrate the fibre of unprotected shingles, and start disintegration and decay. The natural oils in the wood of unprotected shingles evaporate and cause cracking and warping—soon you have a leaking roof.

Use Oronite Shingle Oil—on old or new roofs to protect them against the elements and assure longer service from them. Oronite Shingle Oil is a high-quality preservative for all shingles—on roof or side walls. It penetrates the shingle fibre with a *moisture-resisting* preservative. It retards the evaporation of natural oils in the wood and counteracts the effect of age and exposure.

An application of Oronite Shingle Oil *now* may save the heavy cost of a new roof next season. Oronite Shingle Oil will put your shingle roofs in condition to stand up under another winter's heavy rains.

A gallon of Oronite Shingle Oil will cover from 80 to 100 square feet of shingled roof, according to the age and condition of the wood. Oronite Shingle Oil may be mixed with colors to make an attractive finish. Ask our nearest agent for formulas.

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especially prepared for use on the farm.

Oronite Roof Paint

A high-quality protective coating for prepared roofing and metal roofs.

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Gives a durable, smooth lubricating film under every pulling condition. Keeps the axle cool; no hot-boxes, no gumming. The MICA makes it better.

Eureka Harness Oil

Preserves the original strength and life of leather and keeps it soft and pliable. Keeps harness "new looking."

Standard Hand Separator Oil

Correct Lubrication for your Hand Separator, under the conditions of high speed and close fitting parts.

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ORONITE *means* QUALITY

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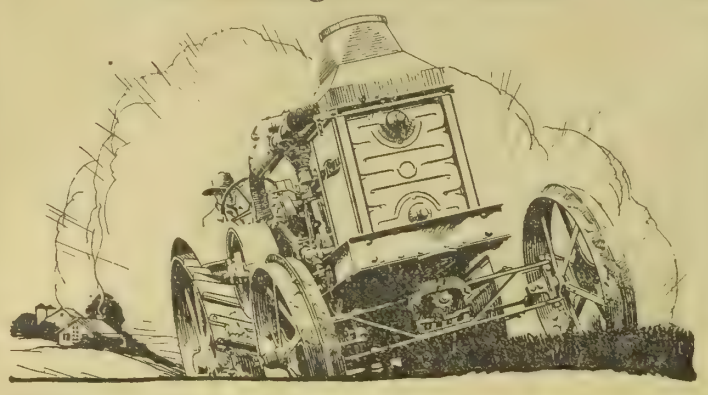
This record was made by our OilPull in the recent Official Tests at Fargo, North Dakota



OilPull performance proves without doubt that a perfected oil burning tractor is the most efficient and profitable power for the modern farm—that it cuts the cost of producing crops. Horses are not to be compared with the perfected OilPull Oil Burning tractor. OilPull success is due to three features that are absolutely essential to dependable power at low cost. These are: (1) Low Fuel Cost, (2) Low Repair Cost, (3) Long Life.

Consider These Facts:

For nine years an OilPull tractor has won leadership in all official public tests for low fuel consumption. No tractor has ever equaled its fuel economy records. Again this last summer in the Official Tests at Fargo, North Dakota, in competition with practically every prominent tractor, an OilPull 12-20 was victorious. The mark established was only 2.325 gallons of kerosene per acre plowed. This was 8% less than the average of the six lowest scores and about 30% less than the average fuel consumption among all the kerosene tractors. *It proved that the OilPull will plow an acre cheaper than any other tractor.* In preparing the seed bed, which included discing, seeding and dragging, the OilPull consumed only .85 gallon per acre.

Low Repair Costs and Long Life

Such amazing figures as less than $17.00 per year for repairs are convincing. A recent investigation disclosed this low average among 500 OilPulls of all ages.

As for long life, hundreds of OilPulls are still at work after 8, 9, 10 and 11 years of service.

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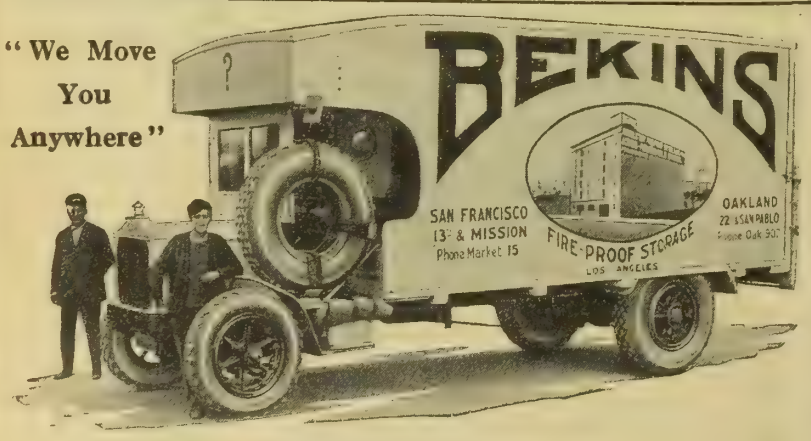

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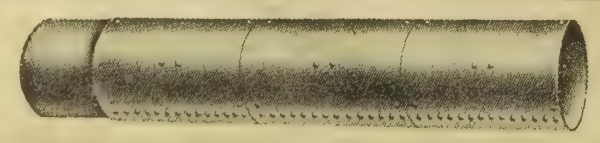

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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Pressing Wild Flowers

At the recent state fair at Sacramento, in the Placer County exhibit I saw an exceptionally fine portfolio of native wild flowers and plants, pressed very flat and the natural colors well preserved. Can you tell me how best to treat such material? — Subscriber, Vacaville.

To gain best results the plants and flowers must be dried as quickly as possible. The professional sheet for mounting such material is 11½ by 16½, and all dryers, blotters, presses, etc., should conform as nearly as possible to these dimensions. For best results place fresh specimens between sheets of porous or uncoated paper, the poorest news paper is good, although that without ink is better—it is a matter of getting the greatest porosity. Do not place material between blotters or latter will soon get gummed and stained and become nearly or quite valueless. After specimen is between folded sheet place the latter between two sheets of the best blotting paper you can get. Build up a pile of as few or many as you wish, first a blotter, then a sheet of plants, another blotter, etc. On top of this place heavy weights, as heavy as you wish. Professionals change blotters once a day at first and less often as material dries, but the more often blotters are changed, especially at first, the better will the natural colors be preserved. Much depends on water content of material. Some people change blotters on succulent material as often as they become moist, perhaps four times a day. See that blotters are well dried before using again. Always place material in hottest sun. The results will be according to care given. Mount finished specimens on the purest white paper or bristol board.

Planting Lawn Grass

When is the best time for planting lawn grass in the San Joaquin Valley? —Subscriber, Hanford.

During the next month is a good time for starting a lawn. If one is careful in sprinkling frequently, two or three times a day if possible, the lawn should get well established before the cooler weather of November. It should then be protected so far as possible from tramping or wear during the winter months, then the first warm days of late winter will bring it along very satisfactorily.

Replacing Peach Trees

I have a 14 year old peach orchard in which some of the trees are dying. I want to replace them with new ones and would like to know if it would be safe to pull them out now and leave big holes until spring time and then plant in those holes the new trees? —Subscriber, Turlock.

This replacing of old trees is difficult. In the first place the old established trees surrounding the younger ones will be so greedy of moisture that the young trees will not have a good fighting chance. Besides, the fungous and other troubles which may have affected the roots will exist in the soil for a longer time than the few months referred to and this might prove a determining factor in the success of the newly planted trees. If possible to rotate and put in alfalfa or potatoes or some other crop for a few years we believe the orchard could be made over into another orchard probably of great value. This, however, is a long question for with several hundred dollars invested in each acre most farmers are hardly in a position to wait patiently for soil conditions to be corrected according to nature's way. This question is one of such importance that we would be glad, indeed, to hear from any subscriber of the Cultivator who had had experience in the making over of his orchard or, rather, of planting one orchard where another has just been removed. A year's subscription to the California Cultivator, either new or renewal, will be given for every such answer which we may be able to use in our columns.

Cockroaches

I have a cement cellar with cement floor and large wide shelves all around to keep fruit cans, etc. I put 12 iron pipes through the cement near the top of walls on all sides and put screen wire over ends and tied on with wire on the inside to keep out anything. Now there is some kind of stinking bug with hard shell. Doesn't fly much, but can, and scurries from under every lifted object. Is there any way to kill them or make them leave? The cellar is perfectly dry.—Subscriber, Corning.

Presumably these are cockroaches, one of the worst pests, for they are voracious feeders, will destroy food or almost anything they can get access to. They are not very easy to dispossess. The simplest remedy is to thoroughly dust cracks or places inhabited by them with buhach or common insect powder. If this is applied freshly each day or two they will soon leave in disgust. In addition they have a working mate known as the croton bug. This is somewhat smaller than the cockroach and inhabits wet places, especailly if the plumbing is leaking and surrounded by decaying wood. Removing the moisture is the way to handle this fellow. We are not certain but we think that if the milk pans are surrounded with a very light sprinkling of the insect powder the pest will not trouble the milk.

Ventilating Cellar

My cellar is always hot, doesn't keep anything cool as a cellar should. It is 10 by 12 by 7 feet high. I am going to build and want to know if I put a tin pipe from cellar up through roof of kitchen if that would give circulation of air.—Subscriber, Corning.

It is rather hard not knowing more of the circumstances to give answer of much value, but we would suggest for a new building the ordinary cool food cupboard now built in most modern houses. This, of course, has to be open at bottom and top with shelves made of one-fourth inch mesh wire. The air from the cellar rises through this cupboard which usually has an outlet above the ceiling of the upper floor. To be satisfactory such vent must be supplemented by thorough ventilation of the portion between garret and the roof or ceiling. This is accomplished by slat construction at gable ends of the house. This permits sweep of air through the upper portion of the house and aids in drawing warm air from cellar. This cooler may be 12 or 14 inches square or even two feet.

Learning Pruning

Please refer me to some one to prune an apricot tree and peach and a Satsuma plum. I have 2,000 apricot trees and if informed I can attend to the pruning myself. — Subscriber, Palms.

Your county farm bureau will without question stage a number of pruning demonstrations the coming season. The best way will be to attend these demonstrations and learn the latest on "long pruning" as well as get in touch with practical pruners. We would suggest that you get one of the best qualified pruners to aid you in pruning your entire orchard at least the first year. The experience should then be of great value in other years' work.

Grafting Figs

When is the best time of the year to bud or graft over a fig tree, and how would one graft it so it would bear larger fruit, just as you would a walnut tree, or is there a different way to go about it? — Subscriber, Puente.

Grafting of figs should be done in dormant season. Information as to methods is given in the California

Cultivator of May 14, 1921, copy of which is mailed to inquirer's address.

Peach Pits for Seed

What are the best peach pits for planting in nursery for stock for budding?—Subscriber, Pomona.

See answer to El Cajon subscriber on page 351 of last week's Cultivator.

Budding Walnuts

What is best time for budding walnuts?—Subscriber, Pomona.

Walnuts are usually grafted. This is done in months of February or March, according to season, care being used to graft just before starting of growth. Details of the work will be given in the Cultivator a few weeks in advance of grafting time.

Transferring Insurance

A sells house and lot to B shortly after insuring house for three years. Nothing said at time of purchase about insurance. What would be fair, morally not technically, in such cases —A to receive back part of the insurance he had just paid, or does he get nothing back on the insurance from which B benefits?—Subscriber, Turlock.

This is hardly a legal question for it is more a matter of understanding or agreement between the two parties. Technically the one who sold the place can go to the agent and cancel the insurance, asking for the shorter term rate and receiving in cash the difference. Ordinarily in sale of buildings the insurance is transferred. It is of no value, however, if allowed to stand in the name of the original insurer, for once title has passed, according to the terms of standard forms of policies, the insurance can not be collected in case the building should burn. In case of sale in order to secure protection to the purchaser the transfer should be immediate or else it should be cancelled and a new policy taken out in the name of the purchaser.

Orange Trees in San Joaquin County

Where can I secure orange trees that will grow in sandy soil in the northern part of the state? — Subscriber, Ripon.

Any nurseryman advertising citrus trees in the columns of the Cultivator can supply the trees. It will then depend on local weather conditions as to whether success may be had. That is, there are some portions of San Joaquin County which may prove a little too cool for best results in citrus culture. However, there are orange trees growing in nearly all sections of San Joaquin County. In the cooler or more exposed situations it would probably be best to protect the trees during the first few years of growth by surrounding them with some protector which would prevent frost injury. This is often done in some sections where orange culture is important commercially.

Mottle Leaf

Am sending leaves of orange trees affected with mottle for which I would like to know the cause and remedy, if any. Some say too much fertilization; some, water. I have been using barnyard manue, fish tankage and cover crops. I water every five or six weeks, have good drainage. I use 75 inches on eight acres about 36 hours. Now if anyone can give me the information I would be very grateful.—Subscriber, Fillmore.

This matter of mottle leaf of citrus trees is decidedly complicated and no intelligent answer can be given at long range. As the inquirer suggests, some say too much of this or too much of that, while others find the reverse to be true, and presumably both are right. That is, mottle leaf is not a disease but an indication of disease or an improper physical condition of soil or something which only close observation and knowledge in treatment can help in solving. Apparently this soil is well cared for, if good heavy cover crops have been plowed under the ground should be light, and the addition of commercial fertilizer has probably carried a sufficiency of fertility. Ordinarily we believe watering every five or six weeks is sufficient, but possibly this soil is not of the type which will hold water that long. In that case frequent irrigation might be beneficial. Some of our other citrus culturists may have some suggestions for the Fillmore inquirer. Let us have answers. How may we prevent or cure mottle leaf?

Bleaching Walnuts

Will you please advise me as to the proper method or process for bleaching English walnuts.—Subscriber, Visalia.

24 pounds chloride of lime and 6 pounds monohydrate crystals of soda to 50 gallons of water; the monohydrate dissolves in cold water while sal soda has to be boiled. By sulphuring very lightly after dipping while the nuts are still wet with the solution, a much whiter nut is secured.

Foreign Plants

Can any one obtain foreign plants and seed by writing to our ambassadors or ministers? What is the proper procedure?—Subscriber, Modesto.

We think the ambassadors and consuls in foreign countries are not able to secure seeds for private parties but do join in securing seed for the department of agriculture which sometimes distributes these seeds or cuttings. The best way to get information regarding that is to write Bureau of Plant Introductions, Department of Agriculture, Washington, D. C. One should give the department information as to the kind of seeds or plants desired and describe conditions under which they will be tested so that the department may know that conditions are favorable to the growth of the plants. The quarantine regulations are such that it will be very difficult for one to have plants sent to this country from foreign dealers or growers.

ORANGE COUNTY FAIR

By Ernest Braunton

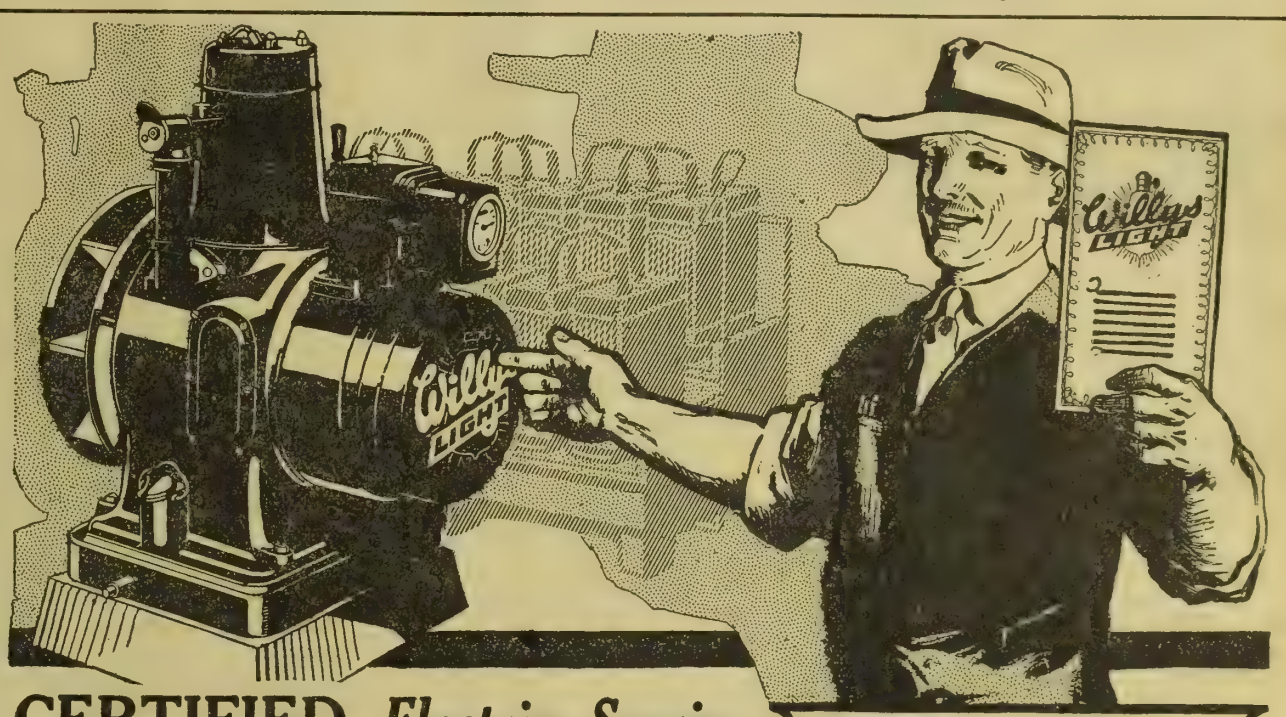
The dominating feature of the Orange County Fair was the farm bureau exhibit as it had taken the eight central booths nearest the main entrance of the agricultural tent and installed in each a branch or department of the bureau, such as "Poultry Department," "Beekeepers Department," etc., etc., and such signs in large letters hung over each booth. It was a great exhibit of the scope of farm bureau activities and of its accomplishments, and Farm Adviser Wahlberg must have been preparing for it during the whole year preceding.

Much of the remainder of the main agricultural tent was given to community exhibits, and any section of like area would have to dig deep and search soundly to find as fine and variable an exhibit as that shown by Garden Grove. It would seem as though every fruit and vegetable that soil could grow had found a place in and about this booth. At the entrance was staged field corn whose three ears to the stalk were ten feet from the ground, too far up to be harvested except the stalks were cut down, too high to hear what is going on in the world of man; and two ears are enough for anyone but an Orange County farmer. Inside was a range from the oily avocado to the fiery chili pepper.

Every community, town or section of the county had its booth and in every booth a great variety of crops was shown. It was noticeable that hardly a booth but contained avocados and doubtless no county can better grow them in all parts. In one booth a branch hung heavy with grape-like clusters of little Mexican seedling avocados about an ounce in weight, while their great "show piece" was a stock pumpkin weighing 120 pounds.

A fine exhibit of apples was shown from the Costa Mesa that would score high in a state district exhibit. Aside from the new crop were several varieties that had been in cold storage for ten months. The writer saw one box of these unpacked (Pearmains) and there were but six apples in the lot of at least 70 that showed even the slightest bruise, injuries evidently suffered previous to being placed in the refrigerator plant.

Major stock ranges of Arizona and western New Mexico are the best in ten years, according to forest supervisors and others in a position to observe conditions. Aside from excellent pasture at present grass seed has fully matured and will cover the ground with the heaviest seeding it has received in years.



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Ask any Pacific Electric Agent for the Commutation Fare on tickets best adapted to your travel needs. He will show you the true way to travel economy, and you do not carry the accident risk.

Household Department

DREAMS

I know a hill where the heather blooms,
Where the wind of Heaven blows free;
Where the sky on high is a blue, blue sky,
Which smiles on a Summer sea.

I know a spot where the sunshine breaks
On a world that is half asleep;
Where the sad waves sigh as the day goes by,
And over the bright sand creep.

I know a dream which is mine all day,
And haunts me the long night through;
It is sky and sea and a wind that is free
And the sun and the heather and you.
—Irene Styles in London Answers.

THE TRIAL OF FIRE

A Mock Trial Staged with a Certain Amount of Poetic License.

SCENE, Court Room—There should be a large chair and table for the judge's bench if nothing more accurate is available. There should also be a chair and table for the clerk of the court, a witness chair beside the judge's bench and chairs for the twelve jurymen and spectators. Various pupils should be designated to represent the different fire hazards.

The use of special costumes is optional. These may easily be constructed of cardboard, cloth or otherwise. However, it will answer every purpose to hang placards about the necks of the pupils.

Dramatis Personae—The Judge, the District Attorney, Court Officer, Counsel for the Defense, Clerk of the Court, the Jury.

The Defendants—Kerosene, Cigarette, Match, Electricity, Rubbish, Defective Chimney, Gasolene, Bonfire. The Arch Criminal, Carelessness.

The Judge enters after all have assembled. The different defendants (the hazards) are led in by the Court Officer. Everybody stands as the judge enters.

Clerk (standing): Oyez, oyez. All ye who have business with this honorable court draw near and present your petitions. (No one moves. He continues): The first case on the docket is that of The People vs. Fire.

Judge: I assume that the formalities have been observed.

Clerk: Yes, your Honor.

Judge: Are the Counsel ready for trial?

District Attorney: The People are ready, your Honor; the defendants should have been brought to trial years ago.

Judge: Who is appearing for the defense?

Counsel for the Defense (rising): I am, your Honor. I wish to say that there are nine defendants involved in this action. Each defendant will speak for himself.

Judge: Very well. We will proceed. (Looks at paper.) I see that Kerosene is charged with having wilfully caused the death of a little girl and boy and the destruction of their home. Clerk, call the defendant.

Clerk (calling) Kerosene to the bar.

Judge: Kerosene, you have heard the charge, what is your plea?

Kerosene: Not guilty.

Judge: Have you any witnesses?

Kerosene: I am my own witness.

Judge: Clerk, swear the witness.

Clerk: Do you solemnly swear that you will speak the truth, the whole truth and nothing but the truth, so help you God?

Kerosene: I do.

Judge: What have you to say for yourself?

Kerosene: May I tell how it happened in my own way?

Judge: Yes, go on.

Kerosene: I was enclosed in my usual container, your Honor, waiting to be of service and doing no one any harm, when the little girl came into the kitchen, took me up and poured me into the kitchen stove because she thought the fire was not burning fast enough. It was not my fault, your Honor, that I was kept in the kitchen where I had no business to be; it was not my fault that the child was allowed to handle me and I could not help myself when I touched the flame; I flashed back, of course, exploded the can and burned the little girl to death. I also burned her brother who was playing nearby on the floor. There would have been no fire, your Honor, if the family had been careful and the children had not been allowed to play with fire.

Judge: I recognize the truth of your story, Kerosene, and dismiss the case against you. (Kerosene takes seat at one side.)

Judge: What is the next case?

Clerk: It is all part of the same case, your Honor; the next defendant is Cigarette.

Judge: If there are many more defendants in this case swear them in at once.

Clerk (turning to pupils representing hazards): Do you solemnly swear that you will speak the truth, the whole truth and nothing but the truth, so help you God?

Chorus: We do.

Clerk: Cigarette to the bar.

(Cigarette comes forward.)

Judge: Tell us just what happened.

Cigarette: I was in a man's pocket in a warehouse, your Honor, where a dangerous chemical was being stored. The man knew it was against the rules to smoke me, but he was reckless and "took a chance." When I was almost consumed he threw me on the floor and this ignited some of the chemical scattered about and caused it to explode the entire storage. The damage amounted to $2,000,000, but it was not my fault. I cause fires only when used by careless people.

Judge: Step down until we hear some of the other defendants.

Clerk: Is Match present? (Match steps forward and takes the witness chair.)

Match: Somebody threw me on the floor, your Honor, and a little child found me and used me in play, because she did not know that I was dangerous. First she ignited the curtain at the window and then her own clothing. They took her to the hospital and she may recover, but if she does, she will be disfigured for life. I was not guilty of any wrongdoing and the accident would not have occurred if I had been kept out of the reach of small children.

Judge: Take your seat until we hear the rest of the witnesses. Call the next one, Clerk.

Clerk: Electricity, take the witness chair.

Judge: Your record is a bad one, Electricity. You started out in life with great opportunities for service, but you seem to have "gone wrong" until you have become the chief cause of fire in the United States. Every year you destroy millions of dollars' worth of property. What is the reason?

Electricity: Your Honor, I have been basely used. I possess tremendous power, but nevertheless, I am harmless if properly installed and kept within bounds. I should be insulated against chance contacts and my wires should not be given too much to do. I was haled into court, your Honor, because I overheated an electric flatiron and set fire to a newly built home. I burn many other homes in the same way every day, but it is not my fault, your Honor. When I am once put to work I have to continue until I am switched off, but people forget and leave electric irons and other heating devices in contact. Consequently, these devices grow hotter and hotter until they ignite the nearest combustible material and soon there is another fire. Sometimes this occurs at night and causes loss of life, and yet engineers call me the safest known form of power and light, when properly used. If people would only be careful instead of careless in using me, there would be no cause for complaint. (Electricity steps down and takes former chair.)

Clerk: Rubbish is among the defendants, your Honor.

Judge: Very well; call Rubbish.

A Bathroom Five Feet Square

Perhaps yours is a home where another bathroom would add much to comfort and convenience. No longer need limited space handicap you.

The illustration shows "Standard" Plumbing Fixtures installed in a room only five feet square, making a *complete* individual bathroom.

A small space partitioned off—a large closet utilized—and a similar arrangement can be yours.

See your Contracting Plumber or write for catalogue, "Standard" Plumbing Fixtures for the Home. "Standard" Plumbing Fixtures in this bathroom are: 5-foot Pembroke Bath with Shower, Marcosa Lavatory and Expulso Closet.

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(Clerk beckons and Rubbish advances to the chair.)

Judge: I find that for a good many years you have been hanging around corners and have become a thoroughly undesirable citizen.

Rubbish: I was once a man of parts, your Honor, but now I am only part of a man. I am made up of odds and ends from here and there and have no will of my own. If people realized how dangerous I am, because I furnish fuel for the chance spark and often ignite spontaneously, they would not have me around; but I find plenty of cellars and attics to sleep in where the careless housekeepers never disturb me and I stay there until I catch fire. I sometimes have to wait years, but the older I am the better I burn. However, I am not at fault, your Honor, because I cannot remove myself.

Judge: You have said a good deal, and it is not all rubbish. (To Clerk) Call the next defendant. (Rubbish resumes former chair.)

Judge: I believe that Defective Chimney is closely involved in fire troubles. Where is he? (Clerk beckons to Defective Chimney.)

Kerosene, Cigarette, Electricity, Defective Chimney, Bonfire, Carelessness

Judge: I am given to understand that you cause a great many preventable fires.

Defective Chimney: Yes, your Honor, I do. Many contractors do not build me properly. In some places they support me upon brackets instead of building me up from the ground. Sometimes they build me only one brick in thickness, and, still worse, construct me with my bricks on edge instead of flat; consequently, I develop cracks through which sparks escape and cause fire. Frequently, the sparks fall upon the roof, and when it is made of wooden shingles there is likely to be another home burned up. Sometimes the cracks are under the roof and the sparks fly into the attic which is a dangerous place for a fire to originate. Careful construction, your Honor, as set forth in the Standard Building Code, is the only remedy. (Defective Chimney takes former chair.)

Judge: The name of Gasolene is next.

Clerk: Yes, your Honor, I will call him. (Beckons and Gasolene takes the witness chair.)

Judge: Gasolene, you have made a place for yourself in good society and I am shocked to find that you are charged with countless fires.

Gasolene: Yes, your Honor, I am forced to admit that this is true, but it is due to the fact that the average citizen does not realize my power. I have killed many people and started thousands of fires because I am volatile and flash up upon slight provocation. Housewives sometimes use me for cleaning purposes in their homes. The moment I am free my vapor starts about the house looking for a flame or a spark. Presently I find it and, pouf! I cause a terrific explosion. Not long ago I killed a California woman because she used me to clean her silk waist. The rubbing of the silk caused a spark, which was all I needed. With automobiles in every highway and byway, nowadays, I have become almost as common as water; yet men will smoke around filling stations and then wonder why there are accidents. I work hard for humanity and am, your Honor, reasonably safe when properly handled. I am more dangerous than dynamite, however, when carelessly used, for it takes but a little spark to set me off.

Bonfire: Grown people as well as youngsters often start me, your Honor, and by doing so they frequently cause serious loss of life as well as of property. I am always potentially dangerous and seldom necesasry, except to destroy rubbish, but when I am, I should be confined so that I cannot scatter sparks. A bucket of water or some other extinguisher should be at hand to keep me within bounds. There was a man in Alabama who forgot my possibilities, and one day, when there was a high wind, lighted me in order to burn up some old chicken coops and trash. There was a wooden fence nearby as well as a frame garage, and before I got through 191 buildings were destroyed. Nevertheless, I plead not guilty, your Honor, because I do not start fires unless some careless person starts me. (Resumes former seat.)

Judge: The Counsel for the Defense may now put in his rebuttal.

Counsel: I move, your Honor, that this case be thrown out of court on the ground that proof of guilt on the part of the defendants has not been established. These defendants, your Honor, are for the most part tools—involuntary tools of man. When rightly used they render him great service, for they are mighty, but the power to serve is generally accompanied by the power to harm. I maintain that the testimony of each of these defendants shows complete absence of intent. They act as they have always acted and as they always will act under such conditions.

Man understands their nature; when he gives them their opportunities he knows, if he will stop to think, what the result must be. Therefore, why blame them for what they cannot help? Why not bring to trial the real culprit, Carelessness, who alone is responsible for most of our fires? Why not bring before the bar of this court the guilty one who causes these defendants to work havoc throughout the land? Without his evil influences they would merely be servants of humanity.

Judge: The court is of the opinion that the point is well taken. Carelessness should be the defendant here and not these prisoners. Where is Carelessness, Mr. District Attorney? This court is of the opinion that you have been remiss in your duty in overlooking the arch criminal who causes the majority of all fires. (Court officer walks over and hands a note to the District Attorney.)

District Attorney: Your Honor, I have been looking for Carelessness and I have just received word that he has been brought to court and is now in the ante-room.

Judge: Have him brought in. (Carelessness, represented by a pupil in patched, dilapidated clothing, is hustled in roughly by the court officer who leads him before the Judge.)

Judge: The testimony that has been given in this court in the case of The People vs. Fire has indicated that you, Carelessness, are the culprit who should have been brought before the bar of justice. You are charged with having caused the loss of thousands of lives and the destruction of millions of dollars' worth of property every year. What have you to say in defense?

Carelessness: Nothing, your Honor, except that I am an ingrained habit of the American people. I begin with the youngest children and stay with them throughout their lives. Other countries do not encourage me to any great extent, but I seem to be welcome in every city, town and cillage of the United States, by young and old and rich and poor alike. I recognize danger, but I like to "take a chance."

Judge: That is an explanation, but not an excuse. I charge the Jury, on the evidence of all the other defendants and on his own admission, to find Carelessness guilty in the first degree.

(The Jury consult without leaving their seats; the Foreman rises.)

Foreman: We find him guilty, your Honor.

Judge: You have, heard the verdict. It is now my duty to sentence you in

(Continued on Page 383.)

Madam! Do You Waste?

CAN you *afford* to waste these days? Your husband is saving in the field. Are you helping in your kitchen?

For instance, your left-over bread. Don't throw it away. Here's a healthful, delicious way to use it—and save more expensive foods.

Try this dish for your farm-help—but be sure to use *the raisins,* for *there's* the charm.

What a Camp Cook Proved

A California camp cook's worry recently was left-over bread. But one day he put in some raisins. The men ate all and called for more. He had to serve it twice a week. He had to *bake bread* for raisin-bread pudding after that. Many ate two helpings, and he saved on more expensive foods.

And he made a more *contented crew.* The camp soon became famous for its food, due mainly to that dish. It could always get men easily. Help *wanted* to work there. And the camp profited greatly—due to *raisin* bread pudding!

Try and See

Try this dish on your farm hands. Look for like results. New food like this brings new vim and energy to your men.

Let them *taste* raisin-bread pudding made like this. The raisins add *nourishment* as well as luscious *flavor*—1560 calories of energizing nutriment per pound. So this dish is a *man's* food, good for red blood.

Raisins are 30% cheaper than formerly—see that you get plenty in your foods.

Sun-Maid Bread Pudding

To a pint of bread crumbs add a well-beaten egg, a cupful of milk, 1 tablespoonful of molasses and 1 cupful of SUNMAID Seeded Raisins cut in halves. Mix well together, then stir in ½ teaspoonful each of cinnamon, salt and soda. Turn into a buttered pudding boiler and cook 2 hours. Serve with the following sauce: Beat to a cream ½ cupful of butter and gradually beat into it a cupful of sugar. Add any preferred flavoring. When it is smooth and creamy pile it roughly on a pretty dish, place where it will get cold, and before serving grate over it a little nutmeg.

100 Recipes Sent FREE

There are a hundred different ways to serve delicious raisin foods. We've put them all into a valuable book that you should have to help you feed your men. This book will save time, trouble and expense. You need a copy so send for it now. The book is FREE. Just mail the coupon for it.

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Sun-Maids are the daintiest, the plumpest, tenderest raisins—made from finest California table grapes. Ask your dealer for them.

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See that you get the genuine Sun-Maid brand.

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Friday, October 21, at 9:30 a.m.

This is without question the greatest offering of the blood of King Segis Pontiac ever made in the west, including high record cows and daughters of such cows, and a wonderful lot of individuals.

20 DAUGHTERS OF KING SEGIS PONTIAC

All young, many out of high record dams of most attractive breeding, and including a number of high class show quality.

31 DAUGHTERS OF PEARL KING SEGIS PONTIAC

Who is by King Segis Pontiac and out of a 37.51 lb. daughter of Pontiac Korndyke that milked 753.9 lbs. in 7 days, second dam a 727.03 lb. yearly record 4 year old daughter of Pearl of the Dairy's Joe De Kol.

13 DAUGHTERS OF KING PONTIAC NETHERLAND SEGIS 3D

The famous young sire formerly at the head of the Rosamaines Rancho herd. He is sired by a grandson of King Segis Pontiac and out of the twice 34 lb. cow Gerben Abbekerk Maid. His daughters in this sale are a wonderful group of young females, with records up to over 30 lbs. butter in 7 days for a 4 year old.

3 DAUGHTERS OF KING SEGIS PONTIAC CHICAGO

Who sold for the then world's record price of $20,000.00 when a calf. He is by King Segis Pontiac and out of the 40 lb. cow Johanna De Kol Van Beers.

7 DAUGHTERS OF PAUL CALAMO KORNDYKE

The great show bull that has many Grand Championships to his credit in the best shows. His daughters in this sale include the famous National Dairy Show winner Nancy Calamo Korndyke.

FOUR 30 TO 34 POUND COWS

Including the great twice 34 lb. cow Gerben Abbekerk Maid, now making a splendid strictly official yearly record in her tenth year.

If you are looking for young cattle with splendid type and rich King Segis breeding, you will find in this offering one of the choicest lots ever sold in California.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OLD TUBERCULIN TESTED BY DR. HURT, L. A. COUNTY VETERINARIAN, AND SOLD SUBJECT TO 60 DAY RETEST.

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California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

Sir Aaggie DeKol Mead

Bred in the richest Aaggie Acme-De Kol of Valley Mead cross, he should be one of the greatest young sires of the breed.

Five of his seven nearest dams average:

Butter	2 Years	2,040.97 Pounds
Milk	2 Years	41,547.20 Pounds
Butter	1 Year	1,130.66 Pounds
Milk	1 Year	23,096.60 Pounds

His seven nearest dams average:

Butter	7 Days	30.47 Pounds
Milk	7 Days	627.60 Pounds

His calves are just what we could expect from a long succession of great sires and dams, and in their present state of development fulfill every promise in the pedigree of their great sire.

Good business judgment will eventually prompt you to place at the head of your herd a bull of Aaggie Acme-De Kol of Valley Mead breeding.

OWNED JOINTLY BY
Fred Hartsook, LANKERSHIM CALIF. and A.W. Morris & Sons Corporation, WOODLAND, CALIF.

Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins

October 12, John Saxer, Modesto.
October 21, Robt. N. Clapp, Nuevo.
November 3, A. W. Morris & Sons, Inc., Woodland.
November 9, Palo Alto Stock Farm, Palo Alto.

Herefords

October 19, W. J. Bemmerly, Woodland.
October 27, Pacific Coast Hereford Breeders' Association, California National Livestock Show, San Francisco.
November 1, J. H. Cazier and Sons, Sacramento.

Shorthorns

October 28, California Shorthorn Breeders' Association, California National Livestock Show, San Francisco.

Guernseys

October 20, Walter H. Dupee, Rhoades & Rhoades Sales Pavilion, Hynes.

Escalon Lady, a member of the Grapewild Guernsey herd owned by A. B. Humphrey, Escalon, has completed an advanced registry record of 539.07 pounds fat from 10,715 pounds milk. She started the test at the age of three years and eight months.

J. E. Wherrell, Riverside, has recently given his Jersey cow, Fern Oxford's Snowdrop, a Class AAA Register of Merit record of 321.29 pounds fat from 4,517 pounds milk. She started her test at the age of two years and ten months and continued for 305 days.

Announcement has been made that the Bridgford Holstein Co., Patterson, will consign a daughter of their 30 pound four year old, Fairmont Pauline De Kol, to the next Brentwood National Sale to be held at Philadelphia.

According to C. R. Thomas, manager of the California National Livestock Show which is to be held at San Francisco, October 22-29, a number of Eastern Hereford breeders have entered show herds. Among the out of state breeders are: A. B. Cook, Montana; Harry Thiessen, Idaho; James McNery, Oregon, and A. H. Barnum, Oregon.

J. W. Van Natta of Indiana, one of the best known Hereford breeders of this country, has been selected to rate Herefords at the approaching California National Livestock Show. Dean C. F. Curtiss of Ames, Iowa, will place the Shorthorn classes and Hugh G. Van Pelt of Iowa will judge the dairy classes.

The students of the college of agriculture and the university farm who are specializing in animal husbandry have organized the Golden Hoof Club. Meetings are held at the university farm each week at which various phases of animal husbandry are discussed.

William Clar of Petrolia, Humboldt County, has purchased from the Blayney herd, near Denver, two young Hereford bulls, Choice Wyoming and Wyoming 18th.

The fall sale season opens next week at Visalia when the S. O. Walker Holstein herd is dispersed. The next day, October 5, the Holstein herd of Robt. T. Curtis & Son will be sold at Tulare, and the day following the well known Eldorado herd owned by Alex. Whaley will be sold at the same place. The three sales will include nearly 175 head of registered cattle and breeders are looking forward to the vendues with considerable interest as an indication of the probable strength of the fall market. All the sales will be handled by the California Breeders' Sales and Pedigree Co., and Manager Hughes states that arrangements have been made by his firm to finance purchases in these and all other sales to be held this fall.

Hervey Bates Perrin, Santa Ynez, has just purchased a foundation herd of Herefords from Kentucky breeders. From J. L. Cleveland he bought 13 daughters of Woodford 10th, a daughter of Woodford 5th, (a full-brother to the champion Woodford 9th). In addition he selected three cows of strong Anxiety and Beau Donald breeding. They were dams of some of the heifers by Woodford 10th. The cows are in calf to the same bull. For a herd bull to go with the granddaughters of Woodford he selected from J. N. Camden's herd a junior yearling son of Woodford 6th out of a daughter of Beau Donald 75th. The foundation that Mr. Perrin purchased will give him a herd of close-up Woodfords. All the grade cattle have been sold from Mr. Perrin's 2500 acre ranch, and his entire time will be devoted to purebreds.

Twenty-seven young dairy bulls were sold at the Petaluma sale for an average of $183. Top price, $515, was paid for a Holstein bull consigned by A. W. Morris & Sons, Woodland. Guy H. Miller of Modesto sold the top Jersey bull for $225 and A. B. Humphrey of Escalon sold the top Guernsey bull for $359.

The Butte City Ranch, Butte City, has offered a Shropshire lamb as a prize to be competed for by students of the college of agriculture at the next annual university farm picnic.

The Chico board of education has made an appropriation of $12,000 for construction of buildings and other equipment to be used in practical swine demonstration work.

Shorthorn breeders of the state are planning their sixth sale, to be held on October 27 at the California National Livestock Show at San Francisco. At present, the entries comprise 36 females and ten bulls, carefully chosen from the herds of the Shorthorn Breeders' Association. Many of the entries in the sale will be entered also in the prize ring of the show. Among the consigners to the sale are: Blackhawk Ranch, Diablo; Warm Creek Land and Livestock Company, Wells, Nev. Henry M. Elberg, Woodland; William Bond, Newark; Howard Vaughn, Dixon; Pacheco Cattle Company, Hollister; E. Shepard, Jack London Ranch; C. Harold Hopkins, Woodland; Ormondale Ranch, Redwood City; Caledonia Farms, San Francisco; H. C. Muddox & Son, Sacramento.

Bock Brothers of Pacheco sold six purebred cows to the Moraga Holstein-Friesian Stock Farm owned by Miss Alberta H. Higgins and Miss Gertrude E. Mallette. One of the cows has a record of 619 pounds of milk and 23 pounds of butter in seven days as a two-year-old; 240 days after calving 426 pounds of milk and 18 pounds of butter in seven days. Two of the young cows are from a 26-pound dam.

H. M. Elberg, Roselawn Stock Farm, Woodland, has announced a public sale of Shorthorns to be held at the home farm, November 16. The Elberg herd is regarded as one of the top collections of the breed in this state and it is expected that the forthcoming sale will prove one of the outstanding attractions of the fall sale season. About 35 head of Scotch and Scotch topped sorts will be included and many of the females will feature the service of Eastlawn Champion, junior champion at the 1919 state fair. The sale will be held under the management of the California Breeders Sales and Pedigree Co.

Howard Vaughn, Mountain View Stock Farm, Dixon, has sold a roan yearling Shorthorn bull to the Briggs Ranch, Healdsburg. Mr. Vaughn reports an increasing demand for Shorthorn breeding stock and Chester White swine.

Imp. Boquian Guinea Stamp, the $12,000 Shorthorn bull owned by Ormondale Ranch, Redwood City, died late last month. This bull was purchased last year and was regarded as one of the top bulls in the Hartnett

SELDOM SEE

a big knee like this, but your horse may have a bunch or bruise on his ankle, hock, stifle, knee or throat.

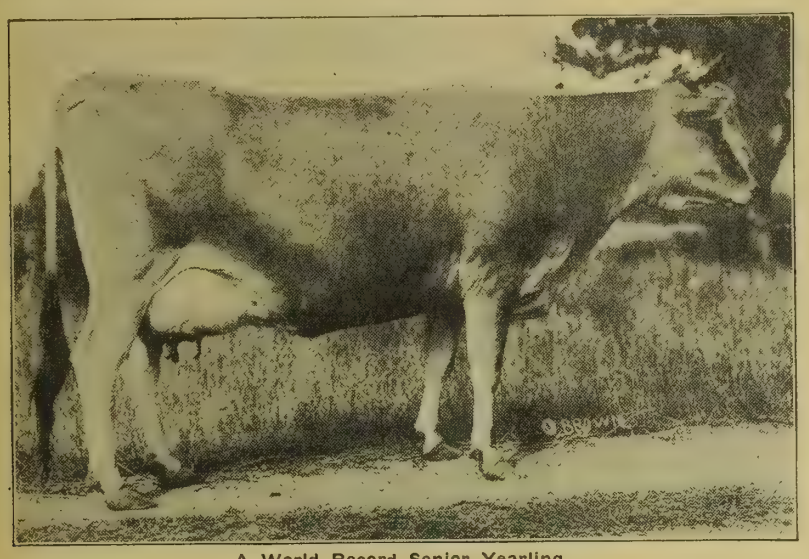
ABSORBINE
TRADE MARK REG. U.S. PAT. OFF.

will clean it off without laying up the horse. **No blister, no hair gone.** Concentrated—only a few drops required at an application. $2.50 per bottle delivered. Describe your case for special instructions, and Book 8 R free. ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful Swellings, Enlarged Glands, Wens, Bruises, Varicose Veins; allays Pain and Inflammation. Price $1.25 a bottle at druggists or delivered. Liberal trial bottle postpaid for 10c.
W. F. YOUNG, Inc., 244 Temple St., Springfield, Mass.

importation. The loss of this bull, following closely the death of the other Ormondale herd sire, Golden Goods Junior, sire of Little Sweetheart and many other good ones, is a severe setback to the efforts of the Ormondale people to build a high class herd.

Blackhawk Ranch, Diablo, has sold to Elon Dunlap of El Dorado County the two Shire mares, Quanea Diamond and Blackhawk Alberta. Quanea Diamond was foaled in 1909 and was sired by Moulton Gallant Prince. Blackhawk Alberta is a three year old sired by Anwick Arthur and out of Quanea Princess.

C. P. Hembree of Willows made a sale of registered Jerseys at Orland, September 30, in which 14 head of females averaged $206. Rochette's Golden Bell topped the sale, going to M. Fortini of Orland for $460. The same buyer secured the second highest priced animal for $350. All the cattle were taken by local buyers.



A World Record Senior Yearling

St. Mawes Lads Lady who started her test at one year and 11 months and produced during the following 12 months 11,756 pounds milk and 829.4 pounds fat. Her first month's production was 56 pounds fat. She was given principally green feed. She is the property of Harry D. Iliff, an Oregon breeder. Photo copyrighted and used by courtesy of Chas. Talmadge.

Manager Thomas of the California National Livestock Show is elated over the quality of draft horses entered for the forthcoming show. Blackhawk Ranch, Diablo; Palo Alto Percheron Farm, Palo Alto; Miller & Lux and Romie C. Jacks are among the leading exhibitors. Jacks makes his initial appearance as a Percheron exhibitor at this show and has entered 16 head.

PACIFIC INTERNATIONAL

One of the typiest and most beautiful bulls of any breed is Count Tickford, a milking Shorthorn two year old, owned by Thomas Harrison of Santa Rosa. Count Tickford has been in the show ring a number of times and has been a consistent winner. A year ago he appeared at the Pacific International Livestock Exposition at Portland as a yearling bull and won first in a strong class of seven animals. Mr. Harrison expects to show him again at the Pacific International at Portland, Oregon, this year, November 5-12.

Last year there were 3,000 animals at the show, with a great showing both in quantity and quality. This year, O. M. Plummer, the manager, expects 4,000 animals at least, with the quality, if anything, better than it was a year ago.

The milking Shorthorns were a strong class last year and entries indicate just as strong this year. California is always well represented at the Pacific International, and indications are that there will be at least 20 cars of stock. At this exposition will be gathered beef and dairy cattle of very strong classes, sheep, swine, goats, both Angora and milk, and a great showing of heavy horses. In addition this year the Western Dairy Products Show will occupy a good deal of attention.

The Western Winter Poultry Show is to be held at the exposition with probably 2,500 birds and rabbits numbering close to a thousand.

The Night Horse Show is a feature that has been most attractive in the past. Ten thousand dollars in premiums has drawn to this spirited show the finest light and fancy horses in the West.

The building is worth seeing—it is regarded by livestock men all over the world as a model. Ten acres under one roof makes it the largest livestock exposition building in the world. A great many California people have arranged to attend and there will be room for more.

WORLD'S RECORD BY JERSEY YEARLING

What is perhaps the most unusual performance in the history of milk and butter fat records, is the test just finished by St. Mawes Lad's Lady, the new champion yearling cow of all breeds. The making of 829 pounds of butter fat by a yearling heifer is remarkable enough without taking into account that she did it under circumstances that are about opposite from the usual experiment of handling a cow on test. Instead of starting at a fast clip and slowing down at the finish, this youngster took things comparatively easy at the start and finished with a sprint. In her first month she made 50 pounds of fat and in the tenth month she made 85 pounds. This is partly explained by the fact that she started on two milkings a day, then went to three times a day and for the last three months was milked four times daily. That she has a wonderful constitution is further shown by a gain of 250 pounds in weight during the year. She is expected to calve soon and has been with calf 210 days of the test.

St. Mawes Lad's Lady is owned and was tested by Harry D. Iliff of Independence, Oregon, who says he fed her ten pounds of grain daily at the start of her test and increased this to twenty pounds at the high point of her record. This is in addition to hay pasture and ensilage. St. Mawes Lad's Lady is the third Oregon cow to break the yearling record in the last two years.

Summary of her authenticated fat test for one year: August 22-31, 1920, 232 lbs. milk, 14.27 lbs. fat; September, 833, 51.23; October, 908, 56.75; November, 834, 55.38; December, 890, 61.14; January, 1921, 891, 70.57; February, 839, 64.10; March, 973,72.78; April, 995, 77.81; May, 1185, 84.61; June, 1256, 85.91; July, 1194, 82.27; August 1-21, 726, 52.27; totals, 11756, 829.09; average percentage fat, 7.05.

DAIRY UNION TO MEET

There will be a meeting of the members of the National Dairy Union at St. Paul, October 14, for the purpose of electing directors and transacting other business. A meeting of the board of directors will be held at the same time, as will the National Dairy Show at the Minnesota Fair Grounds.

The National Dairy Union is an organization of dairy interests, formed to protect the industry from the fraudulent sale of any substitute for the product of the dairy; to protect the interests of the consumer of dairy products; to disseminate dairy knowledge, and in every way further the interests of dairymen and others engaged in the handling of dairy products.—A. M. Loomis, Secretary, 303 7th street, Washington.

An Extraordinary Sale of Richly Bred Young Holsteins

A. W. MORRIS & SONS CORPORATION, Woodland, Calif., will sell 55 registered Holsteins at public auction at State Fair Grounds, Sacramento, Calif., Thursday, November 3, 1921.

From the standpoint of the good of their own breeding operations they make this offering with the greatest reluctance, for the frank purpose of the sale is to realize a substantial sum of money necessary in the readjustment of their business, and in order to present cattle that will command substantial public appraisal they have had to cut deep into the young breeding herd on their new farm.

When the new farm was acquired some two years ago, the young cattle that had been raised on pasteurized milk were tuberculin tested and only those were placed on this farm. There are now over 150 head on the place and the entire lot was lately tuberculin tested with only three animals responding to the test.

In this sale offering there is not a single animal over four years old, and every female except one is sired by either Sir Aaggie De Kol Acme, King Morco Alcartra, Prince Gelsche Walker, King Mead of Riverside, or Segis Pontiac De Kol Burke.

Nineteen of these choice young females are due to calve before December 10, 1921, to Sir Aaggie De Kol Mead, the great young son of Miss Valley Mead De Kol Walker. Most of the balance are due to calve this fall or early next year to King Aaggie Mead, Sir Prince Aaggie Mead, or Sir Aaggie De Kol Acme.

These cattle are sold tuberculin tested and subject to retest by the buyer.

Responsible parties may arrange with the sale managers before sale for credit on the basis of one-third cash, balance in three equal payments in three, six and nine months, with approved notes bearing eight per cent interest.

Prospective buyers are invited to write for catalog of sale now.

MANAGED BY

California Breeders Sales and Pedigree Co.

C. L. Hughes, Sales Manager, Sacramento, Cal.

EDGEMOOR FARM

Owned by W. H. Dupee

SANTEE, CAL.

WILL OFFER

51 REGISTERED GUERNSEYS 51

AT PUBLIC AUCTION

Rhoades & Rhoades Sale Pavilion

Hynes, California

Thursday, October 20, at 10 A.M.

THE FEMALES:

There will be 41 females in the sale, all heifers, and practically all are bred. A large number are bred to MASTERPIECE OF EDGEMOOR, one of the greatest young sires of the Guernsey breed, also some to the undefeated show bull DEANIE'S MAROSE OF APPLETREE POINT.

The offering includes granddaughters of Governor of the Chene, Spottswood Daisy Pearl, Rose of Lanwater and a considerable group sired by a double grandson of Governor of the Chene.

These choice heifers should meet with the approval of the many prospective buyers who wish a foundation of young registered Guernsey females of substantial breeding and bred to bulls of unusual merit.

THE BULLS:

The ten bulls in the sale list include a number ready for service, of desirable type and approved breeding, and should find favor with both breeders and dairymen.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OLD TUBERCULIN TESTED AND SOLD SUBJECT TO 60 DAY RETEST.

TERMS OF SALE: Cash unless arrangements for credit are made prior to sale with the sale managers, California Breeders Sales and Pedigree Co., who will extend terms of one-third cash, balance in three equal payments in 3, 6 and 9 months, to responsible parties, with approved note bearing eight per cent interest.

CATALOG OF SALE FREE ON REQUEST

PLACE OF SALE: Rhoades & Rhoades Sale Pavilion is at Hynes, south Los Angeles on Downey and Long Beach Boulevard.

Auctioneers:
RHOADES & RHOADES
Los Angeles

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

First Prize Calf Herd, 1921 California State Fair

60 REAL FOUNDATION HEREFORDS
AT PUBLIC AUCTION

FROM

Nevada Hereford Ranch, Wells, Nev.

Owned by J. H. Cazier & Sons Co.

SELLING AT

State Fair Grounds, Sacramento, Cal.

Tuesday, November 1, at 10 a.m.

In the quality of its cattle; the ability and constructive policies of its owners; the unexcelled history of good health; and all around excellence as a real breeding herd, this herd ranks among the foremost collections of Herefords in America.

Cattle from this herd have invariably done well for new owners in California, and the present offering will consist of approximately 55 females and 5 bulls, mostly carrying the Harris Standard 2nd—Beau Blanchard 76th cross that has been the outstanding feature of our Hereford shows the past two years.

This then is an opportunity to buy Herefords of real foundation quality in every sense of the word, at a time when the breeding of these cattle offers one of the most attractive futures in agriculture.

THIS IS A FEDERAL ACCREDITED HERD

LIBERAL TERMS OF SALE: Responsible parties may make arrangements before sale, with the sale managers, for credit on the basis of one-half cash, balance in six months with approved note bearing eight per cent interest.

CATALOG OF SALE FREE ON REQUEST

HULL, Auctioneer
BUNTING, In the Ring

Managed by
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

MAKE YOUR PLANS NOW
TO VISIT THE

California Livestock and Horse Show

San Francisco, October 22nd to 30th

Four acres under canvas will house the greatest stock show ever held in this city and a show that will rate, judging by the entries to date, with the best livestock shows of the West.

Some of the finest American herds of Shorthorns, Herefords and Aberdeen-Angus have been entered, together with Holsteins, Jerseys, Guernseys, Ayrshires, several breeds of draft horses and sheep, poultry and pet stock.

The Horse Show will be held nightly. For this there have been entered some of the finest animals in the West, including drivers, saddle, hunters, jumpers, polo and other ponies.

Upon the success of this show depends the establishment of a permanent livestock show at San Francisco. Every livestock breeder should do his share to make the show a success.

REDUCED PASSENGER RATES ON ALL RAILROADS

California National Livestock Association

C. N. Hawkins President — John A. Bunting, Secretary
C. R. Thomas, General Manager

HOLSTEIN Fred Hartsook RANCH CATTLE

We have assembled an excellent foundation herd of females and will be glad to have breeders call. Fred Hartsook, Lankershim, California.

Do Not Miss the Fair at Riverside

By Jack Klein

YEAR after year the Southern California Fair at Riverside has grown until this year it has almost burst its bounds and the officials are hurrying and scurrying to provide adequate accommodations for all exhibitors. Entries of livestock are pouring in from all parts of California; the goat department is demanding additional space to house the biggest show ever held; entries for 250 chickens have been turned down because the building which was increased by half during the summer is unable to care for them. This is going to be a truly great show and everyone should be there.

Up to date 130 Holsteins have been entered, including the herds from the Maxwell Farms, Hartstook, Santa Monica Dairy Company, Sierra Vista Ranch, Clapp, and George Junior Republic. Such animals as King Segis Pontiac Jannek, grand champion at San Fernando, and Dichter Spofford Korndyke Lad 5 who was grand champion of the show last year and of the 1921 state fair, and cows who have won at the National as well as in many shows in this state will compete.

The Guernsey show will be the biggest of the year with herds from Dupee, Humphrey, Windmere Ranch, Adohr Stock Farm and Russell Cox competing. They will show such animals as Masterpiece of Edgemoor and his half borther, Inspiration of Edgemoor, who was senior champion at San Fernando. Rex of Maple Hill owned by Adohr will show against his half-brother, Nobleman of Maple Hill, this year's grand champion at the state fair, shown by Humphrey. In the females there will be plenty of competition with animals of state wide fame.

Jim Thorp will have 20 Jerseys to go against the southern herds of Wherrel, Thomas, Brown and others. In the Ayrshires the Meyer Elkhorn herd is booked to appear against the MacMinn herd from Phoenix, Arizona. A few animals from local herds will be there also.

So far in point of numbers the Berkshires are in the lead with over 100 head entered. The Italian Vineyard Co. and Humphrey have been fighting it out all the way down the line, and these two herds will meet Fred Hall and Chester Johns who have not shown against them this year. Both of the last named breeders have excellent stock and the big herds will have to yield in places. Along with these will be a number of entries by pig club boys and small breeders.

The Durocs will again be headed by Mong and Craig and the Sierra Vista Ranch. As the district around Riverside is pretty strong in red hogs there will be considerable competition from the small breeders.

The Poland Chinas are not to be so numerous but there will be some surprises. Fred Gatewood will show Navy Boy, who was grand champion at the state fair, and Buckland and McNeil will bring a large herd from Fresno to combat the Eastman Ranch and others.

The Hampshires will be more numerous than at any other fair. Lonnie Buell will have his good herd to compete with the Fairbanks Ranch, Gordon and Langdon and Dr. Newton.

Litter contests, with a lot of real money for the winners, have stirred up much enthusiasm amongst the hog men. The horse and heavy cattle departments are a bit disappointing in the number of entries so far but for hogs and dairy you will not find a stronger show. The agricultural departments also are flooded with entries and practically all of the southern counties will contest for the big prizes offered in that department.

There will be plenty of good amusements and horse racing to help make this a real fair.

The Present Sheep and Wool Situation

By Robt. F. Miller, Associate Professor, Sheep Husbandry, University of California

THE sheep population, as given by the 1920 census, has not changed materially in numbers from that of 1910, namely, about 2½ million, showing that the industry is holding its own in California. However, the number of sheep in the United States as a whole has decreased considerably. We hear general complaint just now about low prices and some even would have you think that the sheep and wool business has gone to the "demnition bow-wows," but one only needs to get out and try to buy good young breeding ewes to find that the owners are not turning loose. They are optimistic and not inclined to sell unless offered a good price.

Formerly wool production was the main issue in sheep raising throughout the west, but with the advent of greater mutton prices the tide gradually turned from wool to mutton until the last few years western sheepmen have been using mutton rams on their range ewes very generally. Hampshire and Shropshire rams have been especially popular for this purpose and the cross-bred lamb has found ready sale on the market.

The public is getting a tender, juicy lamb chop rather than a dry, tough mutton chop, the latter probably out of a Merino wether or an old ewe. The "Eat More Lamb" campaign has been helpful in bringing to the attention of the hotel keeper, restaurant proprietor and the housewife this change of quality in mutton which induced them to include this article in their bill of fare.

As a result of these two factors, mutton consumption has increased very materially during the last three or four years, and today more than ever before "black faced" rams are running rampant among western range flocks. The writer knows of one case where practically pure-bred Rambouillet ewes are being crossed with Shropshire rams. This is true not only in California but throughout the range states north and east of us.

Due to this system of breeding which calls for the disposal of both ewe and wether lambs the country is in a deplorable condition as regards good breeding ewes. It has been estimated that the average age of western range ewes today is about five years which is nearing the limit of their usefulness. Those that are being replaced are of an inferior type due to the presence of considerable "black face" blood. If this continues the inevitable is certain to happen, that is, complete depletion of western breeding ewes, and it is high time for the older experienced sheepmen to look toward restocking the range. "A word to the wise should be sufficient."

The production of early spring lambs is becoming more popular each year, and this spring sheepmen have realized well on their lambs, which has been a savior, in view of the low price of wood.

Due to a rather sluggish lamb market on this coast, California sheepmen have shipped train load after train load of lambs east and most of them netted $5 to $6 per head which is $1 to $2 more than they were offered at home.

The growers of Yuba, Sutter, Butte and Colusa Counties organized last spring and by appealing to the railroads, special through trains run on schedule time, were put on which made it possible to land lambs in Chicago in only five feedings en route, while before it was necessary to feed eight and ten times. A better quality of alfalfa hay was provided at the unloading stations and both the Southern Pacific and Western Pacific have agreed to enlarge their feeding yards and give the sheepmen the best of service in another year. Another illustration where organization saved the grower thousands of dollars.

This is the work of only a few counties; why not make it statewide and

Keep your hogs free from lice

Keep their sleeping quarters, the feeding grounds, pure and healthful. Use the sprinkling can. Add four tablespoonfuls of Dr. Hess Dip and Disinfectant to each gallon of water. Sprinkle the animal body to kill the lice, the sleeping quarters and feeding grounds to destroy the disease germs. Or provide a wallow, to which add about one gallon D and D to every 70 gallons of water. Disinfect the barns, the poultry house.

Also use it about the home, in the sick room, sink and cesspools, to establish better health conditions.

DR. HESS & CLARK Ashland, Ohio

DR. HESS DIP and DISINFECTANT

RHOADES & RHOADES

Expert Livestock Auctioneers
1505 So. Main St.
Los Angeles, Cal.
Sales Pavilion
Stock Yards at
Hynes, Cal.

WE CONDUCT
SALES OF
REG. DAIRY CATTLE
GRADE CATTLE
GEN. FARM SALES
in all parts of
Calif. and adjoining States.
Satisfaction guaranteed.
Write for dates and terms.

Mission Herefords

Ultimately
Why Not Now?

We want everyone to see this wonderful herd

Mission Hereford Farm
J. A. Bunting
Phone 6 F 14
Mission San Jose Cal.

DIAMOND G HEREFORDS

A few choice young bulls, big, heavy-boned husky fellows sired by DON PERFECT 2ND, one of the best sires in the West. Priced right and guaranteed.

H. H. Gable Esparto, Cal.

Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

have the California Wool Growers Association direct the shipping of lambs so as to realize the best there is in the business today. Without proper cooperation there is danger of flooding a certain market and the growers would lose heavily in a single shipment. On the other hand, it would be a simple matter to station a man at Laramie, as has been suggested, and direct the lamb shipment to the proper place. Correct marketing is the greatest factor in making a business profitable today, and I say, sheepmen, get together and you can make your business the most profitable livestock business there is.

HAMPSHIRE BREEDERS

The California Hampshire Swine Association held its annual meeting at the Porter Hotel, San Fernando, September 24. Some reports were received and some business transacted, but it was found that all the business could not be finished so the meeting adjourned to meet in Riverside at the Southern California Fair. Officers elected were: vice-president, Gwyn Thurmond; secretary-treasurer, E. A. Newton. Members present were Messrs. Helm, Thurmond, Buell, Winn, F. A. Langdon, H. L. Langdon, Harvery, Dinsmoore, Gilbert, Newton.

HOLSTEIN-FRIESIAN ANNUAL

The regular annual meeting of the Southern California Holstein-Friesian Association will be held at the Reynolds Hotel in Riverside at 7:30 P. M., on the evening of Wednesday, October 12. This will be on the same day that Holsteins are judged at the fair. Present officers of the association are: president, Geo. M. Brown; secretary, R. A. Condee.

DON'T ENTER SILO TILL BLOWER IS TURNED ON

Turn the machine blower on and leave it on for at least two minutes before anyone is permitted to enter a partly filled silo. Unless this rule is followed the result is likely to be dead men.

Annually fatalities occur as a result of workmen entering half filled silos after the deadly carbon monoxide gases have had a chance to accumulate directly above the freshly ensiled corn. A few days ago two Illinois farmers were killed and another was rendered seriously sick by silo gases which are almost as dangerous as the poisonous mustard gases used during the recent war. In this instance one of the farm workmen entered a 50 foot silo which had been half filled the previous day. Some time elapsed and when he did not come out another of the hands ascended into the silo. Neither reappeared, though the other workers shouted to them repeatedly to come down.

Fearing an accident, the farm owner finally climbed into the silo. He also was immediately overcome by the poisonous fumes and only the fact that others followed him, forced open the extra silo doors and carried him into the open air saved his life. The other two men were suffocated immediately.

Each year a number of accidents of this kind occur, due largely to carelessness and ignorance of the proper methods of eradicating the dangerous gases. The preventive measures are simple and efficient and where they are followed there is no danger.

No workman should ever enter a partly filled silo after the ensiled corn has had an opportunity to develop poisonous carbon monoxide gases overnight until the machine blower has been started. The fresh air dilutes and scatters the obnoxious gases to the extent that they are rendered harmless. After the blower has been operated for two minutes it is perfectly safe for the workmen to enter. Another precaution which should be practiced religiously is not to wedge the silo doors into place until they are needed to prevent the waste of the ensiled corn. Many farmers follow the practice of placing most of the doors before any great amount of corn is cut and deposited in the silo. This prevents free circulation of air through the silo which in turn operates to favor the accumulation of carbon monoxide and other deadly silo gases.

DISPERSAL SALE

One of Stanislaus County's Choicest Herds

37 Registered Holsteins 37

Owned by JOHN SAXER, MODESTO, CAL.

Wednesday, October 12, at 11 a.m.

The sale will also include 6 head from the good herd of W. A. Walker, Ripon, Calif.

This is an offering of splendid type, substantial breeding, and presented in excellent physical condition. The offering includes

A 31 POUND GRANDDAUGHTER OF KING OF THE PONTIACS, out of a daughter of Sir Skylark Ormsby Hengerveld.

THREE DAUGHTERS OF SIR SKYLARK ORMSBY HENGERVELD, one of the very best sires ever developed in California.

A 2 YEAR OLD DAUGHTER of the great heifer Moorland Colantha Rose, sired by a 32 lb. son of King Mead of Riverside.

TWIN DAUGHTERS OF SEGIS PONTIAC DE KOL DUTCH, the Freeman & Edwards bull whose three nearest dams are all 1000 lb. yearly record cows.

THREE DAUGHTERS OF SIR WITKOP DE KOL, a three-quarter brother to the noted Freeman & Edwards heifer, Belle Faskie De Kol Witkop.

A SPLENDID LOT OF YOUNG COWS, many with good records, and representing most attractive and popular blood lines.

A SON OF MOORLAND COLANTHA ROSE

The sale will also contain a ten months old son of the great heifer, Moorland Colantha Rose, sired by Segis Dutch Ormsby, a 32 lb. son of Segis Pontiac De Kol Dutch. He is a high class individual, and should go to head a good herd of registered females.

Other young bulls of choice breeding, including two sons of the 31 lb. cow, Segis Johanna De Kol of Edelweiss.

Every animal positively guaranteed to be a breeder; every animal over six months old Tuberculin tested and sold subject to retest by the buyer unless otherwise announced at sale.

TERMS OF SALE: Cash, unless arrangements for credit are made before sale with the sale managers, California Breeders Sales and Pedigree Co., who will extend terms of one-third cash, balance in three equal payments in 3, 6, and 9 months, to responsible parties with approved note bearing eight per cent interest.

CATALOG OF SALE FREE ON REQUEST

Auctioneers:
Ben A. Rhoades, Los Angeles
John A Davis, Manteca

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

AUCTION SALE

35 High Grade Holstein Cows and Heifers

15 Registered Holstein Bulls

West Lake Stock Farm, Burrell, Cal.

Monday, October 17

At 10 A.M.

In order to make room for his rapidly increasing herd of registered Holsteins, Mr. J. R. Crawford will make a complete dispersal of his herd of grade Holstein cows and heifers. Here is an opportunity to buy very desirable dairy cows and heifers.

15 registered Holstein bulls, nearly all ready for service, will be sold, and they are an exceptionally well bred lot, growthy and in good condition.

RESPONSIBLE PARTIES MAY SECURE VERY LIBERAL TERMS FROM MR. CRAWFORD IF ARRANGEMENTS ARE MADE BEFORE SALE. ADDRESS J. R. CRAWFORD, BURRELL, CALIF.

WEST LAKE STOCK FARM is 20 miles south and 5 miles west of Fresno; 2 miles east of Burrell; 4 miles north of Riverdale.

Auctioneer:
Col. Ben A. Rhoades, Los Angeles

Sale Manager
C. L. HUGHES, Sacramento, Cal.

Herd Bulls

Harris Standard 2d

Beau Blanchard 76

Nevada Hereford Ranch

J. H. Cazier & Sons
Wells, Nevada

A government accredited herd. No reactor in 16 years. A herd whose record in the show and sale ring is only surpassed by the esteem accorded its productions by cattlemen. We can furnish bulls or females to fill any need—and at sound prices. Visit our herd or write for information.

Tosantos Walker Mead

Born December 9, 1919
Exceptional Yearly Record Backing

His five nearest dams average over 1,000 lbs. butter in a year. He is out of a wonderful daughter of Prince Gelsche Walker and Sir Aaggie Mead De Kol. He is a show bull and is priced for immediate sale.

E. D. BARRY, JR. Workman and Azusa Ave., Covina, Cal.

35 TOP NOTCH HEREFORDS

— AT PUBLIC AUCTION —

California National Livestock Show Grounds

SAN FRANCISCO

Wednesday, October 26, at 1 P.M.

Providing an opportunity right at home to buy Herefords of most approved character and breeding. The cattle for this sale will be selected largely from the show herds of leading breeders in Nevada, Oregon, and California, by a committee representing

Pacific Coast Hereford Cattle Breeders Association

J. I. Cazier, President — J. A. Bunting, Secretary

The wonderful exhibit of young Herefords at this year's California State Fair was a revelation of the amazing progress the breed has made in California during the past few years, a progress that is right now only at its beginning.

Why not lay your foundation in this sale for one of the most useful, most profitable agricultural activities—the breeding of registered Herefords.

Write for circular and catalog of sale.

HULL, Auctioneer — BUNTING, in the Ring

MANAGED BY

CALIFORNIA BREEDERS' SALES AND PEDIGREE CO.

J. M. HENDERSON, President — C. L. HUGHES, Sales Manager

211-212 OCHSNER BLDG. — SACRAMENTO, CALIFORNIA

Santa Anita Rancho

Pure Bred Registered Percheron, Arabian and Thoroughbred Horses, Holstein-Friesian Cattle, Southdown Sheep, Big Type Poland China Swine, Mammoth Jacks and Jennets.

Young Breeding Stock of All Kinds

Every Animal Guaranteed

Santa Anita Rancho and Anoakia Breeding Farm

SANTA ANITA — Anita M. Baldwin, Owner — CALIFORNIA

GUASTI BERKSHIRES

We are breeding some awfully good Berkshires and are having very good success in the shows this fall.

We can supply your demand for

Big Modern Type Berkshires

in any class at reasonable prices.

Inquire about our bred gilts and young boars.

ITALIAN VINEYARD COMPANY

Alex. M. Wilson, Supt. — Guasti, Cal.

P. S.—Farmers and pig club boys given special attention.

SANTA MONICA DAIRY COMPANY

HOME OF QUALITY HOLSTEINS

Sons of KING SEGIS PONTIAC JANNEK

From High Producing Dams

Write for Particulars to — VENICE, CAL. — Visitors Always Welcome

Watch La Tierra de Uva Durocs — **Pathfinders, Orions, Sensations**

Three Top Boars

Fannie's Orion King assisted by Uneeda Orion B, 2nd prize aged boar at State Fair, 1920, and grand champion at Glenn County Fair, 1919, and Valley View's Sensation, 3rd prize junior boar pig and litter mate to 1st prize and reserve champion at State Fair, 1920, and a wonderful string of prize winning sows and gilts, including Miss Sensation, 1st sow pig and reserve champion at State Fair

C. C. ELLIS — Exeter, Cal.

Prevents Hog Cholera—Cresy-lol

A standardized Disinfectant. Dilute 1 part with 50 parts of water and use as spray or dip. Manufactured by

ARTHUR R. MAAS, Chemist

308 E. 8th St., Los Angeles, Calif. Write for circular

The Cultivator Costs Only $1.00 Per Year

TO REDUCE FARM FIRE LOSSES

FARM fires cost about $20,000,000 a year—$18,166,710 in 1918. Of the fires that year 33 per cent were from causes classed as preventable, 3 per cent from partly preventable causes, and 30 per cent unknown but believed to have been largely preventable. With inadequate fire fighting equipment on farms fires are hard to control. Prevention is the best way to deal with them.

Defective chimneys and flues took toll to the extent of $1,962,031; sparks on roofs, $1,181,171; careless use of matches by smokers and others, $1,071,987; petroleum and its products, $732,067, stoves, furnaces, boilers, and their pipes, $674,968.

The largest item listed as partly preventable is lightning, $3,933,950.

Fire prevention day should be made a special time for looking over the premises to see that the buildings are in the best practicable shape to prevent and resist fire; that inflammable rubbish is cleared away; and that habits of safety are instilled in the handling of matches, lamps, stoves, and kerosene and gasoline.

Gasoline has come to play such an important part in farm life that special care should be taken to see that it is not stored in inflammable buildings and is never opened in the presence of uncovered flame.

Fire Prevention week ends on the semi-centennial of the great Chicago fire. While occurring in a great city the traditional cause of this fire was one which is liable to occur in the country, the upsetting of a lantern in a stable. If lanterns must be used in barns, they should be kept in good condition, set or hung in a safe place, and never filled or lighted in the barn.

Numerous disastrous fires are caused by thrashing machines, both by scattered sparks and embers and by dust explosions in the separators. All smokestacks should have spark arresters, and the ground around the boiler should be kept clear and wet down if necessary. Grain dust explosions are largely preventable. The United States department of agriculture has made exhaustive studies of the subject and is prepared to recommend adequate safeguards.

Serious losses are caused by sparks from locomotives, which ignite dry wooden shingle roofs and start many fires in straw, stubble, and grass during dry seasons. If a railroad runs through the farm, it will pay to plow a few furrows along the right of way as a fire break.

Kerosene lamps should be examined to see that the burners are in good condition, and should never be left where they may be upset. Kerosene and gasoline receptacles should be kept apart and should be so different as to avoid possibility of a mistake.

Ordinary friction matches should be kept in safe receptacles, away from children, and never carried loose. Smoking in barns and garages never should be permitted. Fire marshals of western states report greater fire losses in grain and straw the past season from carelessly thrown matches, engine sparks and automobile and tractor backfire, than ever before.

Buildings may be made safer by seeing that the chimneys are without cracks and free of soot, which may take fire and scatter sparks on dry roofs. Flues which may become hot should be covered with asbestos and any near-by walls and ceilings protected. There should be a sheet of metal under every stove.

COMING EVENTS

Siskiyou County Fair, Yreka, October 9-15.

Placer County Fruit Growers' Convention, Auburn, Oct. 11-12.

Southern California Fair, Riverside, Oct. 11-16.

California State Grange, 49th Annual Convention, Yreka, October 18.

California Association of Nurserymen Annual Convention, Exposition Park, Los Angeles, Oct. 20-22.

California Flower and Horticultural Exhibition, Exposition Park, Los Angeles, October 20-26.

Date Festival, Coachella Valley, Oct. 21-23.

California National Livestock Show, San Francisco, Oct. 22-30.

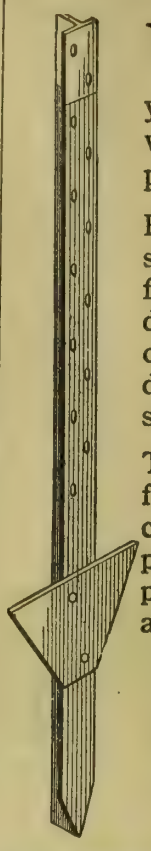
Pacific International Livestock Exposition, Portland, Oregon, Nov. 5-12.

State College of Agriculture Fruit Show, Berkeley, Nov. 17-19.

Orange and Olive Exposition, Oroville, middle of November.

American Farm Bureau Federation Annual Meeting, Atlanta, Georgia, November 21-23.

Stanislaus County Poultrymen's Association Show, Modesto, Dec. 4-7.



WHY build a new fence every few years and be annoyed with constant repairs?

RED TOPS give you a strong—permanent fence line. The staples don't loosen—the posts can't burn. No holes to dig—they drive like a stake.

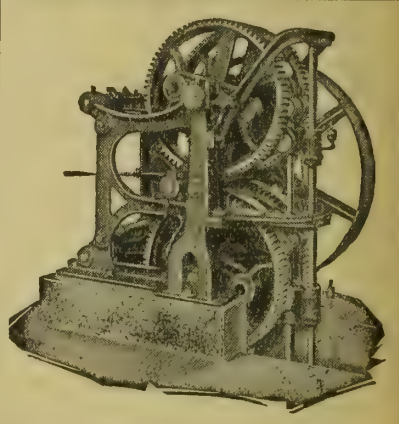
They cost less in the fence line than wood or concrete posts—and practically eliminate repairs. Made in angles and tees.

Send for Circular giving all the facts

RED TOP STEEL POST COMPANY

431 Pacific Finance Building
Los Angeles, Cal.

Red Top GUARANTEED **Steel Fence Posts**



THE POMONA

Duplex Plunger Deep Well Pumps

are solving the Pumping problems for many users during the period of low water levels. They will lift the water to the surface, and, if desired, deliver it to high elevations above ground and at lower power cost than any other system of Pumping water.

Pomona Pump can be seen in operation at the coming Riverside Fair. Look for our exhibit.

Pomona Manufacturing Co

POMONA, CAL.

Manufacturers of the

POMONA Irrigation Gates and Valves

For Profitable Durocs

As we have sold out of bred sows and gilts, we are now offering big growthy fall pigs, either sex, at attractive prices.

D. G. Cummins & Son

Route 1 — Visalia, Cal.

Classified Liners

The direct selling method from producer to consumer, and a clearing house for over 40,000 subscribers. Weekly Liner rates: Single insertion 4½ cents per word; 45c per issue minimum charge. Cash with Order.

Mail all classified copy to Los Angeles Office.

POULTRY

Continued requests are being received by the California Cultivator for varieties of poultry not advertised in our columns. If any of you, our readers and friends, have any you wish to dispose of, send a small advertisement to this office and you will be doing our readers a service as well as yourselves.

Day Old Pullets—Here is your chance to get day old White Leghorn and Ancona chicks, guaranteed at least 90 per cent pullets. We are taking orders fast for October and November delivery. We also have R. I. Red and Barred Rock chicks but do not separate the sex. All chicks are from strictly thoroughbred laying stock and are hatched right and shipped by Special Delivery Parcel Post. Send for prices and get your orders in at once. Orange County Hatchery, Santa Ana, California.

Petaluma Hatchery—Established 1902 by L. W. Clark. White and Brown Leghorn chicks from heavy laying free range stock, every Monday and Thursday. We positively guarantee safe arrival and full count of good strong chicks and no questions asked. Send for prices and terms. L. W. Clark, Petaluma, California.

It's no wonder so many poultry raisers make a failure of the business. Without any knowledge of raising poultry people will branch out expecting to make a success. By putting in practice the valuable contents of POULTRY FOR PROFIT, $1.00 postpaid, success is assured in the poultry business. Cultivator Publishing Company, Los Angeles, California.

White Leghorn Baby Chicks: Walter Hogan stock. We get all our eggs from one flock of over 4,000 Walter Hogan hens that have been carefully Hoganized. Our specialty is first class White Leghorn chicks that satisfy our customers. We will have chicks every week. Lyon Hatchery, Gardena, California.

Poultry Supplies — Queen incubators, brooder stoves. Reliable Blue Flame Brooders, electric incubators and brooders. Most complete stock of supplies in Northern California. Baby chicks, all breeds that live and lay. Write us for prices. C. E. Hill Co., 418 11th St., Oakland, California.

White King Pigeons of fine strain. Will dispose of old breeders at $3 a pair and unmated birds at $2 a pair up to Nov. 1st. Guaranteed to be as good birds as represented. Write for catalog. Paradise Valley Poultry Ranch, National City, California.

Chicks Every Week from good layers. Fall Broilers pay. Pullets make good layers. R. I. Reds, Barred Rocks, White Leghorns. Safe arrival guaranteed. Write for circular. Stubbe Poultry Ranch & Hatchery, P. O. Box 67, Palo Alto, California.

Baby Chicks from my heavy laying, carefully selected strain of pure bred S. C. White Leghorns. I am booking orders now for September and October delivery. Good chicks at reasonable prices. Write for particulars. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

White Leghorn Baby Chicks from heaviest laying (Hoganized) stock. Safe delivery live, vigorous chicks guaranteed. No money in advance; pay on delivery. Prices on request. Established 1898. MUST HATCH INCUBATOR CO., 438 Seventh St., Petaluma, California.

200 Egg Strain S. C. R. I. Reds—Cockerels from hens with trapnest records of over 200 eggs in 12 months; $5.00 and $10.00 each. Also a few cockerels from Ward's prize winners at $5.00 to $25.00 each. Chester D. McCord, Galt, California.

For Sale—Barred Plymouth Rocks; prize winners; some extra fine cockerels for sale now. Eggs for hatching in season; satisfaction guaranteed. Mrs. J. W. Snodgrass, Los Olivos, California.

Barred Plymouth Rocks — "Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Vodden, Los Gatos, California.

White Leghorn Baby Chix from Petaluma's heaviest producing stock. We guarantee safe arrival. Literature on request. Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

Watch Us Grow: Fall chicks, Rhode Island Reds, B. Rocks, White and Brown Leghorns and Anconas. E. W. Ohlen, Campbell, California.

Regal White Wyandotte cockerels, February hatch. White Feather Farm, Howard Burns, R. R. No. 1, Chowchilla, California.

Eastman's "Bred-to-Lay" Hoganized, trapnested Barred Rocks. FALL CHICKS. Fairmead Poultry Farm, Fairmead, California.

Success in business is attained by experience and knowledge. The poultry business can be made to pay by following the teachings and information contained in POULTRY FOR PROFIT, $1.00 postpaid. Cultivator Publishing Company, Los Angeles, California.

HORTICULTURAL PRINTING

Catalogues and Booklets, office forms and correspondence stationery for the nursery, seed and florist trade; half tone cuts of many standard plants. Correspondence invited. The Kruckeberg Press, 236 Court St., Los Angeles

RABBITS

Rabbits (Fur Bearing); all breeds guinea pigs. Prices right, start now. W. Murphy, P. O. Box 145-E, Menlo Park, California.

Pedigreed Flemish Giants — No fancy prices. Maud Beeching, 1578 W. 46th St., Los Angeles.

FARM LAND FOR SALE

Before Buying that California ranch consult me; avoid mistakes and disappointments. I'm right on the ground, years of experience with grading, planting, training, cultivation, fertilization and irrigation in orchard and field from Los Angeles to San Diego and from the Ocean to the Colorado River. Better safe than sorry. I have no land to sell, no agent, just a working man with a practical working knowledge of conditions in Southern California. Write California Cultivator, Box 1.

FARM RENTERS

You can become a farm owner on terms very much like those you are now paying to rent land. We have deep, rich soil with complete irrigation and drainage systems. We are willing to cooperate with hard working, reliable men who want to become owners of farms. Sutter Basin (in the heart of the Sacramento Valley) is your opportunity. Write now.
SUTTER BASIN COMPANY,
California Fruit Bldg., Sacramento, Calif.

For Sale: 45½ acre dairy, milking 28 cows; 30 acres alfalfa, modern sanitary barn and milk house, shop, tools all complete, 6 room house and bath, family orchard. Price reasonable, terms. For further particulars address Box 271, Soledad, California. Phone 19F5.

Lake County Land for Sale—Bearing pear and prune orchards, dairy and stock farms. Alfalfa and grain land and other properties. Address Joe Hyman, Lakeport, Lake County, California.

20 Acre Alfalfa Dairy Ranch, none better in Turlock irrigation district; also cows, hay. Harmon Berg, Hughson, California.

For Sale—595 acre improved mountain ranch; hog tight, irrigation; no exchange; particulars. R. W. Lipkeman, Box 591, Sonora, California.

For Sale — Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

CATTLE

Auction Sale — 15 registered Holstein bulls; 35 grade Holstein cows and heifers. In order to make room for his rapidly growing herd of registered Holsteins, Mr. J. R. Crawford will sell his entire herd of grade Holsteins and fifteen richly bred registered Holstein bulls, nearly all ready for service. The owner, J. R. Crawford, Burrell, Calif., is prepared to extend liberal terms to buyers who make arrangements with him before sale. Sale will begin at 10 A. M., Monday, October 17, at West Lake Stock Farm, 20 miles south and 5 miles west of Fresno; 2 miles east of Burrell; 4 miles north of Riverdale. Auctioneer, Col. Ben A. Rhoades, Los Angeles. Sale Manager, C. L. Hughes, Sacramento.

Guernseys — Grape Wild Farms—Berkshires—Young bulls, from calf age up to 16 months old, of May Rose breeding and out of A. R. cows. Bred sows and gilts, service boars and pigs of both sexes for sale. Grape Wild Farms, Escalon, California. A. B. Humphrey, Proprietor.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Berylwood Stock Farm—Breeders of registered Holstein cattle and Duroc-Jersey swine. Every cow an A. R. O. and T. B. tested. Bulls and females for sale. J. W. Snodgrass, Hueneme, California.

Yearly Record Holsteins—Bulls from 500 to 1,000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California

Polled Herefords and Durocs — Diablo Stock Farm, G. W. Emmons, Prop., Danville, California.

Some Choice registered Holstein heifers and bulls of serviceable age for sale. J. W. Scudder, Escalon, California.

Winsor Ranch Jerseys—Bull calves with production behind them, at reasonable prices. BONITA, CALIFORNIA.

MACHINERY

For Sale — Another big drop. Rebuilt windmills, tanks, pumps, cylinders. Why pay more. We make galzanized tanks, 400 gallons, $16.25; 600, $26.25; 1000, $37.25; 2000 capacity, $48.25. New irrigating pipe, 3-in., $13.50; 4-in., $17.50. Demmitt Co., office 120 N. Main, L. A. Phone 15191.

For Sale—Tractor—One Cleveland Tractor in good condition, new steering bands, new bearings and rings, also good 5 ft. double disc. Price $400. Call Downey 772. Write M. R. Cheesman, R. D. 1, Rivera, California.

SEEDS AND PLANTS

For Sale — Mountain Grown Strawberry Plants for fall planting. Carolina $2, Banner $1.50, Klondike and Brandywine $1.25 per hundred by mail postpaid. B. Bryan, Camp Baldy, California.

Alfalfa Seed — Certified Hairy Peruvian, Smooth Peruvian, Common. Write for samples and prices. Delta Seed & Feed Co., Yuma, Arizona.

FOR LEASE

For Lease—80 acre improved ranch, 8 miles west of Bakersfield, ½ mile from paved highway, store, school, etc. Splendid water condition, good pumping plant, all necessary buildings. W. F. Marks, owner, 1318 West Third St., Los Angeles.

TREES

FOR SALE — 100,000 SOUR ORANGE SEED BED STOCK; WASHINGTON NAVEL, VALENCIA LATE ORANGES AND EUREKA LEMON TREES; ALSO FUERTE, LYON, PUEBLA AND DICKEY "A" AVOCADO TREES. T. J. WALKER, FIRST NATIONAL BANK BUILDING, SAN FERNANDO, CALIFORNIA.

Nursery Stock at bargain prices. Prune 10c each; grafted walnuts $1.00 each; pears 20c each; Black caps $20.00 per 1,000; other stocks at bargain prices. Submit your want list, and send for planters list. 31 years in business. Carlton Nursery Co., Carlton, Oregon.

For Sale—Grafted walnut trees, also citrus and deciduous trees. Order now for 1922 delivery. Get my prices. Ketscher's Nursery, 1101 E. 4th Street, Santa Ana, California. Phone 572-W.

Reliable Trees and grapevines at a fair price. Write us for price list. We ship on approval. J. F. Miller & Sons, Healdsburg, Cal.

For Sale—Budded Walnut Trees, Eureka and Placentia Perfection. Mrs. John M. Koller, Puente, California.

Citrus Nurseries, Murphy Oil Company, East Whittier California. Selected stock for sale; inspection invited.

DUROC-JERSEYS

Weanling Boars and Gilts by Pathfinder Wonder (Great Wonder I Am ex an 800 lb. Pathfinder sow) for $10 each. Bred sows and gilts. Derryfield Farm, Capital National Bank Bldg., Sacramento, California.

Greenwood Farm Durocs — Moderate prices on bred gilts and weanling boars. Select individuals. Most popular breeding. H. C. Witherow, Mgr., Live Oak, Sutter County, California.

Boyanna Big Type Durocs — Breeding stock, priced right for sale. Inquiries invited. Satisfaction guaranteed. J. Boyd Harrold, Dixon, California.

Big Type Durocs—Better Durocs at right prices. Harvey M. Berglund, Dixon, California.

Winsor Ranch Durocs—The best of stock at reasonable prices. BONITA, CALIFORNIA.

BERKSHIRES

Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Calae Orchards, Martinez, California.

POLAND-CHINAS

Lendorris Ranch Polands — Big type Poland Chinas of all ages for sale. The kind that makes weight quickly. Weanling boars and gilts sired by Lendorris Liberator out of Lendorris Liberty Bond sows. Now ready for delivery. W. L. Haag & Son, Hanford, California.

Big Type Poland China open and bred gilts, young and service boars and young pigs. Your letter expressing your wants will bring a quick reply. California Swine Corporation, H. A. Patten, Manager, Route 2, Box 38, Escalon, California.

Big Boned Poland Chinas—Bred gilts and young boars priced to sell at once. Young stock, either sex, for sale at all times. Bassett Bros., Hanford, California

CHESTER WHITES

Chester White Swine—Service boars and gilts bred for November farrow. Best of breeding at reasonable prices. Howard Vaughn, Dixon, California.

WANTED

Wanted—Thoroughly reliable man to raise hogs on 50-50 basis. Palo Verde Valley—must furnish farm equipment and a little cash. I furnish land and water and breeding stock. Some natural feed for cattle. Good proposition for right man. References. W. H. Goodrich, 812 Kensington Rd., Los Angeles. Phone 558266.

Wanted—Walnuts Meats and cull walnuts. We solicit culls for cracking only, paying cash. Fred L. Mitchell & Son, 214 French St., Santa Ana, California. Phone 551-M.

Wanted to Hear from owner of a farm or good land for sale; please state lowest purchase price. L. Jones, Box 981, Olney, Illinois.

We Will Buy your Calla Lily roots. If you have 100 or more, write us. Sevin-Vincent Co., 512 Washington St., San Francisco, California.

Wanted—Avocado Seed, Thompson and Malaga vines. L. A. Tuttle Nurseries, Pasadena, California.

ROOFING MATERIAL

Save Your Roof for 15c a gallon with Asphaltoid. Direct from producer to consumer permits this low price of 15c a gallon. The finest roofing and preservative paint under sun. This is a natural product—why pay more for acid treated asphalt that eats your roof? Mail orders, barrel lots promptly shipped. Equally good for shingle, paper or metal roofs. Woolner Oil Co., 4th and Commonwealth, Los Angeles.

Roofing Paper—
Firsts complete with nails and cement.
1-Ply $1.25; 2-Ply $1.60; 3-Ply $2.20.
Lead & Oil Paint.....$2.20 a gal.
Roof Paint Special.....35c a gal.
Prompt Deliveries on Mail Orders.
ANGELUS ROOFING & PAPER CO.
764-766-768 So. San Pedro Street,
Phone Bdway 5401. Los Angeles, Calif.

TURKEYS

For Sale—Have very fine strain of Bronze Turkey Toms and hens two years old, raised 300 fine birds from them this year; come see them if possible. R. D. 4, Box 29, Anaheim, California.

For Sale — White Holland Toms, six months old, large, healthy birds of fine stock. For information write Garfield Johnson, Box 116, Fairoaks, Cal.

Bourbon Red Turkeys, Buff Orpingtons. The Ferris Ranch, Reservoir Street, Pomona, California.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

MISCELLANEOUS

For Sale—Orchard Heaters—5,000 7-gallon "Citrus" Heaters, 500 "Hislop" Heaters. Practically as good as new, having been used but very little. Will sell at bargain prices. Call or write. Charles C. Chapman, Fullerton, California.

When Planting Alfalfa, Clover or Peas treat your seed with Pennewell's Pure Culture Soil Bacteria. Costs only 50c an acre, postage paid. None better. Penn Laboratories, 461 Market St., San Francisco, California.

GEESE

Some Fine Toulouse Geese, a year old, bred from imported strain. Will sell at $15 a pair or $20 a trio until surplus stock is disposed of. All guaranteed to be in good condition. Write for catalog. Paradise Valley Poultry Ranch, National City,

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Your copy of our thirty-six page fully illustrated catalogue containing complete description of our extensive line of Beekeepers' Supplies, is now ready and will be mailed to you free on request. Write for it today—Read the description of our new product

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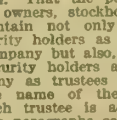
"Home of the Honey Bee"



A. I. ROOT CO.
OF CALIFORNIA
1824 East 15th Street
Los Angeles Cal.

THE TRIAL OF FIRE

(Continued from Page 377.)

accordance with the dictates of justice. There can be no doubt as to your guilt. You have made it impossible for citizens and municipalities to live safely. You have killed thousands and devastated whole cities by your iniquity. You have filled the land with misery. You have undermined character, lowered efficiency and retarded progress. Incarceration is too good for such as you. Instead you shall be labeled so that all men shall know you and shall shun your presence. You shall be an exile—a man without a country—unless some Nation is so short-sighted as to take you in and call you her own. America banishes you forever. Officer, take him away. (Officer exits with prisoner.)

Judge: The court is adjourned.

(Curtain)

National Board of Fire Underwriters

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

of California Cultivator, published weekly at Los Angeles, Cal., for October 1, 1921.

STATE OF CALIFORNIA,
County of Los Angeles, ss.

Before me, a Notary Public in and for the State and County aforesaid, personally appeared Frank J. Ironmonger, who, having been duly sworn according to law, deposes and says that he is the publisher and business manager of the California Cultivator and that the following is to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are:

NAME OF—	POSTOFFICE ADDRESS
Publisher, Cultivator Publishing Co.,	Los Angeles, Cal.
Editor, C. B. Messenger,	Los Angeles, Cal.
Managing Editor,	None
Business Mgr., Frank J. Ironmonger,	Los Angeles, Cal.

2. That the owners are (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding one per cent or more of the total amount of stock)

Cultivator Publishing Co.,	Los Angeles, Cal.
R. M. Teague,	San Dimas, Cal.
Frank J. Ironmonger, Hollywood,	Los Angeles, Cal.
J. H. Yetter,	Los Angeles, Cal.
W. R. Wood	San Dimas, Cal.
E. H. Sanford	Claremont, Cal.

3. That the known bondholders, mortgagees, and other security holders owning or holding one per cent or more of the total amount of bonds, mortgages, or other securities, are: (If there are none, so state). None.

4. That the paragraphs next above, giving names of owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholders or security holders appear upon the books of the company as trustees or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest, direct or indirect, in the said stock, bonds, or other securities as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is ——. (This information is required from daily publications only).

FRANK J. IRONMONGER, Business Manager

Sworn to and subscribed before me this 28th day of September, 1921.

(SEAL) ROBERT WHITFIELD,
Notary Public in and for Los Angeles County, Cal.
(My commission expires April 4, 1923)

Vigilance

THE VALUE TO THE PUBLIC of the Bell System service is based on the reliability, promptness and accuracy of that service.

As quality of service depends upon the economic operation of all telephone activities, vigilance begins where work begins. Science and engineering skill enter into the selection of all raw materials; and into the adapting and combining of these materials to the end that the finished product may be most efficient in operation and endurance, and produced at the least cost.

A series of progressive tests are made at every step during the transformation of these materials into telephone plant and equipment. And when all these complicated devices, with their tens of thousands of delicately constructed parts, are set in operation they are still subjected to continuous, exhaustive tests.

As the best of materials and the most complete machinery is of little value without correct operation, the same ceaseless vigilance is given to the character of service rendered in providing telephone communication for the public.

Such constant vigilance in regard to every detail of telephone activity was instrumental in upholding standards during the trials of reconstruction. And this same vigilance has had much to do with returning the telephone to the high standard of service it is now offering the public.

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One Policy, One System, Universal Service, and all directed toward Better Service

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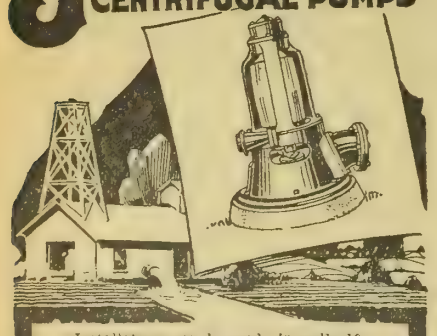

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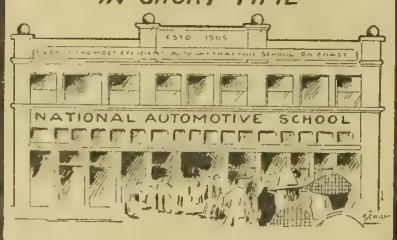
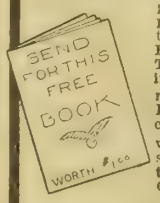


Throughout the entire period of financial depression, Los Angeles has been the one bright spot on the business map. Business is good here, and skilled mechanics and ignition men are in great demand at big wages. Never before have such wonderful opportunities been available to earn up to $400.00 per month. Learn the big paying Auto and Tractor trades under ideal climatic conditions in the largest and oldest mechanical institution on the Pacific Coast. (Est. 1905). Complete instruction in Auto Repairing, Ignition Work, Battery Work, Driving, Machine Practice, Vulcanizing and Tractioneering. Three big instruction buildings; every modern equipment. Tools Free. No extra charges. You can earn board and room while learning. Over 9,000 satisfied graduates. Write today for free illustrated Catalog of Facts.



NATIONAL AUTOMOTIVE SCHOOL

834 SO. FIGUEROA LOS ANGELES

Hen Hatched Chicks for Vigor

By Jean A. Koethen

NOT every poultryman in these days of intensive methods has the courage to hatch and rear 800 chicks in a year with hens, but this is what the Hudsons, father and son, of the Hudson Poultry Ranch at Escondido, did this last spring. The task would have been harder, perhaps, if any other breed but Rhode Island Reds had been used for mothers. "We find them the quietest mothers," says Mr. Hudson, junior, "especially the pullets, and believe they can hatch more chicks from a given number of eggs and raise a larger per cent of every hatch than any other kind of hen, and there is no doubt at all in our minds that the vigor of these hen hatched chicks is greater than that of incubator chicks. We hatch all our breeders, male and female, with these hens." Certainly the bright combed, typey birds which fill the Hudson yards bear eloquent testimony to the efficiency of natural methods.

When Mr. Charles Hudson left his work as cabinet maker and his son, O. C. Hudson, turned his back on desk and tyepwriter, it was with the purpose of finding independence and a healthful outdoor life in the breeding of standard poultry. Now, after seven years, their five acres of fruit and their flock of 1,300 bred-to-lay hens give them a living from which no city job can tempt them.

They went to the Oregon agricultural college at Corvallis for their male White Leghorn breeders. With this western blood was mixed some Tom Barron blood from Pennsylvania. For four years every hen was trapnested, but lack of labor for three years past has made it impossible to continue all-the-year trapnesting, and now the pullets are trapnested only through November, December and January. Those that do not make a satisfactory showing in these three months are culled out and sent to market at once. The hen that does not begin her career promptly is hardly likely to prove a profitable producer.

Three Essentials

The work on this ranch is built on three foundation stones:

1. Sanitation. Water fountains are washed daily with boiling water. Clean straw for scratching and nest litter is put in twice a month. Dropping boards are cleaned and sanded daily. There can be no half way cleanliness, the Hudsons believe. Everything must be absolutely clean.

2. Abundant green feed. Laying hens are given green feed twice a day and pullets have it four times a day. In each house is a hanging trough of inch mesh wire for cut alfalfa which enables the hens to reach it easily without wasting a bit.

3. The ax. Sick hens are not doctored, they are killed outright. Mr. Hudson, senior, is quite emphatic in his condemnation of doctoring as a means of lowering the vitality of the flock. The sooner a sick hen is put out of the way the better for everybody.

The houses are built on the long house plan recommended by the poultry division of the state college of agriculture. Each laying house is 150 feet long and 16 feet wide, and divided into five sections each 30x16. This allows 480 square feet for each 200 hens, or nearly two and one-half square feet per hen. Portable fences are used so that the yard in front of a house may be planted to barley while the hens are run in the yard at the rear. Each planting of barley is cut twice before the hens are turned on it. By this system of double yarding a maximum amount of green range is attained at a minimum expense, and the yards are purified every six months.

Culling

The flock is culled every day in the year, but the culling is heaviest in July when all hens that have commenced to molt before the middle of the month are removed. All hens that go broody at any time in the year are banded and are never allowed in the breeding pens. By this strict exclusion of broodies they have nearly been eliminated. There are hardly a dozen "cluckers" in a year, and every one is marked.

Feeding

A commercial mash is always before the layers, and the grain mixture is at present milo and barley, half and half. The growing stock are given buttermilk at noon till they are three months old, and the milk pens stand before them till 5 p. m. During the fall months, when laying is heaviest, the hens get a buttermilk mash at noon. All greens are ground in a well equipped grinding shed and fed in the wire swings already mentioned.

The Hudson hens have made enviable records at several egg-laying contests. In the 1916 Oregon agricultural college contest the pen entered averaged 202 eggs per hen, and only one hen laid less than 200 eggs. In the All-Northwest contest at Pullman, Washington, two years ago the best hen entered laid 265 eggs and the pen averaged 186 eggs. The Hudsons were the first breeders in California to send hens to an egg laying contest. This year they have a pen at Mountain Grove, Missouri.

All market eggs from this ranch are shipped by truck to Los Angeles, where they net from five to seven cents more a dozen than can be secured in San Diego.

Poultry Queries

(Conducted by Jean A. Koethen.)

Partners

I own 41 acres of land and have a friend who wishes to go into the chicken business with me. I have a new chicken house 20 feet 2 inches by 50 feet 8 inches, and two pens 34 by 34. We expect to raise most of our feed. I want this friend to furnish 1,500 laying hens, which he is willing to do, but beyond this I do not know what other questions might arise. We are anxious to divide on a 50-50 basis. —Subscriber, Visalia.

A partnership in the chicken business is a very delicate matter because of the division of labor. If you furnished the land and houses and your friend the hens and labor, it would not be difficult to arrive at some basis of division of the proceeds. If you both work there is much chance for misunderstanding and dissatisfaction. Now as to the housing: Fifteen hundred hens will require approximately 4,000 square feet of floor space. You have a little over 1,000 square feet, scarcely enough for 500 hens. What the houses for the other 1,000 hens will cost nobody can tell you now. It depends on how you build them. After they are built or contracted for you can figure in value of housing and land (rental value in your locality, I should say), and let him furnish hens to the same amount. There will be some equipment, of course, which might or might not be included under housing and feed to keep your hens going till they become self supporting. If you make his hens offset your houses you could together put up the money for feed, each an equal amount. I do not see just how you can arrange if you raise your feed. In fact, I doubt if you will raise much beside greens. For what you do raise you will have to put in land against his seed and labor and divide according to the general practice of farming on shares. A little contract covering each point, after you have talked it out to your mutual satisfacion, would be a safe thing to have.

Sulphur for Chicken-pox

Do you advise giving poultry sulphur in the fall to ward off chicken-pox? Is it a preventive? If so, should it be fed daily, and what quantity to a pen of 500 birds? Would it be harmful in damp weather?—Subscriber, Van Nuys.

Dr. N. W. Sanborn, extension poultryman now in Florida, has prescribed sulphur as both cure and preventive for chicken-pox for a number of

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Riveted Steel Pipe, Oil and Water Tanks, Steel Flumes, Siphons, Stacks, MONTAGUE WELL CASING.

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Direct from producer to consumer permits this low price for our natural asphaltized roofing paint—the finest preservative and roofing paint under sun. Equally good for shingle, paper or metal roofs. Prolongs the life of warped shingle, rusted iron and detoriated paper roofs. Why pay more for an acid-treated asphalt that eats your roof? Mail orders, barrel lots, promptly shipped. Write for sample.

WOOLNER OIL CO.

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Winners of The California Egg-Laying Contest 1920

If you are in the poultry business for eggs, investigate this wonderful strain of trapnested White Leghorns. Write for a catalog. It will interest you to know how these hardy, range bred birds have won their reputation.

Bellows Egg Ranch

Lakeside, San Diego Co., Cal.

The Foundation for Poultry Success

PCA Dry Mash

Los Angeles

FOR GREATER EGG PRODUCTION FEED— COULSON'S EGG FOOD

FULL PARTICULARS IN OUR FREE BOOK "CHICKENS FROM SHELL TO MARKET"

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ADAMS PIPE WORKS

New and second hand pipe and casings. Riveted steel pipe, valves and fittings. Mail orders given prompt attention. Write, phone or call.

2025 Bay St., Los Angeles, Cal.

Plant Winter Rhubarb FOR PROFIT

Growers netted this year $1000 per acre. This is the best time to plant for full crop next winter and spring. We can supply plants—all sorts for large fields. Write for price list.

J. B. WAGNER

Rhubarb and Berry Specialist, Pasadena, California.

years. As a preventive he mixes 3 per cent of sulphur in the dry mash. To cure the disease he makes the sulphur 5 per cent of the mash. This is kept before the birds a week or ten days, then the plain mash is fed for a few days, then the medicated mash repeated for another week. He claims that cases of chicken-pox will be less severe and the birds will come into laying condition more quickly with this treatment than without it. If the treatment works in Florida it must be successful in damp weather.

Brooder Houses

Will you please send me information on type of brooder houses for large flocks of chicks?—Subscriber, Chowchilla.

An illustrated article on brooder houses will appear soon. Most poultrymen who raise their chicks by thousands brood in large units, 500, 1,000 or even 2,000 in a unit, hovering them with one of the many types of brooder stoves or under an electric hover. They claim that while mortality is greater the labor involved is so much less that it offsets the losses. There are still a good many, however, who stick to the 100-chick unit and the small hot water or hot air brooder for each unit.

White Minorcas

Is there such a breed as the White Minorca? If so, how does it differ from the White Leghorn?—Subscriber, Point Arena.

The White Minorca is heavier than the Leghorn and characterized by slaty colored shanks instead of yellow. The difference in weight is not always apparent, for some strains of Leghorns are heavier than others, but the slate-colored shank is an absolutely reliable distinguishing mark.

NATIONAL EGG LAYING CONTEST

Mountain Grove, Missouri: Number of eggs laid by the different breeds during August and to date are: Leghorns, August 773, to date 9389; Wyandottes, August 712, to date 8657; Anconas, August 725, to date 8423; Plymouth Rocks, August 802, to date 8408; miscellaneous varieties, August 790, to date 8357; Rhode Island Reds, August 697, to date 8208.

Ten leading pens for August are: Columbian Rocks, New Jersey, 116 eggs; R. C. Rhode Island Whites, Illinois, 112; Anconas, Missouri, 106; S. C. Brown Leghorns, Missouri, 103; S. C. White Leghorns, New York, 101; S. C. White Leghorns, Washington, 99; S. C. White Leghorns, Michigan, 99; White Wyandottes, Missouri, 99; Anconas, Missouri, 97; Anconas, Missouri, 95.

Ten leading pens to date are: S. C. White Leghorns, Washington, 1111 eggs; S. C. White Leghorns, Missouri, 1109; White Wyandottes, Missouri, 1107; S. C. White Leghorns, England, 1061; R. C. Barred Rhinelanders, Michigan, 1027; S. C. White Leghorns, New York, 1016; R. C. Rhode Island Whites, Illinois, 999; Anconas, Missouri, 988; S. C. Reds, Colorado, 965; S. C. Reds, Missouri, 961.

SHIPPING BY AIRPLANE

One feature at the state fair this year which attracted the attention of poultry people was a bunch of 600 White Leghorn chicks shipped when a day old from Stubbe Poultry Ranch, Palo Alto, by airplane to the state fair. The chicks were delivered on the state fair grounds at Sacramento one hour and forty minutes after leaving Palo Alto. The chicks were photographed for the movies, were toasted and oh-ed and ah-ed until they felt they were wonderful chicks, and indeed they were.

FROZEN POTATO TOPS

Anton Follstad of the Wisconsin agricultural station weighed potatoes of four hills without detaching them from the vines, to determine if the tubers grew after the tops were killed by frost. The first occurred September 10. At four later dates the tubers were weighed and it is almost amazing to record that the tubers gained in weight more than one-fourth, or 26.40 per cent, or a yield per acre of 57 bushels.

Speed Up Layers Before Winter Comes
Your flock is doubtless laying *some* eggs—but you are losing money if they're not laying *all* they should, these days when egg-prices are going up.
Molting hens and growing pullets alike need perfect health in order to get to laying steadily and heavily *soon*. Shorten the molt—hurry the pullets—give your flock—today and every day—
Pratts Poultry Regulator
This is the simple and effective means used by thousands of successful poultry keepers to make hens lay and pay. Popular for fifty years. A natural tonic and health-maker—a digestive that makes feed go farther and prevents feed waste—a scientific all-round conditioner that may be depended on to wake up dormant egg-organs and *bring the eggs*. And that means dollars to you now and all winter. Pratts Poultry Regulator must please you—remember our guarantee.
Save Money Buy Pratts in 12- or 25-lb. pails; 50- or 100-lb. bags.
"Your Money Back If YOU Are Not Satisfied"
Get a supply today from the Pratt dealer near you
PRATT FOOD CO., Philadelphia, Chicago, Toronto
The answer to rapid growth and heavy egg-production—Pratts new Growing and Laying Mashes and Scratch Feeds
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Get the most from Your Motor
For your motor to work at its best you must treat it fairly.
When you use "Red Crown" you do treat it fairly. "Red Crown" has a continuous chain of boiling points which insures ready starting, rapid acceleration and maximum power.
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STANDARD OIL COMPANY (California)
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Ask the farmer who has planted my seed, and you will have no other

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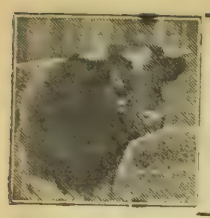

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A May 1920 son of the champion Westward Ho and out of a 10,500 pound daughter of the 1919 Chicago champion. A 14 months old son of Glenside Royal and out of Princess Clay a cow of beautiful type and with over 12,000 pounds milk. Also have a few younger bulls and heifers. Prices moderate and all guarantees. Here is your chance. Address
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Blackhawk Ranch Shorthorn Cattle
One of the most select herds in America. Only Scotch females of the best families headed by
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Imported direct from the famous Duthie herd.
SHIRE HORSES
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Big—Prolific—Easy Feeders—
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Prices Reasonable
Hampshire Sheep
The top and the high average at the 1921 Davis sale. The kind that sire early market topping lambs. We have what you want at prices you can afford to pay.
Visit the farm at any time.
J. I. Thompson, Manager — C. Harold Hopkins, Owner

Rosebud Shorthorns
A Choice Herd of Fifty Females Headed by Milmar Stamp a Cruickshank Secret
We can now offer a few extra good young bulls that we do not hesitate to recommend. They are well grown and correct in type and quality. We invite you to visit our herd or to write us your needs.
Edinger-Johnston Company
Hood, California
(Just south of Sacramento.)

Sale Cancelled
Owing to a number of heavy private sales I will be unable to hold my public sale of Shorthorns as advertised for November 2d. I will therefore offer a number of young bulls, cows and heifers that are suitable for foundation material.
W. M. CARRUTHERS
Live Oak Cal.

IMPORTED
Corston Masher
Senior Champion at 1921 California State Fair heads our selected herd of
SHORTHORNS
and we can offer some rare bargains in Scotch and Scotch topped cows and heifers, some with calves at foot, and rebred to the above bull. Most of the heifers are by Double Callant, a grandson of Avondale. Write us for prices and particulars.
Warm Creek Land and Livestock Co.
J. Selby Badt, Pres. & Mgr., Wells, Nevada

Shorthorn Sale
Cows and Heifers---30---Cows and Heifers
Bulls---10---Bulls
The Sixth sale of SHORTHORNS will be held at San Francisco on Thursday, October 27, 1921.
The cattle market is improving every day.
Here is your opportunity to acquire the foundation stock for a herd of your own.
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222 Sharon Building San Francisco

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Union and Truxton Ave. Bakersfield, Cal.

Los Angeles Markets

Los Angeles, October 5. 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price 50 cents.

Prices Creamery Extras last week:

Sept.	28	29	30	Oct. 1	3	4
'21	49	50	50		50	50

CHEESE

Brokers prices:
California flats, 21@23.

EGGS

Produce Exchange closing prices: Eggs, cases included, ,fresh extras, 57; case count, 51; pullets, 43; pewee pullets, 27.

Extras last week:

Sept.	28	29	30	Oct. 1	3	4
'21	55	55	55	...	57	57

POULTRY

Price to producers: Hens, 27; colored, 32; broilers, 37; roasters, 30; old roosters, 18; fryers, 30; ducks, old, 12; ducklings, Pekin, 3½ up, 25; others, 25; geese, 25; turkeys, live, young tom, 50; dr., 55; old, live, 40; dr., 41; hens, live, 38; dr., 44; squabs, 45@47.

Belgian hares, live, 12@17; old, 8.

LIVESTOCK

Los Angeles, Oct. 4—Weighed and delivered off cars without food or water:

Hogs (hard grain fed), 125 to 175 lbs., 9.00; 175 to 225 lbs., 9.50.

Cattle (on foot, gross weight): Steers, good, 6.50; medium, 6.00; cows, good, 5.00; medium, 4.50; bulls and stags, 3.00; calves, 125 to 150 lbs., 8.00; 175 to 225 lbs., 7.00.

Sheep: Ewes, 3.50@4.00; lambs, 7.00@7.50.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock October 4, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies heavy, demand and movement slow, market dull. New stock: Mostly 1.15@1.25 per lug. Stocktons: Burbanks, per cwt., choice, 2.50@2.75; fancy, 2.85@3.00; few best, 3.15@3.25. movement slow, market steady. Locals: lug.

Onions: Supplies liberal, movement limited, market steady. Locals: Per lug, $1.15@1.25; Spanish, 3.50@4.00 per cwt. Stocktons: Per cwt., Whites, 3.50@3.75; Yellows, 3.50@3.75; Browns, few sales, 4.00. Per lug, Whites 1.40, Browns 1.50.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock, October 4, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Supplies moderate, demand moderate, market weaker. Per lb.: Kentucky Wonders and Greenpod, 4@6. Limas: Supplies liberal, movement moderate, market stronger, 5@7 according to quality.

Beets: Supplies moderate, market steady. Per dozen bunches mostly 35 40.

Cabbage: Supplies liberal, market firm. Per field crate, best, 2.75@3.00.

Carrots: Supplies moderate, market steady, per dozen bunches mostly 35@40.

Cauliflower: Supplies liberal, market weaker, 1.25@1.75, according to quality, mostly 1.40@1.50.

Celery: Supplies liberal, movement slow, market weaker. Per crate, 3.50@4.25, according to quality, mostly 4.00@4.25.

Corn: Supplies liberal, movement slow, market weaker. Wide range in quality and condition. Per lug, best, 75@90; poorer, 50@60.

Cucumbers: Supplies liberal, movement moderate, market steady. Locals: Lugs mostly 50@60, poorer 45; pickles, 1.50@2.25 per lug.

Eggplant: Supplies liberal, demand moderate, market steady, 4@5 per lb.

Lettuce: Supplies heavy, movement moderate, market weaker. Local: Field crates, best, 75@90, poorer 50@60. 12@15 lb.; poorer, 10.

Okra: Supplies light, market steady, fancy, small, 9@12 per lb.; poorer, 7@8.

Peas: Supplies light, market firm, best 12@14 lb.; poorer, 10.

Peppers: Supplies heavy, market steady. Locals: Bells, 50 lug; Chili, 40@45; Red Pimiento, 70@75.

Squash: Supplies moderate, market weaker, summer mostly 35@50 lug; Hubbard, 1½ lb.

Tomatoes: Supplies heavy, demand and movement moderate, market steady. Locals: No. 1, per lug; Pinks and Ripes, mostly 80@90; No. 2, 50@60.

Turnips: Supplies moderate, market steady. Per dozen bunches, 35@40.

FRESH FRUITS

Apples: Supplies heavy. demand and movement improving, market firm. Locals: 2@4; few fancy Yucaipa section, 5@6 per lb. Watsonville: Fancy 3½ and 4 tier Belleflowers, 1.40@1.60, mostly 1.50; 4½ tier, 1.20@1.25. Utahs: Jonathans, 6 per lb.

Cantaloupes: Supplies liberal, demand and movement slow, market weaker. 75@1.00; other varieties, 60@75.

Cranberries: Supplies limited, market steady. New Jerseys: Early Blacks, 17.00 bbl.

Figs: Supplies moderate, demand slow, market weak. Locals: Per box, 50@1.00, mostly 50@75; per lb, 6@10.

Grapes: Supplies moderate, movement moderate, market weak. Muscats, mostly 5½@6½; Tokays 7@9; Cornichons 6½@7, Mission, 5@6; and Black Moroccos 7@8

Peaches: Supplies heavy, demand moderate, market weak. Wide range in quality and condition. Freestones mostly 75@1.00; poorer, 40@65 per lug. Clings mostly 75@1.00, according to quality; few fy. 1.25@1.50.

Pears: Demand and movement moderate, market steady. Bartletts mostly 5@6, few 6½@7; poorer, 3@4 per lb.

Watermelons: Supplies liberal. Demand light, market weaker. Locals: Klondikes mostly ½, few ¾ per lb.

CITRUS FRUITS

Grapefruit: Supplies moderate, movement moderate, market firm. Local: market pack, mostly 3.50@4.00; smaller, 2.50@3.00 special packed, 4.00@4.50.

Lemons: Supplies liberal. Demand moderate, market firm. Local: Special pack mostly 5.00@5.50; market pack, best, 3.50@4.00; poorer, 2.75@3.00; loose box, 2.50@3.00; lugs, 90@1.00.

Oranges: Supplies moderte. Demand good, market firm. Special brands mostly 5.50@6.00; market pack, 3.50@4.00; 1.50, mostly 1.25@1.50.

HONEY

Supplies of white honey nearly cleaned up account short crop and good demand. Production of fancy grades considered only 25 per cent of normal. Moderate supplies of other grades new crop but old crop supplies nearly exhausted. Light nectar flow from beans anticipated. Demand fairly active past two weeks and prices advanced slightly. Market firm at present. Carload f. o. b. usual terms at loading points. White orange, 10½@11¼; white sage, 9½@11; light amber sage, new crop, 7@8; old crop, 7; light amber alfalfa, new crop, 5¼@5½; old crop, few sales, 5½. The quality of new crop alfalfa and sage said to be variable, due to the unfavorable season. Beeswax: Supplies moderate, demand light, market weak. Growers receiving 22@23; dealers asking 25 for crude wax.

NUTS

Cal. Walnut Growers Assoc.:
Opening prices to wholesalers:

No. 1 Softshell	24½
No. 2 Softshell	17½
Standard Budded	28½

GRAIN AND FEEDS

Grain Exch. price bid Oct. 4.
Barley: 100 ton lots, Dec. del. 1.25.
Milo: 100 ton lots, Oct. del., 1.66.

HAY

Alfalfa Growers of California report:

Improvement in demand pronounced in San Joaquin Valley. Money for first crops is coming in and increasing buying power of these districts. In the southern part of the state most of the damaged and low grade hay has been disposed of as fertilizer, in other districts with prohibitive cost of baling and freight efforts are being made to bring in feeders.

There were 720 tons of grain and altracks the week ending October 1, with 170 tons held over.

Prevailing prices, delivered in vicinity of Los Angeles:

Choice Rabbit Alfalfa	$28.00
Choice Dairy	25.00
No. 1 Dairy	22.00
Standard	17.00
Straw	6.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats	18.00@26.00
Barley	16.00@24.00
Alfalfa, Rabbit	22.00@26.00
Alfalfa, No. 1 Dairy	19.00@21.00
Standard	16.00@18.00

San Francisco Markets

San Francisco, Oct. 4, 1921.

Quotations made daily by San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

BUTTER

Extras 49.

CHEESE

Dairy Exchange quotations:

Cal. Flats	20@23
Cal. Y. A.	26

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Prices bid on Dairy Exchange quotations, September 26:

Extra	62½
Extra firsts	61
Extra pullets	47½
Undersized pullets	29

Sept.	20	21	22	23	24	26
'21	..	..	..	55	56	..	57

POULTRY

Wholesale prices are:

Young chickens: Leghorns, 1 to 1¼ lbs., lbs. and up, 32@33; heavy breeds, 1½ to 1¾ lbs., 32; 2 lbs., 32; 2½ lbs. and up, 35@38; staggy roosters, 20@25; old roosters, Leghorns, 15; heavy breeds, 18; hens, Leghorns, large 25@27; small to medium, 20@23; hens, heavy breeds, 35@38.

Ducks: 20@23 per lb.; geese, 30 per lb.; turkeys, live, 31; dressed. 45; Belgian hares, live, 15; dressed, 18@20; squabs, fancy, 40; do, common, 3.50 per doz.

LIVESTOCK

Weighed off cars at our yards in South San Francisco:

Cattle—No. 1 steers, 5½@6; do, second quality, 4¼@5¼; cows and heifers, No. 1 quality, 4¼@4¾; do, second quality, 3½@4¼; bulls and stags, 2½@3.

Calves: Light weight, 7@8; heavy, 5½@6½.

Sheep: Wethers, 3½@4; ewes, 2½@3.

Lambs—6@6½.

Hogs — Hard, fat, grain-fed, weighing 125 to 200 lbs., 11; 200 to 250 lbs., 10; 250 to 300 lbs., 9; light sows, 9; heavy, 8.

California Farm Bureau Marketing Association reports:

No. Hogs	Ave. Wt.	Dock	Price
Tulare, Sept. 27.			
33	181	...	10.15
20	119	...	10.15
84	186	...	10.05
87	185	...	10.05
86	178	...	10.05
10	162	...	10.00
104	153	...	9.75
29	239	40	9.15
5	294	50	7.65
1	530	...	5.00

Five cars, 34 consignors, $8078.17.

Visalia, Sept. 28

23	136	20	10.10
87	183	...	10.10
80	191	20	10.00
30	191	...	9.85
19	248	...	8.85
6	273	60	7.35
1	450	180	4.50

Three cars, 21 consignors, $4772.68.

Hanford. Sept. 29

6	96	...	10.80
87	193	...	9.75
13	193	...	9.75
94	161	...	9.65
4	382	60	5.00
1 Boar	...	...	17.00
2 Sows	...	...	36.00

Three cars, 17 consignors, $3561.15.

McFarland, Sept. 30

93	176	...	9.70
90	186	...	9.50
36	149	...	9.05
41	226	...	9.05
10	255	...	8.75
4	117	...	8.75
5	296	60	7.05

Three cars, 19 consignors, $4934.82.

Wasco, Oct. 1

103	172	...	9.70
86	286	...	9.50
14	142	...	8.20
2	320	...	7.50
1	390	20	6.00

Two cars, 15 consignors, $3500.39.

Total for the week, 16 cars, 106 consignors, $24,847.16.

POTATOES AND ONIONS

Street prices:

Potatoes—Street prices: River, 2.60@2.65; second grade, 2.00@2.25; Oregon Burbanks, 2.65@2.75; Salinas, $3.00@3.25; netted gems, 3.00. Sweets, 2½@3½ per lb.; Turlock Nancy Hall, 2½@3½ per lb. 3.00; Brown, 3.25; green, 1.50@2.00 per box.

Onions: Australian Brown, nominal; crystal wax, nominal; new crop Yellow, 2.25@2.75; Brown, 2.50@2.75; green, 1.50@2.00 per box.

Garlic: 3@5 per lb.

VEGETABLES

Wholesale selling price:

Beets: 1.75@2.00 per sack.

Beans: String, 4@6 lb.; Lima, 6@10.

Brussel Sprouts: 6½@8 per lb.

Carrots: Sk., 1.00.

Celery: 3.00@4.00 cr., bunch 30@40; bleached 4.00@4.50 cr.

Corn: Alameda, 2.00@3.00 sack; 2.00@2.75 cr.

Cucumbers: Bay, 40@50; fy. River, 75@1.00 lug.

Eggplant: Lb., 3@5; Livingston, 6@7.

Lettuce: Crate, 1.25.

Okra: 1.00@1.50 per box of about 10 lbs.

Peas: 5@10.

Peppers: Bells, 3@4 lb.; 50@75 lug; Chili, 3@5.

Spinach: 3½ per lb.

Squash: Bay 40@60 per 40 lb. lug; Italian Pinensula, 70@1.10 lug; cream, 75@1.00.

Tomatoes: Sacramento and Peninsula, 1.25@1.75; fy., 2.00.

FRESH FRUITS

Apples: Bellflower, 3½ and 4-tier, 1.50@1.65; 4½-tier, 1.15@1.25; B grade, 1.10@1.25; Alexanders, 3½ and 4-tier, 1.25@1.50.

1.50; 4½-tier, 1.00@1.25; Rhode Island Greenings, 3½ and 4-tier, 1.50@1.75; 4½-tier, 1.00@1.25; Banana, 3½-tier, 2.25@2.50; 4-tier, 2.00@2.25; 4½-tier, 1.50@1.75; Red Cheek Pippins, 3½-tier, 1.60@1.75; 4-tier, 1.40@1.60; 4½-tier, 1.10@1.25; Jonathans, 3½ and 4-tier, 2.50; 4½-tier, 1.50@1.75; B grade, 1.50@1.75; Kings, 3½ and 4-tier, 2.00@2.25; 4½-tier, 1.50@1.75; B grade, 1.25@1.50; yellow Newtown Pippins, 3 and 4-tier, 2.00@2.25; 4½-tier, 1.75; B grade, 1.50; Spitzenburg, 3½ and 4-tier, 2.25@2.50; 4½-tier, 2.00.

Avocados: California, doz., large, 3.00@5.00; small, 1.00@2.00; Fla., 3.00@5.00.

Bananas: Eastern, 6@7; Hawaiian, 7@8.

Blackberries: 50@60 per drawer.

Cantaloupes: Flesh tinted, 2.00@3.50 cr.; River, 1.00@1.25 lug. Persian, 1.00@1.25 per small cr., 1.50 large; Honeydew, 75@1.00 per standard crate; Casabas, 50@75 per dozen.

Chestnuts: 25 per lb.

Cranberries: Bx., 4.00@5.00.

Figs: Black, double layer, 90@1.25; single layer, 60@75 do, white, single, 60@85.

Grapes: Per crate, seedless, 1.50@1.65; Tokay, 1.50@1.75; black, 1.25@1.75; Malaga, 1.25@1.50; seedless, 2.25@2.50 per large lug; black, 2.50@3.00; fancy, 3.50 per large lug; Tokay, 2.00@2.50 per large lug; fancy, 3.00; muscat, lugs, 2.00@2.50; fancy, 3.00.

Huckleberries: 12½@20 lb.

Peaches: Per small box, 85@1.25; per lug, 1.75@2.25; Strawberry freestone, 1.50; clings, 3.00 per large lug; Oregon packers, 1.50@1.75 per small box.

Pears: Bartletts, No. 1, wrapped, 2.50@3.75 box; Forelle, lug 75@1.50.

Pineapples: 4.00@5.00 dozen.

Persimmons: 1.75@2.25.

Plums: Fy., 2.00@2.25 cr.

Pomegranates: 2.00@2.50.

Prunes: Silver, 1.25@1.50 per crate; German, 1.75@1.85 crate; 60@75 small box.

Quinces: 1.25@1.50 lug.

Raspberries: 60@85 per drawer.

Strawberries: cr., 1.25@1.60; dr., 65@75.

Watermelons: 2.00@3.00 doz.

BEANS

Below California Bean Growers Association shippers prices choice recleaned:

Large Whites	5.00
Small Whites	4.75
Pinks	4.75
Mexican Reds	4.95
Red Kidney	7.60
Henderson Bush	4.80
Cranberries	5.75
Bayos	5.60
Blackeyes	3.35

Citrus Markets

Los Angeles, Oct. 5, 1921.

Valencias are closing the season with exceptional demand and long prices. Practically all houses excepting a few in Orange County have finished the season.

Lemons are not so strong as for past few weeks but still selling very satisfactorily.

Shipments

Shipments of citrus fruits to date since November 1, 1920, Southern California: Oranges, 38,980 cars; lemons, 11,074; total, 50,054. To same date last season: Oranges, 29,351; lemons, 7,864; total, 37,215. From Central California to date this season: Oranges, 6,649; lemons 212; total, 6,861. To same date last season: Oranges, 5,381; lemons, 289; total 5,670. From Northern California to date this season: Oranges, 305; lemons, 5; total, 310. To same date last season: Oranges, 261; lemons, 23; total, 284.

AT THE AUCTIONS

Sept. 29

New York: 22 or.,, 2 mixed, 4 lem. Val. 4.45-8.55, grapefruit 3.15, halves 1.75, lem. 4.10-7.30.

Sept. 30

Boston: 7 or., 2 lem. Val. 4.15-7.30, grapefruit, 1.65-2.55, lem. 6.75-8.35.

Oct. 3

New York: 9 Val., 1 mixed, 3 lem. Val. 4.35-7.90, lem. 4.30-5.80, grapefruit 2.55.

Boston: 9 or., 3 lem. Val. 5.75-7.40, lem. 6.20-7.80.

St. Louis: 3 or., 2 lem. Val. 4.70-6.75, lem. 3.40-4.25.

Cleveland: 3 or., 2 lem. Val. 4.90-6.50, lem. 1.55@4.25.

Oct. 4.

New York: 19 or., 3 lem. Val. 4.80-8.20, lem. 5.30-6.95.

Boston: 6 or., 2 lem. Val. 5.90-6.95, lem. 5.05-6.50.

Philadelphia: 9 or., 3 lem. Val. 3.95-8.60, lem. 1.80-6.15.

St. Louis: 2 or., 1 lem. Val. 4.10-7.00, lem. 3.10-4.55.

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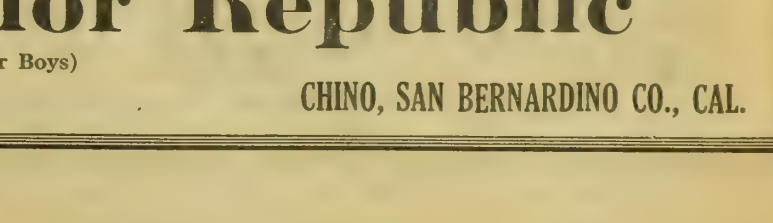

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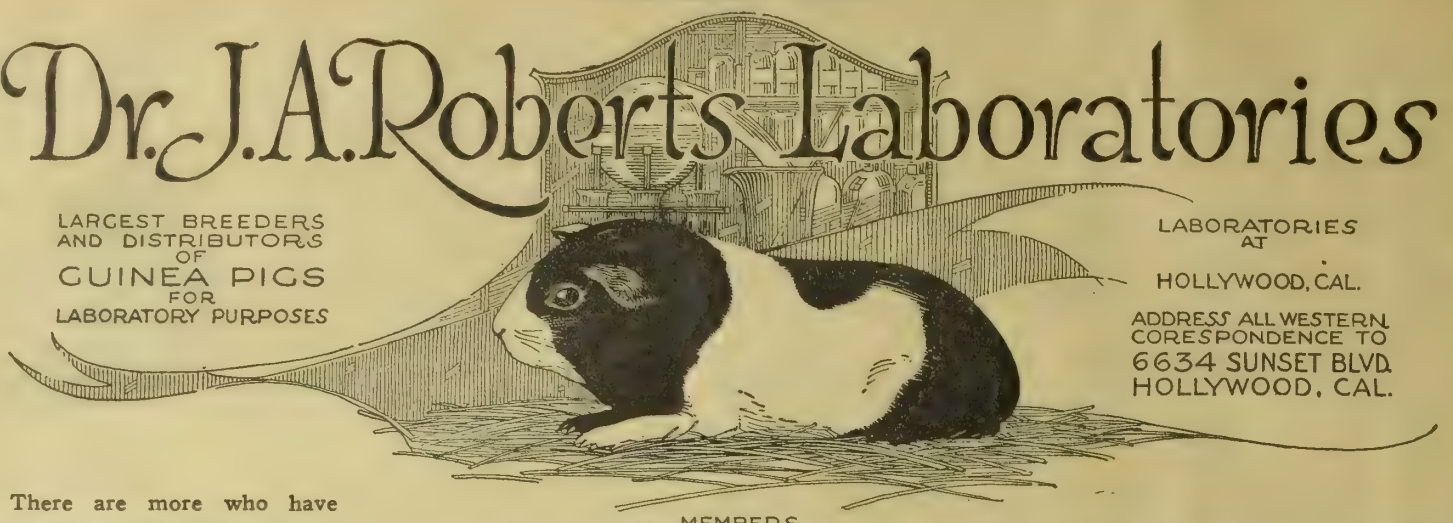

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LVII — October 15, 1921 — No. 16

Harvesting Hops in the Sacramento Valley

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and LIVESTOCK and DAIRY JOURNAL

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Saturday October 15, 1921

EDITORIALETTES

A busy Sacramento Valley scene is given on this week's cover. Hops were affected with sinking of the heart about the time prohibition went into effect but, like the vineyards, they seem to have come back. In any case hop culture in the Sacramento Valley is in the ascendancy today. An excellent idea of the importance of the industry is to be had from Mr. Horst's article on the fifth page of this issue.

* * *

A writer in the Cultivator recently stated that 200 pounds of sulphur per acre would practically eliminate nematodes or wireworms. In addition nitrate of soda people have always insisted that light application of nitrate would control these pests. It's worth the trying, and we are hoping Cultivator readers will make small experiment stations of their farms when it can be done at such slight expense.

* * *

A. C. Fleury, who has been for four years in charge of Los Angeles harbor quarantine station work, has been promoted to the post of deputy quarantine officer and transferred to the central office at Sacramento, where he will work with Chief Quarantine Officer L. A. Strong. He will be succeeded in the Los Angeles harbor work by A. P. Messenger who has been inspector in San Francisco harbor. Mr. Fleury took the work in Los Angeles harbor almost in its infancy and has established most thoroughgoing inspection service.

FESTIVAL OF DATES

The International Festival of Dates is to be held at Indio, Coachella Valley, Riverside County, on October 21, 22 and 23. "A display such as never made in any other section of the world" is to be made.

The Coachella Valley is making good as a date producer and this fact is to be burned in by this festival and the crowds of "show me" folks who will be attracted by it.

SOUTHERN CALIFORNIA FAIR

Riverside is all dressed up this week and entertaining all Southern California. She has a wonderful exhibit of California resources and affords abundant proof of the increasing popularity of the livestock industry. There is one great showing in all the dairy and swine classes. Beef classes are not so largely represented, but there is a showing of fine quality. In county and community exhibits, which are in the great agricultural tent, there is a showing of diversity seldom equaled. Dates, bananas, avocados, citrus fruits and other sub-tropicals are vying with pumpkins, corn, apples and other colder country productions, and while it may seem trite to state that there is superiority in every one of these classes, it is true, and California pride is increased by this exhibition.

ETHAN A. CHASE

Ethan Allen Chase died at his home in Riverside in his ninetieth year and after 30 years active connection with the fruit industry of California. Mr. Chase was born in 1832 in Maine, in early life moved to Rochester, New York, where he was engeged in the nursery business, and on his coming to California in early '91 he established large citrus orchards and nurseries in the active management of which he continued almost until the time of his death. Mr. Chase's entire life has been an inspiration and California horticulture owes much to his investigations and to practices conducted in his orchard properties in Riverside and Corona. His two sons, Frank F. and Harry B., have been partners in the business and will continue the work which Mr. Chase started.

COOPERATIVE CANNING

The Canners League of California is naturally bitterly fighting the cooperative canners' effort to market their product. The league is issuing a statement in which it is charged that "Already Armour is alleged to, and we believe does, control not only the canning plants but also, through crop advances made by the California Cooperative Canneries, controls many orchards."

This is emphatically denied by the cooperators, who are conducting a business which is saving them from the exactions of privately owned canneries which menaced their future production.

Dispatch from San Jose assures us that certain Middle West canners and large livestock associations are endorsing the present movement for modification of the attorney general's decree, also that opposition to modification comes from organized wholesale grocers and few coast canners who fear power of organized producers backed by efficient distribution.

A GREAT WEEK

Thursday, the 20th, begins a great week in the city of Los Angeles—a great week for horticulture of the Pacific Coast. The nurserymen, avocado growers, fruit growers and farmers, horticultural commissioners, farm advisers and, in fact, everybody interested in agriculture and horticulture will gather and discuss the larger questions affecting California's welfare. Transportation will perhaps come in for the greater share of the convention's time. There may be some fireworks, but in any case there will be much of information and inspiration in the present movement of citrus growers to establish a line of ships all their own between Los Angeles harbor and Atlantic Coast points. Another day will be given to legislation. Standardization and its enforcement in regard to California fruits and vegetables will be given a boost, and there will be many other practical matters discussed.

Editorials as to the opportunities for advancement of California horticulture appear on third page of this issue, written by a number of California's nurserymen. The real feast of the fete will be on Saturday night when the avocado people propose to feed up everybody on real avocados and plenty of them.

Program Fruit Growers Convention

THE program for the Fifty-fourth State Fruit Growers' and Farmers' Convention at Los Angeles, October 24 to 28 is announced by Director G. H. Hecke of the state department of agriculture.

From reports received the coming convention, which will be held at Exposition park, promises to be a great success. Extensive preparations are being made by the Los Angeles Chamber of Commerce for the entertainment of the visitors, as a large attendance is expected considering the fact that several horticultural conventions will be held during the same week. Among them are the Convention of the State Association of County Horticultural Commissioners, the eleventh annual convention of the California Association of Nurserymen, which includes the California Flower Show, and the annual convention of the Avocado Association. The Flower Show will be the greatest ever staged in California and is worthy of a large attendance.

Monday, October 24, Legislative Day

9:30 a. m., George H. Hecke presiding—Address of welcome, Mayor Cryer. Report Director of Agriculture George H. Hecke. Agricultural Legislative Committee, C. C. Teague, president, California Fruit Growers' Exchange. Report Agricultural Legislative Progress, R. N. Wilson, secretary, Agricultural Legislative Committee. Discussion, George Pierce, president, California Almond Growers' Exchange; George H. Cutter, president, California Fruit Exchange.

1:30 p. m., George H. Hecke presiding—Legislation Affecting Agricultural Cooperative Movement, George E. Farrand, Harris Weinstock. Discussion, Senator M. B. Harris, Judge Willis I. Morrison, F. H. Wilson, president, California Peach Growers' Association.

8:00 p. m.—Executive meetings; County Horticultural Commissioners' meeting; Agricultural Legislative Committee executive meeting.

Tuesday, October 25, Transportation Day

9:30 a. m., Wylie M. Giffin presiding—Report of Transportation Committee, Charles E. Virden, president, Virden Packing Company. Water Transportation, F. W. Whitcomb, chairman Water Transportation Committee, California Fruit Growers' Exchange. Discussion, Meyer Lissner, U. S. Shipping Board; Walter S. McPherson; Charles H. Bentley, sales manager, California Packing Corporation; Preston W. McKinney, secretary, Canners' League of California.

1:30 p. m., G. B. Daniels presiding—Transportation Problems of Vegetable Growers, Thomas O'Neill, president, California Vegetable Union. Discussion, L. K. Small, president, L. K. Small Company. Failure in Distribution of Agricultural Crops in 1921, G. Harold Powell, manager, California Fruit Growers' Exchange. Discussion, Carlyle Thorpe, manager, California Walnut Growers' Exchange; W. G. Alexander, director, California Prune and Apricot Growers; G. W. Felts, general manager Alfalfa Growers of California; Frank T. Swett, general manager, California Pear Growers' Association.

8:30 p. m.—Banquet, Sylvester Weaver presiding. Guests of honor, Gov. William D. Stephens; Henry C. Wallace, secretary of agriculture.

Wednesday, October 26, County Horticultural Commissioners' and Farm Bureau Day

9:30 a. m., H. P. Stapler presiding—Serving the California Farmer, R. N. Wilson; W. H. Walker, president, California Farm Bureau Federation. Problem of Old Orchard Decline—Deciduous, F. B. McKevitt, president, Producers' Fruit Company. Discussion, P. M. Baier, A. B. Humphrey. Citrus, C. C. Chapman. Discussion, A. D. Shamel, plant physiologist, U. S. department of agriculture; C. B. Messenger, editor, California Cultivator.

1:30 p. m., H. J. Ryan presiding—The California Farmer, Dr. Thomas F. Hunt, dean, college of agriculture, University of California. Long Pruning, Dr. J. C. Whitten, professor of pomology, U. of C. Discussion, G. P. Weldon, pomologist, Chaffey Union High School.

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Send For Our Autumn Planting Notes

Please Mention California Cultivator When Answering This Advertisement.

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California Cultivator

Vol. LVII, No. 16 | Los Angeles, October 15, 1921 | One Dollar Yearly

A Great Week for California Horticulture

A SHOWING of California horticulture and California flowers will open in Los Angeles next Thursday, in which there will be quality and quantity we believe never before surpassed. California Association of Nurserymen began planning for this show a year ago and some six or eight months ago began actual planting of trees and bulbs and seeds which would lend a charm different from that of any former show to this event. Artists and decorators have been busy working out novel attractions and lighting schemes which will make the show worth a long trip to see.

In addition there will be addresses, discussions, banquets and meetings which will inspire agriculturists to greater and better production. Director Hecke and Deputy Killingsworth, together with Messrs. Strong, Vary, Ryan and a host of others, are working out details for the state fruit growers' convention.

Beside the direct plans for the program and good things of the conventions and the show, it is due to Cultivator readers to be informed of some of the other attractions in Exposition Park, where the conventions will be held. Some of these are outside the gates of the show and well worth a few hours of the time of the convention attendants. First there is the Los Angeles County museum and art galleries containing, in addition to many works of art, one of the world's finest exhibits of prehistoric life, specimens having been taken from excavations in the brea beds west of the city. Then the state exposition building adjoining contains one of the most exquisitely staged exhibits of California fruits and crops which we believe has ever been put up. The interior decorations and arrangements in that building have been under the general direction of Mr. Harris and a governing board. Some of the art work by Miss Lena Scott, Chris Seimer, Edward Vysekal and Ignace Vysekal are worthy of more than a passing look, which we fear will be all convention attendants may have to give to this magnificent exhibit. Anyone who may wish to start right in doing these exhibits should step to the information desk and ask Miss Esterly where to find the work of these artists and decorators. The fair decorations and management have been under the supervision of F. M. Renfro.

* * *

By R. M. Teague

The California Flower and Horticultural Exhibition, together with the conventions of nurserymen, florists and fruit growers, should be the means of bringing nurserymen and planters closer together.

In the past the planter has considered the nurseryman as more or less of a necessary evil, and there may indeed have been just ground for this feeling in some instances, but the nurserymen of today realize more fully the necessity of giving the planter stock that will not only please at the time it is purchased but will produce fruit or flowers better, if possible, than he expected.

There should and we believe there will exist a much closer cooperation between nurserymen and planters when the latter more fully realize the efforts being put forth and the painstaking care exercised by the nurserymen to produce better trees, plants, flowers and shrubbery, and it is one of the aims of this exhibition to show to the public what progress they have been making along these lines.

California owes her reputation as a fruit producing state and a great part of her floral beauty largely to the efforts of the nurserymen, for while these efforts have been prompted more or less from the standpoint of commercial gain the nurserymen have never lost sight of the fact that to attain this end they much produce something better, flowers and shrubs more beautiful, trees and plants more prolific and fruits of better quality; all of which tends to elevate the floral and horticultural industries.

That their efforts have not been in vain will be attested by the great wealth of fruit, flowers, trees, plants and shrubbery displayed at this exhibition.

* * *

By J. E. Bergtholdt

To the fruit growers of California there will be offered in the Nurserymen's Convention, in the floral, ornamental and commercial horticultural exposition put on by the nurserymen, and in the Fruit Growers' Convention during the last three days of the exposition, a full week of events and attractions, unique, educational and profitable, that will make this convention well worth attending.

In the ornamental and floral show the nurserymen are staging the most comprehensive exposition of this kind ever attempted in the state, while on the program of the Nurserymen's Convention held during the first three days of the exposition, every topic will be of vital interest to the fruit grower, and the Fruit Growers' Convention, held during the last three days of the exposition, is of like practical importance.

These are three big reasons why every fruit grower in the state should attend these three big horticultural events staged in Los Angeles the week of October 20 to 26.

* * *

By J. A. Armstrong

It occurs to us that the Flower and Horticultural Show will be a benefit to all the nurserymen of the state, inasmuch as such displays always create an interest in planting. It is true, however, that this show, on account of being rather late, will not have a display of fruit such as might have been displayed earlier in the year. Therefore, this show will more particularly stimulate the planting of ornamentals and flowers.

Such a show should be held at least once each year in California. We are just a little slow in arranging for exhibitions of this kind, as nowhere else can fruit and flower exhibits be made so exceedingly interesting as in our own state, and we anticipate that this year's show will be a starter to big things in the future.

* * *

Wm. T. Kirkman, Jr.

The importance of the nursery industry is being recognized more and more each year. Investors on horticultural projects are not now quibbling about quotations, such as in times past, but are looking toward quality and dependability of nursery stock. This is being evidenced continuously and it is our hope to make good in our endeavor to meet the fruit grower in his demands that we supply nursery stock that is as high grade as it is possible to produce.

The Bud Selection Association is making steady and assured progress and within reasonable length of time will add greatly to the dependability and quality of deciduous nursery stock. A little later we will be able to give more information regarding recent developments and undertakings of the association, which I am certain will be highly gratifying.

CALIFORNIA NURSERYMEN'S ASSOCIATION CONVENTION PROGRAM

Meetings will be held in Armory Hall, Exposition Park, L. A. headquarters, Hotel Hayward.

Thursday, October 20

9:00 a. m.—Address, President R. F. Wilcox. Los Angeles' word of welcome, Sylvester Weaver, president Chamber of Commerce. Response, Wm. M. Bowen, chairman Los Angeles Park Commission. President's annual address. Reports of the secretary and committees. Legislation, J. E. Bergtholdt; Insects and Disease, George H. Hecke; Transportation, J. D. Meriwether; Deciduous Fruits, William T. Kirkman, Jr.; Citrus and Tropical Fruits, R. M. Teague; Viticulture, M. R. Jackson; Gardens, Donald McLaren; Plants and Flowers, W. B. Clarke; Native Vegetation, Theodore Payne; Arboriculture, John J. Reeves; Nomenclature, Ernest Braunton; Exhibitions, D. W. Coolidge; Program, E. B. Washburn.

1:30 p. m.—The Bergtholdt Plan, J. E. Bergtholdt; The Nursery Industry and Taxation, Elwell D. Moore; Nurserymen's Bud Selection Association, William T. Kirkman, Jr.; Quarantine No. 37 and the Plant Industry, R. Kent Beattie; Can California Supply the Plants Formerly Imported?, W. B. Clarke.

7:30 p. m.—The Commercial Plant Industry, a Picture Story. Short addresses by C. B. Weeks of Bud Selection Association, William T. Kirkman, Jr., Ernest Braunton, John Bodger and others. Divisional sections: Fruit Trees, J. E. Bergtholdt, chairman; Ornamental Plants, W. E. Clarke, chairman; Florists, George F. Otto, chairman.

Friday, October 21

9:00 a. m.—Growing Plants and Flowers Under Glass, Walter Armacost; The Need of the Landscape Architect, O. W. Howard; Magnitude of the California Seed Industry; John C. Bodger; Salesmanship and Credits, E. W. Horton; The Regular vs. the Japanese and Amateur Nurseryman, J. W. Barnicott; Future of the Nursery Industry, Max Crow.

1:30 p. m.—Automobile trip for visiting delegates to the growing establishments of Roy F. Wilcox and Company, Howard & Smith, Huntington Estate, Washburn & Bassett. Make auto reservations with A. F. Borden, chairman, 218 West Seventh Street, Los Angeles.

2:00 p. m.—Ladies' auxiliary, place to be announced.

8:00 p. m.—Reception to visitors, Exposition Building, Assembly Hall.

Saturday, October 21

9:00 a. m.—Business meeting, reports of committees, selection of the 1922 meeting place, election of officers.

1:30 p. m.—Auto trip for visiting delegates to Beverly Hills Nurseries, the plant of Armacost and Company and beach resorts.

PROGRAM CALIFORNIA FLOWER AND HORTICULTURAL EXHIBITION

THE exhibiton will be open daily from 10 in the morning to 10:30 in the evening, except on the opening night, Thursday, October 20, when it will be thrown open to the public at 7:30.

Thursday, October 20, Opening Day. Exposition Open to Public at 7:30 P. M.

7:30 p. m.—Opening ceremonies on stage in floral department. Short addresses by prominent Californians.

8 p. m.—High class vaudeville and musical program.

Friday, October 21

Rotary, school children, Pasadena and Woman's Club Day. Rotary Clubs of Southern California will assemble on the grounds at noon for luncheon and joy session.

Saturday, October 22, Los Angeles County and Avocado Day

6:30 p. m.—Official banquet of show at Ambassador hotel.

Sunday, October 23

All-California Day.

Monday, October 24

Motion Picture Day.

Tuesday, October 25

Beach Cities Day.

Wednesday, October 26

Home Day. The lights fade at midnight.

Note—Certain days will be designated as Rose Day, Dahlia Day, Chrysanthemum Day, etc.

A pleasing program of high class entertainment, consisting of vaudeville, music and so on, will take place from 2 p. m. to 5 p. m. and 7:30 p. m. to 10:30 p. m. each day.

THE STATE FLOWER SHOW

By Ernest Braunton

Several hours spent in careful examination of the grounds and plans of the California Flower Show and Horticultural Exhibition to be held in Los Angeles, October 20-26, thoroughly convinces the writer that it will be many times as large as the best yet staged west of Chicago, and in importance, as well as spectacular features, will far surpass anything ever dreamed of in the western half of the United States. While directly under the control of the California Association of Nurserymen, held at the time of their annual convention, other organizations contributing or holding their conventions during the same week and in the same building are many.

Opening on Thursday, October 20, the nurserymen will first hold their convention. The California Avocado Association will hold its semi-annual meeting at 1:30 p. m. in the State Horticultural Building, October 22, and its banquet the evening of the same day at the Ambassador Hotel. This banquet will this time have an added significance for it will be the official "feed" of the Flower Show. The speakers will be chosen from the ranks of the various organizations taking part in the great exhibit. The noted autumn flower show of the Pasadena Horticultural Society will become but a part of the greater show. The California Fruit Growers convention will open Monday, October 24, at 9:00 a. m., under the gavel of State Director Hecke. The convention of the county horticultural commissioners and others will follow.

The grandest outdoor floral display of western America will be seen covering the entire seven acre sunken garden of Exposition Park, to which nurserymen and florists from all parts of the state have contributed. Already in full blossom the thousands of plants present a truly gorgeous array of colors and have been so cared for that they have been "timed" to be at their best during the show week. In the center of this sunken garden is a fountain basin 100 feet in diameter from the edge of which several hundred jets will send their waters 30 feet into the air, while fewer and larger "squirts" form a pyramidal aqueous centerpiece with one gigantic column of water as the fountain center. All this is driven by engines specially installed in underground vaults. There too, is the electricity generated for the thousands

(Continued on Page 411.)

Agricultural News Notes of the Pacific Coast

Northern California

November 21-26, dates of Oroville's Orange and Olive Exposition.

Some sales of seed rice have been made at Willows at three cents.

Six power plants are proposed for the north fork of the Feather River.

Sale of 600 bags of rice at $3 per 100 is one of the first reported for the new crop.

The recent hot weather favored an especially luxuriant growth of alfalfa in the Sacramento Valley.

The California Prune and Apricot Growers has been loaned a million and a half dollars by the war finance corporation.

The farm home department of the Livermore center held a hat and dressmaking meeting last Tuesday afternoon.

The Butte County farm bureau made tour of observation of the plant introduction gardens at Chico on the last day of September.

Livermore Valley of Alameda County reports the hot weather has ripened grapes rapidly and picking is proceeding satisfactorily.

Prune growers of Corning, Tehama County, have harvested a crop of about 4000 tons and there is talk of establishing a packing house to care for future crops.

The cannery at Decoto, Alameda County, has been sold to K. Hovdon, a packer of Monterey and San Diego. The Decoto cannery is now working exclusively on apples.

The state forestry board is cooperating with the Yolo County supervisors in the planting of trees on an additional 50 miles of county highways. Fifty miles already are planted.

The third special silk train to leave San Francisco over the Southern Pacific lines within a month went east this week, carrying 131 tons of silk, valued at well over a million dollars.

The Anti-County Division League has been formed to oppose the proposed charter of city and county consolidation. Membership is found not only in Oakland but all sections of the county.

Local meetings of Tehama County farm bureau: El Camino, 17; Henleyville, 18; Corning, 20; Bend, 21; Los Molinos, 24; Liberal, 27; Bowman, 29; directors, Red Bluff, 22, 10 a. m. All other meetings, 7:30 p. m.

The Stockmen's Protective Association of Livermore Valley held its final meeting of the season at Livermore October 2. L. Bristow of Stockton, secretary of the Central California Wool Growers' Association, addressed the meeting.

Manager Inman of the Pacific Rice Growers Association says he has been advised by the war finance corporation that funds will be advanced to Sacramento Valley rice growers only on condition 70 per cent of them work together in one organization.

Olive growers of Placer County have made arrangements to handle their olive crop cooperatively. County Agent McCallum called growers together to discuss the proposition at the Placer County Canners Association office at Lincoln. F. W. Cornell of the Wyandotte Olive Growers Association told of success of that organization in Butte County.

Central California

Citrus growers of Lindsay, Tulare County, are talking over possibilities of a citrus exposition there.

Kern County farm bureau will picnic at Sweitzer's Grove near Bakersfield today, Saturday, October 15.

The California Peach and Fig Growers has two large canning plants where fresh figs are put up for later market.

The Tulare County Grange held its annual picnic on the occasion of the dedication of Cutler Park last Saturday, October 1.

Mendota, Fresno County, reports cattle and sheep feeding on stubble; very little plowing begun yet; pastures fair but ranges poor.

"Rainmaker" Hatfield is said to be offering his services for the coming wet season to the grain men of Kern and Tulare Counties.

The case of the Tulare irrigation district against the Lindsay-Strathmore district has been reopened at Visalia. Judge Peter J. Shields is trying the case.

The Kerman, Fresno County, Chamber of Commerce bought 1000 sweat boxes to assist local ranchers to ship their own raisins, the raisin company opening a special receiving station.

More than 80 per cent of the peach and fig crops of the valley have been received at the packing houses of the California Peach and Fig Growers' Association, according to J. F. Niswander, vice president and general manager.

More than $6,000,000 will be paid out on November 15 by the California Associated Raisin Company to its members in final payment of the 1920 crop. This will bring up the total payment to $37,000,000, or rather more than the 1919 total.

Over 90 per cent of users of water from the Kings River, representing 1,200,000 acres, have reached an agreement on future division of water rights. This, in the opinion of experts, makes the big Pine Flat irrigation project immediately practicable.

One hundred and ten thousand people attended the Fresno District Fair during the week ending October 1, or about 10,000 less than last year. Financial obligations will be met, announced Manager H. E. Patterson, who is to be congratulated under the circumstances on the satisfactory results.

Revised crop estimates by the California Peach and Fig Growers, Inc., place the total peach crop of the state at 20,000 tons, of which the association will handle 16,000 tons. Fully 75 per cent of the new crop has been sold, according to J. F. Niswander, general manager, on a basis to the grower of from 9 to 10 cents.

Commissioner Beers of Merced County reports: "More fruit trees and grape vines have in all probability been planted in Merced County in the last two years than in any other county in California, with one exception. The fruit industry is the most important crop in the county. Vegetables have become of great importance also. According to figures furnished by the county assessors, Merced has more acres planted to alfalfa than any other county in the state."

Southern California

Unsettled weather held up bean threshing for a couple of weeks.

1500 acres of pimientos are ready to be harvested at Garden Grove, Orange County.

The Coachella Valley Grape Growers Association has filed articles of incorporation.

A Blythe pomegranate grower has sold his entire crop at $90 a ton, f. o. b. Blythe.

The Mohave Valley Fruit Association shipped a carload of fruit from Victorville last week.

Levees along the San Jacinto river are being repaired. No new piling is being driven, but much brush work is being done.

The Orange County farm bureau is working to secure location of terminal elevator of the California Grain Elevators Corporation.

More than 3,700 tons of peaches and apricots were processed at the California Growers Association cannery at Hemet this season.

Due to expiration of many Japanese land leases there is an increase in number of Americans growing lettuce in Imperial Valley this season.

Plantings of lettuce in Imperial Valley are between 12,000 and 14,000 acres, with Brawley district showing greatest increase over last year's acreage.

Imperial Valley has a blackbird, as well as a duck, control committee. It is asking the U. S. biological survey to help drive them from the grain fields.

The Associated Chambers of Commerce of Orange County are asking Orange County people to demand of grocery stores Orange County made beet sugar.

Orange County's Valencia crop next year promises to be ten per cent greater than last year, according to district freight and passenger agent of the Southern Pacific.

R. E. Nebelung, formerly adviser of San Bernardino County has sailed for Pretoria, South Africa, where he will be engaged in citricultural work for the government of South Africa.

Directors of the Orange Belt Honey Producers Cooperative Exchange met October 5 to discuss terms of contract with the state association. The old contracts expire January 1, 1922.

The walnut packing house at Garden Grove, Orange County, opened October 1 and shipped the first week two cars of whole nuts, one to Trenton, New Jersey and one to New York City.

The Riverside County supervisors have given assurance that the bad piece of road between Indio and Palm Springs will be put in good shape before the date festival at Indio, October 21-23.

Fifty officers and members of the Northern Orange County Citrus Association met at Fullerton last week to discuss proposal to have the Citrus Exchange buy six army transports to use in carrying fruit to the Atlantic coast.

Effort will be made by the state department of agriculture to form a permanent quarantine committee of the railway companies to work with the plant quarantine officers of the states comprising the membership of the Western Plant Quarantine Board.

The Coast and General

Yakima, Washington, is sending out several carloads of pears weekly.

Some damage to vegetables was done by early September frosts in the Hood River Valley of Oregon.

Hawaii shipped to the United States during last August 25,100 pounds of honey; Porto Rico, 62,309 pounds.

Lewis County, Washington, claims the largest number of federally accredited herds, 12, of any county in the state.

The West Virginia Farm Bureau Federation has 15,000 members who last year cooperated in marketing wool and potatoes and in buying fertilizer.

Unusually heavy rainfall was reported last week by observers of the weather bureau at Grand Canyon, Prescott, Seligman, Williams and Yuma, Arizona.

Over 700,000 cows are owned by members of the New England Milk Producers' Association. It handles between $1,500,000 and $2,000,000 worth of milk per month.

The annual meeting of the National Grange will be held at Portland, Oregon, November 16-25. A special train will leave Boston, November 9, gathering delegates as it moves westward.

The grape growing possibilities of the Yuma and Gila Valleys of Arizona have been investigated by a number of Fresno County, California, grape growers and favorable report made.

Recent rain in the Salt River Valley of Arizona was not sufficient to cause damage to the cotton crop other than a few days delay in picking; the date crop, however, was slightly damaged.

A carload of cantaloupes was shipped from Nevada to the San Francisco market last week. They were grown in Churchill County on what is known as Uncle Sam's $9,000,000 farm, a government irrigation project.

While cotton in the Salt River Valley of Arizona has improved greatly since the latter part of August, the crop, owing to much shedding in July, will be considerably below the average. Picking and ginning are just getting a good start.

Fruit growers of Colorado, Idaho, Oregon and Washington are much encouraged with the market outlook for their crops this year. Late estimates for the Eastern crops are greatly reduced, and recent reports from England's apple orchards show only 30 per cent of normal yield.

Apple shipments from the Wenatchee Valley for this year are estimated at between 15,000 and 16,000 acres, as against 9464 last year and 12,350 for the banner year of 1919. During 1919 apple shipments from the Yakima Valley were 11,500, and 9522 cars in 1920. This year between 12,000 to 13,500 cars are expected to move out of that territory.

The rainfall in Tillamook, Oregon, for the year ending September 1, 1921, according to the report of the local weather office, was 152.2 inches. This is the greatest year's rainfall ever recorded at any station in Oregon since the state has had the government weather service. The greatest previous reported was 151 inches, several years ago. For the year ending September 1, 1920, Tillamook had 67.5.

California Leads in Hops

By E. Clemens Horst in San Francisco Business

HOPS have for many decades been one of California's agricultural specialties. Even with prohibition generally enforced throughout the United States, California last year produced about 21,000,000 pounds of hops, which were sold for approximately $5,000,000.

California is the greatest hop producing state of the Union in point of tonnage and the greatest in the world in average harvest per acre and modern methods of culture. In the harvesting of hops California has made the greatest advance in that it has developed the hop picking machine which is now used on many of the large hop ranches, not only in California but in other parts of the world. This is one of the most elaborate and at the same time most efficient of the labor saving machines employed in agricultural industries.

Harvesting

When hops are picked the vines are cut from the trellis and hauled in wagons to the hop picking machines where they are fed into the machines at the rate of about 12,000 vines per ten hour working day, which means the picking of about 50,000 pounds of undried hops per day. The labor saving by the machine figures roughly about 10 per cent of what would be required to do the work less satisfactorily by hand.

After the hops are picked, they are laid on the kiln floors or drying floors where they are kept 12 to 24 hours for drying. They are then moved into cooling houses where they are kept for one or two weeks' time and put into bales weighing about 200 pounds each. For export business these bales are very frequently recompressed into bales of one-half to one-third their original size. This recompressing not only better preserves the hops but also effects a very substantial saving in freight rates.

Regarding the rank among the four states which grow hops on a commercial scale, California is first, Oregon second, Washington third, and New York fourth.

The average production per acre in hop growing is officially reported as follows: England, 900 pounds; Germany, 500 pounds; United States, 885 pounds; California, 1500 pounds.

California grows successfully hops of every known variety. The richness of California soils, especially its creek and river bottom lands, where all its hops are grown, has always resulted in large yields per acre.

The dryness of California's climate has guaranteed its hop harvest against loss from the many hop pests that frequently destroy the crops of other districts in the United States as well as foreign crops. The abundance of water in all the hop growing districts of the state has guaranteed growers against the loss or serious shortage of their crop by drouth.

During the whole history of the industry in California there has never been a serious crop shortage although hops are one of the most hazardous and difficult crops to grow. It is because of this reasonable certainty of success that this industry has developed in California to its present extent, in spite of the wild fluctuations in hop prices and the frequent condition of prices being far below the cost of production.

Hop growing is intensive farming of the highest type. The cost of production is almost entirely for labor. Few, if any, crops require as many days' labor per acre to grow and harvest as are required for hops. Though California has never had more than 15,000 acres in hop culture in any one year, it has taken the equivalent of 400,000 days' labor simply to pick, dry and bale a season's crop from that acreage. To this must be added the cost of growing the crop, which requires almost daily attention, for every vine in the pruning, tying and training of the same.

In richness of essential qualities of hops the California product is in a class by itself. In soundness, that is, freedom from blight or disease, it is unequaled. In methods of culture the California hop growers have set the highest standards in the world.

When hop prices are high the profits on hop growing are fabulous. Some of the best lands produce as much as 2500 pounds of dry hops per acre, and when, as last year, hops sold at $1 per pound, it was equivalent to a gross revenue of $2500 per acre. Unfortunately, however, it too frequently happens—as is the case at the present time—that the cost of production is far in excess of the price to be realized from the crop, and in those cases the losses are so severe that few hop growers are able to stand the strain.

The counties which lead in California's hop production are Sacramento, Sonoma, Mendocino, Yolo, Tehama, Yuba and Placer.

In the Workers Camp

Hop growing has, of course, been very adversely affected by prohibition, as this has killed approximately 75 per cent of the American market. The outlet for the American crop today is the export market where Californian hops stand in high favor. It may be noted, however, that the principal export market is now in danger of being entirely lost by reason of our principal customer, England, having placed an embargo against the importation of all foreign hops, except by licenses which are only occasionally given, and it is doubtful to what extent future licenses will be issued. The policy of England is to build up the hop industry within its own country, so as to supply its own market from its own production.

The 1921 hop crop in California on July 1 was about 80 per cent of the normal as compared with 92 per cent over a ten-year average. Production this year should be about 16,000,000 pounds, as compared with 21,000,000 pounds in 1920.

Because of the medicinal value of the resins, tannins and other chemical constituents of hops, they are frequently prescribed by physicians for many ailments, particularly for hot hop compresses and for harmless sleep producing results. They are also used as an essential ingredient in most forms of yeast for bread making.

Few crops in the world are more picturesque than hops. The vineyards of Spain, grown on tall trellises, might compare with them in charm to the eye, but hops with their large lobed leaves of beautiful green, and their profuse green and yellow blossoms, command universal admiration.

Hop picking is a vacation job for many thousands of Californian families each summer. Hop growers provide camping accommodations for this transient labor, and many a city family turns vacation time into real money, beside returning to accustomed urban labors with renewed health and vigor.

The hop is a member of the hemp family. The root is perennial. It sends forth several rough, harbaceous twining stems which are trained on twine to an overhead wire trellis about 18 to 20 feet from the ground, supported by posts at regular intervals.

(Continued on Page 407.)

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POTATO GROWERS CONFERENCE

By R. G. Risser, Manager Crop Production Department, California Vegetable Union

A VERY fine series of meetings has just been held for the benefit of potato growers from various parts of the state. A very comprehensive program dealing with many important phases of the potato industry was presented by more than 20 speakers. Unfortunately the attendance was not large and many growers missed the meetings, which were very much worth while. The sessions were held at University Farm, Davis, October 4-5, and at Berkeley, October 6.

One of the first things brought out was the difficulty of undertaking the breeding and introduction of improved potatoes by the individual, and it is hoped that the college of agriculture or the United States department of agriculture will be able to undertake work of this kind for California, as it requires years of effort to accomplish valuable results. The difficulty of distinguishing potato varieties by the type of the tuber was another point which was made quite emphatically, and it was clearly shown that the type was changed under different growing conditions. Difficulties in growing high grade seed potatoes for special localities were also brought out. Confusion resulting from misnaming and renaming of varieties had been the cause of serious trouble in many instances.

The wide differences between the growing practices of producers in different localities of the state became more apparent as the conference proceeded. The use of whole seed grown especially for seed purposes, harvested prematurely and greened before planting was persistently advocated by one of the authorities in attendance but did not meet the popular approval of growers present, who were inclined to consider it an impractical measure. These growers fully recognize the difficulty of getting a good stand of fall crop from new seed and also realize that storing of seed would be expensive. One practice suggested for improving the condition of new seed at planting time consisted of covering the piled potatoes with straw and keeping the straw moist. The cooling effect of this treatment was said to improve the stand by preserving a healthy condition of the tuber. The importance of having the soil cooled by thorough irrigation prior to planting was also emphasized as a means of promoting a good stand. On the whole, this problem of stand of fall crop was regarded as one of the most serious ones needing solution.

Various diseases received lengthy discussion. The shoestring disease, which was common in 1920, was attributed to high temperatures occurring when fields were slightly short of moisture, particularly upon varieties obliged to support a large leaf surface or vigorous top growth. Many interesting points were brought out about the nematode, and it was conceded that this pest is the most serious one connected with potato growing. Control of the spread of the nematode was touched upon but no quarantine action was definitely decided upon as the best means of restricting its progress. Methods of protecting potatoes from attack by tuber moth were fully explained. Deep planting, thorough hilling, prompt digging, and expeditious delivery to the cars were recommended. Much damage and loss may be avoided if these suggestions are carefully followed.

The use of mineral fertilizers liberally applied, of special deep tillage implements, and of planting, digging and ditching machinery were features of the new type of potato farming inaugurated in the Delta so successfully by Fred Rindge. The practice of subirrigation and the use of different varieties of seed were other topics of special concern to the Delta grower.

The work of the farm bureau was very ably presented. In the course of the remarks meetings which considered freight rate reductions were mentioned and the part played by Thomas O'Neill, president of the California Vegetable Union, was brought out.

Something of the significance of the potato as a world food product was discussed and the paramount position of this crop in the dietary of the European nations was considered in connection with the support of the thickly populated regions of that continent.

The grading of potatoes by the associations in Southern California was reviewed with considerable satisfaction. The opinion of the trade which handled these graded potatoes was extremely favorable towards the new practice and enthusiastic regarding its possibilities.

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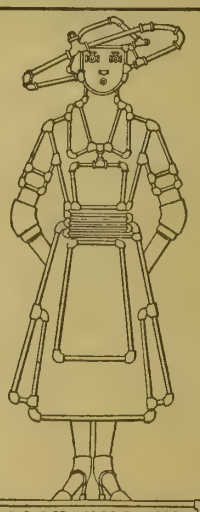

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Eagle Rock California

potatoes was shown by maps and charts and it was readily seen that the task of properly distributing a potato crop was one which was very complex, requiring for best results a thorough and up-to-the-minute knowledge of the situation, based upon adequate telegraphic advices from personal representatives in the producing and marketing centers.

The last speaker mentioned the disorganized conditions which have existed in certain sections amongst growers where buyers had pitted one grower against another in normal times and left the district uncared for when there was no opportunity to make a profit by speculating on the crop. The present tendency is toward organization, standardization and better business practices in handling potatoes.

On the whole a great deal of information was gained by the exchange of ideas and D. H. Carey of the university deserves credit for arranging an excellent program.

FERTILIZING WALNUTS

By Ernest Braunton

Ralph McNees of Whittier has one of the best walnut orchards in his district. The older planting of 30 acres is just 30 years old. In years gone by this orchard was noted for its production record. It is not less vigorous today but it is not fed so heavily as in former times.

"There was a time," said Mr. McNees, "when I could get barnyard manure for the hauling and every part of the orchard had a good covering every year just when the trees were at the most susceptible or impressionable age. Now I buy 500 to 600 tons each year and aim to get over every part of the orchard at least once in three years. This supply is supplemented each year with a cover crop of melilotus, which gives me more humus and more nitrogen, and for solid food I feed phosphate, acid phosphate.

"I have found phosphate pays well, gives good returns—better crops. It also counteracts perforation, for where I have given the most phosphate I am sure I have the least perforation. I have been applying but 500 pounds per acre, usually broadcasting it, especially if I expected to work the soil shortly afterward. If not it should be drilled in or applied as Shamel recommends with manure, in deep furrows. I usually apply it in November, although it would be as well given right now, but at present I lack the necessary time.

"I sow melilotus in September; you will notice how the late rains brought it up. I sow from 15 to 20 pounds to the acre. As soon as leaves fall and light gets into the old orchard it will commence to grow rapidly but it should have an early start. When my nut crop is off my hands I shall furrow for irrigation and broadcast the usual amount of acid phosphate. The rains, on the whole, have been beneficial. While the nuts are now slightly discolored, the bleach will remove all that. The hot spell resulted in many "stick tights" or tight hulls, which the rain loosened considerably. Rains also boosted the cover crop into a good start, phosphate will give it another and soon it will grow out and cover the irrigation furrows I shall make when this nut crop has gone."

CALIFORNIA CITRUS GROWERS INDORSE PRODUCERS STEAMSHIP COMPANY

Approving the recommendation of the water transportation committee of the California Fruit Growers Exchange that a producers' steamship company for the transporting of citrus fruits from Los Angeles harbor to Atlantic Coast ports be organized, the board of directors of the exchange has taken official action indorsing the project and authorized the management to secure contracts for a minimum of 2,000,000 boxes of fruit for water shipment.

The plan for the organization of this new steamship line, which will be called the Producers Steamship Company, provides that the citrus growers of Southern California shall enter into contracts covering a period of three years guaranteeing a yearly tonnage of 2,000,000 boxes or 5,000 carloads of citrus fruits by the water route to the ports of Boston, Philadelphia and New York.

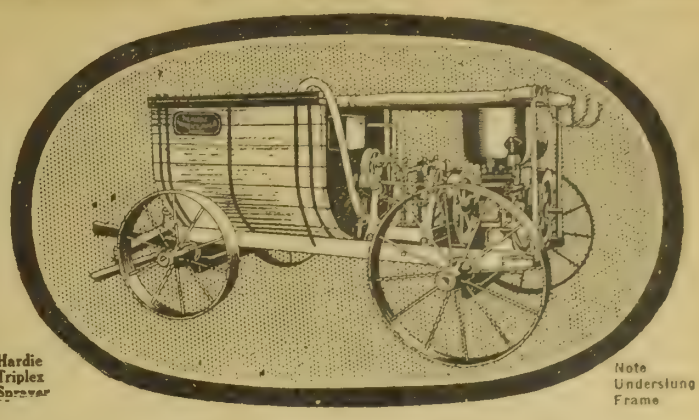
According to C. S. Whitcomb, chairman of the water transportation committee, these contracts are necessary as a foundation for the securing of the $2,000,000 needed to finance the first three years' existence of the company.

"It is expected," said Mr. Whitcomb, "that the majority of this stock issue will be subscribed for by the grower members of the California Fruit Growers Exchange, as it is the citrus grower primarily that will benefit by this producers steamship line operating out of Los Angeles harbor.

"The $2,000,000 received at this time from the sale of 20,000 shares of this stock at a par value of $100 per share will be used for the organization and preliminary work: the erection of a pre-cooling plant and wharf at San Pedro, trucking equipment, chartering of six fast ships, and the securing of adequate terminal facilities at Philadelphia, New York and Boston.

"Our plan," said Chairman Whitcomb, "provides that the Producers Steamship Company shall render exactly the same service to the shipper that the railroads now furnish. The steamship company will send its trucks to take and receipt for the fruit at the door of the packing house of the shipper, transport it to San Pedro, place it in a pre-cooling plant at the dock,

(Continued on Page 407.)



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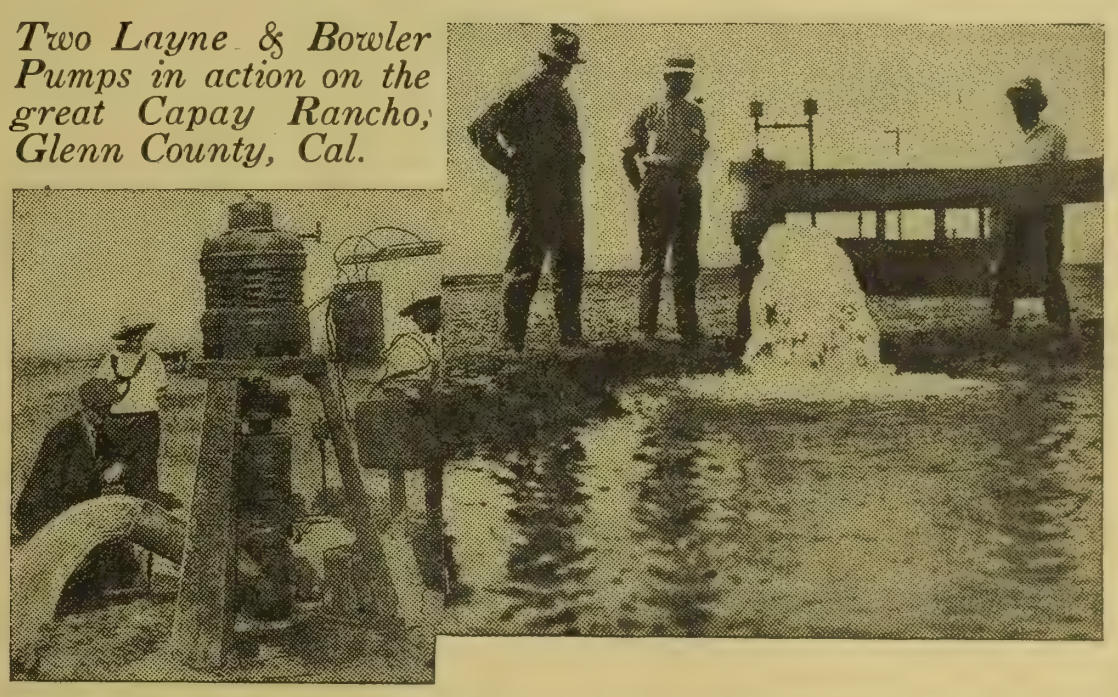

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Home Made Olive Oil

FOR something like 2,000 years we have been producing olive oil and processing in much the same way. The principal factor in its manufacture is absolute cleanliness; if that is observed the exact steps to take are not material. However, this paper has given in preceding years an article written for the Cultivator by W. V. Cruess. It has already been repeated once by request and now comes suggestion that its value may be as great for oil producers as at that time.

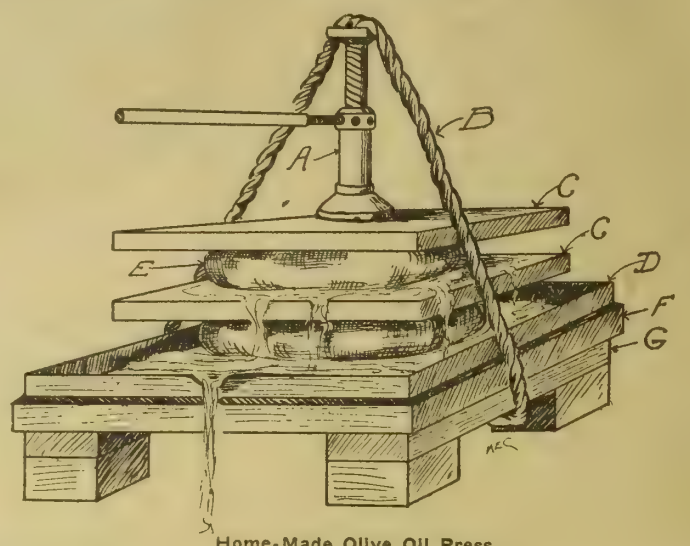
By W. V. Cruess

There is no thorougly satisfactory way of making olive oil upon a very small scale without expensive machinery. The methods described below are the best that we have been able to find or devise for small scale use, but the yields of oil when compared with commercial factory yields are low. The necessary utensils can be found on any farm.

Extraction of Oil Without Pressure

A pound or two of ordinary lye, such as Babbit's, Red Seal or Greenbank's lye, will be needed. Make up a solution of the lye of one-half pound of the lye per gallon of water, using an agateware or iron pot. Do not use your aluminum ware; it will dissolve in the lye. A small basket of wire screen such as is used for making French fried potatoes will be needed or a piece of cheesecloth can be used

Heat the lye solution to boiling and while it is boiling dip the olives in it for about 20 seconds. The time will vary with the toughness of the skins. Leave the olives in the lye until the skins are softened; that is, practically dissolved. Then plunge them into cold water for a few seconds to check the action of the lye.



Home-Made Olive Oil Press
Plan and drawing by Prof. W. V. Cruess. Specifications in Prof. Cruess article.

Place the lye treated olives in a piece of fly screen tacked to a frame over a large dishpan. Rub them on the screen until the flesh has separated from the pits and dropped through the screen into the pan. A heavy pair of gloves is useful in this process to prevent the hands becoming badly stained and roughened by the lye and olive juice.

Place the pulp, which should now be of a pasty or mushy consistency, in a pot with about two or three times its own volume of water. Heat while stirring to the simmering point for about one-half hour. Set aside for several days to permit the oil to raise to the surface. Usually a fair yield of oil can be obtained by skimming it from the surface of the pulp. The pulp may then be heated to boiling a few minutes with more water and allowed to stand again. The process should be repeated several times. We have obtained about two thirds the yield of oil by this process that can be obtained by use of a commercial press. The secret of success lies in rubbing the olive flesh to a fine grained pulp on a screen.

The oil obtained by this process must be washed and should be filtered as described later in the article. It has been found that the yield of oil is sometimes increased by adding about one-fourth pound of salt per gallon of water used with the pulp. Always use a large excess of water with the pulp, as this facilitates separation of the oil.

Home Made Olive Press

A simple press made from materials usually found about the place is shown in the accompanying figure. This press has been described by F. B. Pinkus in the Olive Journal. The writer has made several modifications in the original plan of the press.

A, heavy wagon or automobile jack. B, small iron or steel cable or chain or heavy rope. C, two pieces 2x2x12 inches. D, shallow wooden water tight tray. E, heavy burlap cloth to hold crushed fruit. F, floor of 2x12 inch material. G, 2x4 inch braces. The tray D and floor F are 16x16 inches.

One of the greatest difficulties will be the crushing of the fruit. This may be done as described for the method above. If this method is used, return pits to the olives before pressing. The olives may also be crushed by placing them in a string sack and hammering the sack with the broad side of an ax or with a heavy board in the same way that ice is crushed in a sack. The fruit must be thoroughly broken up. It will crush better if it is boiled a short time to soften it.

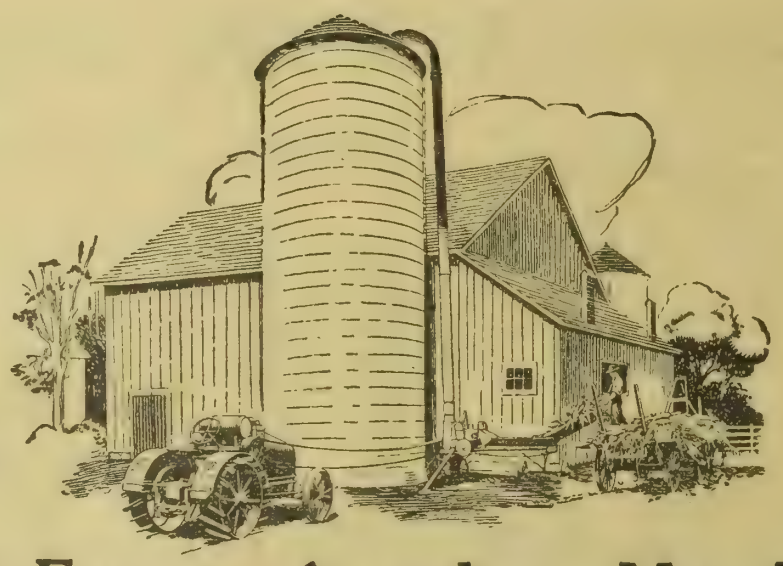
Place the crushed fruit and pits in a piece of heavy burlap and fold the edges of the burlap in to give a press cake about 10 by 10 inches and about four inches thick. Make two of these and place them in the press as shown in the figure. Press slowly until no more juice can be obtained. Save all juice and oil pressed from the fruit. The pressed pulp should now be boiled with an equal volume of water and pressed again. This pressed pulp should again be boiled and pressed. Usually a fourth heating and pressing will pay. Combine all of this pressed liquid and allow it to stand in a tub or barrel over night. The oil can then be skimmed off.

Washing the Oil

Oil obtained by either of the above methods will be bitter and not clear. It must be washed with water to remove the bitterness and rough flavor. To do this first prepare a bucket or five gallon can with a hole and faucet or cork near the bottom. Place the oil in this container and add an equal quantity or more of warm water. Mix oil and water by stirring for several minutes. Allow water to settle several hours. Draw off the water and replace it with fresh warm water. Stir; settle and draw off after several hours. Repeat until the oil no longer has a bitter taste. Usually two days washing will be sufficient.

Filtering the Oil

The oil will be cloudy and mixed with a little water. It can be made clear by filtration. A tin funnel can always be bought from the hardware store. One about seven inches in diameter is a convenient size. Filter paper can be bought from the drug store. Ask the druggist to fold the



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paper for you and tell you how to place it in the funnel.

Place the funnel in a wide mouthed bottle or place a 1 by 3 inch piece of wood over a bucket and bore a large hole in the wood to take the stem of the funnel easily. Pour the oil into the filter paper in the funnel and allow to filter. Oil filters slowly. Do not become discouraged if it requires several days for it to run through the filter.

Olive oil is not fit to use as soon as it is made. It should be kept for at least one year before it can be expected to have the proper flavor. Keep it in well cleaned bottles away from bright light. Too much light will cause it to lose color and flavor. A warm room will cause it to age more rapidly. The oil will also age more rapidly if the bottles are only three-fourths full and if a small piece of cotton is used to close the bottle.

FRUIT TREE IRRIGATION IMPORTANT

Attention of deciduous fruit growers particularly is called to the importance of providing deciduous fruit trees with an ample supply of soil moisture during the months of September and October. Fruit bud differentiation is occurring at this time and if the trees suffer from lack of moisture it is certain to result in weak fruit buds for next season's crop. Many orchards have been observed where the trees are now evidencing distress from lack of moisture, and borings in many orchards have indicated that the soil moisture content is getting very low. This is the critical season of the year for deciduous fruit trees, and permitting the trees to suffer from lack of moisture at this time cannot be offset by good pruning, adequate pest control or any other measures. In fact, permitting the trees to suffer during the period when fruit buds are being formed will largely vitiate whatever results might have been secured through improved pruning. Growers are therefore warned against permitting the soil to become too dry.

PRUNE GROWERS REORGANIZE

The California Prune and Apricot Growers Association, the reorganized California Prune and Apricot Growers, Inc., which represents more than 82 per cent of the prune acreage and 75 per cent of the apricot acreage of the state, officially came into existenee with the first meeting of its voting board at San Jose in September.

The 39 members of the voting board, chosen by popular election last June, elected 14 directors for the new association and directed them to proceed with the incorporation of the association. The new directors are: W. A. Yerxa, Princeton; Lloyd H. Wilbur, Yuba City; Henry Wheatley, Napa; Mark L. MacDonald, Santa Rosa; Geo. C. Alexander, Healdsburg; H. G. Coykendall, Cupertino; T. S. Montgomery, San Jose; A. Kammerer, San Jose; J. O. Hayes, San Jose; C. D. Cavallaro, San Jose; W. R. Kingston, Ventura; C. G. Hamilton, Hemet; Arthur Swall, Tulare; H. C. Dunlap, at large.

The voting board also approved the nomination of W. G. Alexander of San Jose as the representative of Governor Stephens on the board of directors of the new association. The voting board chose Irwin E. Pomeroy of Santa Clara as permanent chairman of the new board and made Martin J. Madison of Hayward permanent secretary. Both of these men occupy similar positions on the board of trustees of the present association. Sheridan W. Baker of Santa Rosa was elected permanent vice chairman of the new voting board.

The old association will continue in existence until the 1921 prune and apricot crop has been completely cleaned up. The first crops which will be sold under the terms of the new contracts held by the reorganized association will be the prune and apricot crops produced in the fall of 1922.

NEW YORK APPLES HIT HARD

The apple crop of New York, the leading Eastern producing state, is estimated at 34 per cent of normal, slightly more for Baldwins and less for Spys, while Greenings show only 17 per cent of a crop.

PRUNES IN CALIFORNIA

The agricultural experiment station of the college of agriculture has issued "Prune Growing in California" by A. H. Hendrickson, Bulletin No. 328. It is a 40 page publication filled with information as to prune culture, from planting of seed to harvesting, curing, distribution of cost of production and other features of interest to the prune grower. In addition the station is reissuing Circular No. 212, "Salvaging Rain Damaged Prunes" by W. V. Cruess. Prof. Cruess refers to rain damage to prunes in preceding years and reaches the final conclusion: "Badly damaged fruit should not be thrown away but should be utilized for hog feed, syrup or in some other way." There are many suggestions as to how the salvaging may be accomplished.

TERRACED ORCHARDS AT LA HABRA HEIGHTS

A little to the north of Whittier Boulevard and adjoining the East Whittier district is to be seen one of the latest developments in winter gardening and avocado and citrus culture. American and modern adaptations of European and ancient methods are being strikingly and successfully demonstrated under direction of Edwin G. Hart. Terraced hillside citrus groves, even the steepest slopes of this former sheep ranch, are being transformed into highly productive property. R. L. Reynolds, a large grower of winter vegetables, has 160 acres of hillside now in crops, affording a most striking illustration of the new terrace method. Rhubarb of giant size, peppers, beans, peas, tomatoes, squash and cucumbers are growing where a few years ago it seemed too steep for anything but a sheep to travel in comfort. Near by, Robert M. Teague, a nurseryman of long experience, is demonstrating his faith in the new system by planting 95 acres of similar slopes and hillsides in avocado, citrus and other nursery stock.

Avocados are playing a prominent part in the planting scheme of most of the growers. Dr. Stonebrook has put in 18,000 avocado nursery stock as well as a budded plantation, and Clyde O. Wilcox with only five acres in a little cove near the new Country Club grounds has made a remarkable showing since last spring. Avocados of the Fuerte variety planted in May have grown as much as three feet, seedlings have made two feet and a fine crop of squash and cucumbers has been raised between the rows. Many other holdings are planted in citrus and avocados, winter vegetables and nursery.

BRAZIL NUTS

From time to time we hear of someone who claims to have growing trees, or a tree, of Bertholetia excelsa, that bears the Brazil or Para nut of commerce. Of late a most persistent claim, covering seven years, of the possession of two of the trees, grown from seeds, caused an investigation, only to find they were Mexican avocados. As the grower had reported these trees to the agricultural department at Washington the writer sent in the facts. A portion of the reply of Peter Bisset, plant introducer in charge of this phase of work, is here given.

"We have had a number of letters from people in Southern Florida who claimed to have seen a tree of the Brazil nut near Fort Myers, Florida, but upon inquiry we found it to be something else. There is no tree growing in the open of the Brazil nut that I know of at the present time. The tree is a very tropical one and is seriously injured by the lightest frost. We have tried it several times at our Miami, Florida, garden, and each time it has been killed."

SHORT COURSE IN SPRAYING

A short course in spraying will be given October 13 to November 17 at Chaffey Junior College, Ontario. Meetings will be held on Thursday evening of each week for six weeks, each session to last one hour only. The course will be of a practical nature and is designed to meet the needs of the fruit growers who are constantly facing the problem of insect and disease control by spraying.

Plant an Orchard

Our foothill soil and location produces a tree that for hardiness, good roots, and freedom from disease cannot be duplicated by any other section

Growing fruit is the best paying business in California.

The acid test of any business is not what it will do under favorable conditions but what it will do under adverse conditions.

Even under this year's depreciated values, the orchardist with a block of **Prunes, Bartlett Pears, Apricots, Cherries, Raisins, Shipping Grapes, Clingstone Peaches, Drying Peaches, Fall Pears, Almonds, Shipping Peaches, Shipping Plums, Canning Plums,** and **Figs** will make more money than the grower of grain, hay, alfalfa, beans, rice, or the dairyman.

The trees you plant now will, five and six years hence, assure your share in the profits inherent to the California fruit grower.

The supply of trees in the State available for planting is not over 60 per cent of the trees budded last fall. **This will result in a shortage of some of the best standard varieties.**

We offer for your planting the most complete assortment of commercial fruit varieties.

Our trees are the best that care in propagation and efficient workmanship can produce.

Our catalogue, full of accurate practical horticultural information and suggestions, and our thirty years' experience in fruit growing and fruit marketing, are at your service for the asking.

Submit us a list of your tree wants for quotation while the varieties you desire are still available in our foothill grown stock.

Write me today.

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Sec. and Mgr.

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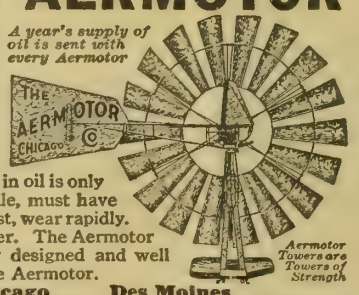

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Better service is assured by the advertiser if when writing you mention the California Cultivator.

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Fumigation After Copper Wash or Spray

How long should I wait after spraying tree with Bordeaux before fumigation?—Subscriber, Covina.

Where tree is sprayed with Bordeaux a period of 10 or 12 months at least should elapse before fumigation. This, bear in mind, where leaves and all parts of the tree are sprayed. As to fumigation of tree whose trunk only has been painted this depends entirely upon circumstances. A tree weakened by gum or other disease, which has had the entire trunk painted, might require almost as long a period as a tree which has been entirely sprayed with Bordeaux. However, with a strong husky tree which has had only the lower portion of the trunk painted it is possible one might fumigate within a very short time after application of Bordeaux, say a few weeks. If treated in the younger branches, especially the branches of later growth, the time which should elapse between the application and the fumigation might well be about as long as in the first case.

Aphis on Prunes

Can you tell me what is good for aphis on prune trees?—Subscriber, Visalia.

Apply nicotine sulphate as recommended in formulas No. 16 or 30 on pages 313 and 316 of the Cultivator spray special of September 24.

Care of Walnuts

Please inform me how many acres of walnuts and oranges one man is able to take care of well with a very good team and also milk one cow.—Subscriber, Fullerton.

This is a question we will pass on to our walnut growing subscribers. We imagine a canvass amongst the walnut orchards of the state would develop almost as many different answers as growers interviewed. We imagine one would say 10, another 20, and another 40. Presumably the harvesting is not to be included in the care of orchard. That would call for added help. But for plowing, cultivation, hand work where necessary, pruning, spraying, upkeep of parking along the roadway, irrigation, fertilization, how many hours are required for man or team? In dollars and cents Prof. R. L. Adams in his "Notes of Methods and Costs of California Crop Production" says: "Annual upkeep after maturity; fertilizer and manure, $25 per acre; cover crop, $5; plowing and cultivation, $8; irrigation, $4; water, $12; pruning, $3." This publication bears no date but as we recall its estimates were based upon conditions as they were "before the war."

Lupine Seed

Please tell me where I can get lupine seed for cover crop? Is there more than one kind, if so, which is best?—Subscriber, Selma.

Any seed house advertising in the Cultivator should be able to supply you with seeds of Lupinus arboreus, a yellow flowered species, which is probably the best of many for cover crop purposes.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Mineral Rights

If I should find gold on land belonging to someone else could I prove up on the claim without paying the owner of the land?—Subscriber, Lincoln.

It would depend entirely upon whether under the original grant from the government, minerals of the land were reserved. In most instances, however, this is not the case and it would be necessary for you to purchase the land from the owner.

Tax Exemption

Is there a law in this state, giving ex-service men exemption from taxes? If so, what is the exemption and how could I obtain it?—Subscriber, Valley Center.

The state constitution provides that war veterans receiving an honorable discharge, and certain relatives of any deceased war veteran, are entitled to exemption of real and personal property in the amount of $1,000, provided the exemption does not apply to any person owning property of a value of $5,000 or more nor to the property of any person who is not a legal resident of the state. Every person entitled to the exemption must appear before the county assessor and give such information and answer such questions as are contained in the form and affidavits prescribed by the state board of equalization. These forms will be found at the office of the county assessor. This applies to all veterans of wars of the United States and, in fact, many of the Indian campaigns.

Rent in Advance

I rented a house with a verbal understanding that the rent was to be paid monthly in advance on the first of the month. The tenant, however, paid only half the rent and promised to pay the balance in a few days. He has not yet paid it. In the future,

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No War Tax

if he should fail to pay in advance, how short a notice can be given to vacate the premises?—Subscriber, Exeter.

If a verbal lease for one year of the premises with rent payable monthly in advance on the first of the month in a definite named sum can be proven, then in case of failure to comply with the covenant of the lease, a three-day notice to pay or vacate may be served. In case party fails to pay within the three days, then an unlawful detainer action may be filed either in the justice court or the superior court; if the monthly rental does not exceed twenty-five dollars a month, and in the superior court if it exceeds that amount. If such verbal lease cannot be proven, then a thirty-day notice to vacate should be served and if the party does not vacate within the thirty days then a three-day notice to vacate followed by unlawful detainer action.

Resident of State

What constitutes a person a resident of a state?—Subscriber, Davis.

A resident of a state is one who comes into a state or resides or dwells in a state with intent to make his domicile or permanent residence therein. In order to constitute a resident there must be the union of fact and intent to make a particular state the domicile.

Deed to Church Property

Three church trustees received deed for real estate for erection of church. Deed does not contain amount paid, stating only "for value received." Is such deed legal?—Subscriber, Parlier.

By reason of the rule of law that the statement of the consideration of the deed is never conclusive as to the consideration paid, the majority of deeds executed do not state the true consideration. Therefore, the deed as given in the above question is entirely valid.

Name of Resort

What steps are to be taken when resorts in the same county and on the same highway have the same name?—Subscriber, Placer.

The senior resort would undoubtedly have the right to restrain the use of any trade name which it has taken, by any other resort wherein patrons of the first resort are liable to become mistaken. There are certain exceptions in this respect, however, one of which is that no person can appropriate the exclusive use of a geographical name.

Property in Trust

My property is invested in notes secured by mortgages in an eastern state. Can I legally dispose of my property by assigning these mortgages to a trust company with directions to collect interest and pay to me during my life and at my death to collect the principal and pay to my heirs in such proportions as I may direct?—Subscriber, Turlock.

Such a trust is perfectly legal and, in fact, the trust companies are extensively bidding for this class of business. Their fees would be approximately the same as under the probate laws. In the majority of instances there is no saving made.

Support of Wife

How long is it necessary for a husband and wife to be separated before she can compel him to furnish means of support? The separation was three years ago. The wife resides in an eastern state and the husband in California.—Subscriber, Bakersfield.

Under the California law there is no stated time that the wife is required to wait to require the husband to comply with his marital vows. The writer thinks that there is no specific length of time provided in any of the laws of any state. Many of the states have criminal proceedings making this a felony; if residing in a foreign state the husband may be extradited. If civil proceedings are taken they must necessarily be brought within the state wherein the husband resides.

Foreclosing

Can a mortgagee foreclose if the interest is not paid at the time specified?—Subscriber, Arbuckle.

An answer to the foregoing depends entirely upon the terms of the mortgage. Most mortgages provide that the mortgagee may foreclose immediately upon the failure to pay interest.

Renting to Japanese

Can an American rent land to a Japanese or make a crop contract without infringement of California law? If so, how?—Subscriber, Arroyo Grande.

The alien land law of California provides that in case of the acquisition of any interest of property by one who is ineligible to become a citizen of the United States, that the State of California may bring an action to escheat this interest to the state; that is to say, the state may after the proceeding in law, acquire whatever interest the alien may have in the property. The law does not in terms prohibit or invalidate any transaction whereby the alien acquires such property, or interest therein. The courts have, therefore, held that as between the private individual concerned in the transaction it is valid and enforceable; that the sole party who can step in and take the interest of the alien is the State of California in an action brought in its name. This applies to a cash lease. Whether or not the crop contract is within the provisions of the alien land act so that the state might acquire the interest of the alien is an undecided question.

Removal of Cemetery

What is the gist of the new law pertaining to the removal of old cemeteries?—Subscriber, Wasco.

The act passed by the last legislature deals with cemetery corporations in towns of not less than 100,000 persons wherein burial in the cemetery has been prohibited by ordinances for 15 years or more. It provides a means whereby the cemetery may be abandoned and for the removal of remains to a cemetery outside the boundaries of the city or to a memorial mausoleum. The act is quite long, and detailed, providing for specific notice to be given to all persons interested by publication in newspapers and posting copies of notice and mailing notice to every person who owns a lot in the cemetery. After notice, petition may be made to the superior court, permitting the corporation to dispose of or mortgage property.

Loan to Soldiers

Under the act whereby ex-service men are entitled to borrow money for the equipment of ranches, are they required to have been natives of the state of California? My husband was a native of Illinois, but he bought property in California and we are making it our permanent home.—Subscriber, Vacaville.

The act referred to does not exclude those who have preferred to make their residences in this State than elsewhere, but merely at the time of enlistment, induction, commission, or drafting, the individual who served in active duty in the military forces of the United States in time of war and received an honorable discharge therefrom was, in fact, a bona fide resident of California.

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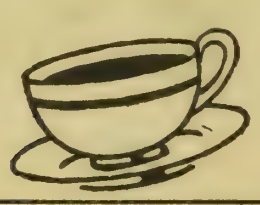

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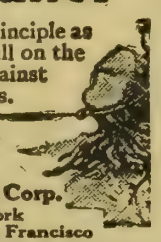

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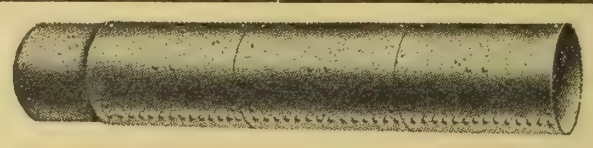

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When Writing Advertisers Mention California Cultivator.

Household Department

SUCH AS THESE

The little rose that blooms within our garden row
Fills all the walk with sweetness;
The little bird that swings the lilac bloom down low
Sings joy of life's completeness;
The round old sun that rolls up easy, all a-grin,
Warms half the earth with laughter;
The child that looks up startled at our grievous sin
Forgives and loves us after.

All these we love. And so we love those men whom woe,
Experience and wisdom have not yet bereft
Of what we love these for. The merry heart we love,
And him who has a part of childhood's sweetness left.
—Annette Davisson Squire.

HOW THE OLD TOWN HAS CHANGED

By M. O. Holt, in Placer Herald

THE ultimate fate of Michigan Bluff in Placer County is not unlike that of other depopulated mining towns. Thirty years ago, it, with the not far-distant mining camps, was a live town of probably a thousand people. On Sundays when the miners came from Turkey Hill, Sunny South, Deadwood, Damascus and the American River mines, there was life not devoid of excitement.

The early population was typical of the miner. They had to be strong. Muscle was the thing. The miners used to say that their wealth was in their arms and shoulders. To walk to Auburn, a distance of thirty miles, in part of a day was not considered unusual. They had endurance, these sturdy mountain men. They could not be daunted. They hydraulicked off whole mountain sides. To get water they dug a fifty-mile ditch to tap far-off mountain streams. They turned the course of the American River at Horse Shoe Bar by blasting through the horseshoe of bedrock, making a tunnel ten feet high and several score of feet in width, so as to work the river bed. They took mining machinery, stoves and other heavy burdens into far away canyons, where there were no roads, and slid them down to the water's edge. They carried provisions on mule back over almost inaccessible trails far into the mountains. It thrilled the writer, when a boy, to look across the winding El Dorado Canyon trail, to see Alfred Dixon's pack train and to hear the driver's yodeling re-echoing among the mighty hills.

The miners worked underground in foul air and dripping water, wearing rubber coats heavy enough to fatigue the strongest. No wonder their constitutions often broke down early. No wonder that the county hospital later claimed them. But it was the lure of gold. "Just another month and I will break through into pay dirt," was the fervid declaration of many a prospector. The month lengthened to years, the tunnel became sacred, but finally the prospector, bowed down by toil, hardship and privation, found a rest in the county hospital, not having found the treasure he sought for so many years. Still many lived beyond the allotted three score and ten.

During heavy winters sluice boxes were put in the street between Morgan's store and the tin shop to catch gold, which at that time was not so scarce. After heavy rains, schoolboys used to find nuggets in the road at recess.

The products of the gardens and orchards were unexcelled. The mountain air, soil and water gave agricultural products a flavor not to be found elsewhere. For where could be found finer cherries than the great Ox Hearts from Sutcliffe's in El Dorado Canyon, or from Polifka's big cherry tree, from which every boy in Michigan Bluff got his fill? The grapes and the Bartlett pears from Wills' ranch, the blackberries from Mark Beeman's, and the Winesap apples from many orchards were fit for the gods. And in Volcano Canyon grew wonderful wild plums and hickory nuts and thimble berries.

When snow fell to the depth of ten feet and shut the town in, the people were not greatly inconvenienced. Provisions and wood were always provided before snow fell. It was the boyish delight of the writer to watch the janitor at the Phoenix Hotel throw four-foot sticks of spruce wood into the massive heating stove. Men brought the mail daily from Forest Hill on snow shoes. Horses wearing snow shoes replenished supplies. More than one man, attempting to make a trip on snow shoes, died in the snow, his tracks showing his bewilderment before he lay down.

The sports of these virile people required sturdy strength. They enjoyed the snow. They snowballed each other without mercy, and woe betide the person who refused to join in the sport. The hills abounded with deer, and every man hunted them with his .44 Winchester. Little Oak, El Dorado Hill, Cod Fish Point and Dead Horse were favorite hunting grounds. The dances at Phoenix Hotel never stopped at 12 o'clock. The floor and the walls of the dance hall swayed, and not till daybreak did old man Gribben's orchestra cease. Every other dance was a quadrille. And no ball could be held without a chicken or an oyster supper, price $2.50 per couple.

There were peculiar characters among them. Everyone remembers Mike Corcoran, who used to sing over and over, "O why do you tarry and why do you stay, way up in Long Canyon where the diggings don't pay?" There was Gus Harnet, who dug his own grave and gave orders to have his body wrapped in a blanket and buried without ceremony. Everyone remembers good old Duncan Ferguson of Deadwood, Andy Houk of Last Chance and Bob Hill of Birds' Valley. Not a few of the younger generation grew to manhood and womanhood, never having seen a railroad train.

One peculiarity worth mentioning was the division of the people into two factions according to their preferences for doctors. There were the Dr. Mardis adherents and the Dr. Burleigh supporters, neither side of which could see any good in the other's doctor. At times they came to blows when arguing the merits of their respective doctors. However, those who knew these rugged people understood their idiosyncrasies. And this is interesting to the sociologist—they were sound at heart. They helped their fellows when misfortune came. When a house burned the neighbors collected money quickly for the owner, which enabled him to build again.

The Chinese population was large, and among them were Chinamen like Ah Bing, Johnnie Sing and Ah Shoe, for whom the people had real affection, and who were always remembered.

In communities like this tragic events were common. We will pass over shooting and stabbing affairs. With caves and sliding hydraulic banks claiming victims, with accidents at the Big Gun and the Turkey Hill diggings, the lives of the miners were always in danger. Premature blasts blinded or killed. Not a few hunters were mistaken for deer and shot. Stage robberies and sluice box robberies were not uncommon, and more than once the Express box was stolen. Everyone remembers the shrieking forest fire on Gorman's Hill.

However, there was the brighter side to life in Michigan Bluff. There were those whose efforts stood for ethical and spiritual improvement, Mrs. Bowen and Mrs. Van Eman, God bless them, kept alive reverence for the church. They were leaders in Sunday school, in bands of hope, in Christmas festivities and social life.

Surely the old town has changed. Now the inhabitants do not number a score. Buildings have fallen to decay, sidewalks are gone, and almost everything is in ruins. Yet there are a few who hunt for gold, and no doubt gold is there. It is sad for one who spent his boyhood there to go back after twenty-five years and to see this desolation. The younger folk have left, the older ones sleep in the cemetery under the pines.

BET IT WAS FROM THIS PAPER

"Was the new comedy interesting?"
"Naw! The only laugh I got the entire evening was from a joke printed in the program."—Boston Transcript.

A gallon of honey generally weighs between 11½ and 12 pounds.

HINTS FROM HOUSEKEEPERS

Two Good Jerky Recipes

Place amount of jerky wanted in bake pan, dampen with water, place in oven and partly cook, then take out jerky and pound with hammer on a block until it can be easily shredded. Take fry pan and melt 2 large tablespoons lard, put in 1 large onion sliced fine and 1 clove garlic and fry. Then add enough flour to take up lard, then add water and stir until it makes thick gravy, add tomatoes as many as desired to make the gravy red, salt and pepper to taste. Then add pounded jerky and let cook slowly about 20 to 30 minutes.

II

Pound and shred jerky as directed in first recipe, place ten or twelve large dry red chillies in kettle, cover with water and boil until soft, then pour out and put in about a quart cold water and squeeze chillies until all meat is from skin, then strain through fine sieve. Place fry pan on stove and melt 2 large tablespoons lard, slice 1 large onion, garlic if desired, and fry until brown. Add enough flour to take up lard, then add the strained chillie juice. If you don't have enough chili to make medium gravy add more water, salt and pepper, then put in shredded jerky and cook slowly for 20 minutes.

If these recipes will help the Cultivator or any of the readers, I am glad to tell them. My husband has been a subscriber for the Cultivator for some time and we both enjoy reading it. Along about Christmas I would like to send you a good pudding recipe, one I made myself and use often and know it is good.—Mrs. E. A. Goodchild, Sisquoc.

RUGS AND RUG MAKING

There are three very good reasons for discarding carpets and using rugs: they are not as expensive as carpets; they are more easily cleaned; they wear longer because they are loose from the floor. But the main reason is to promote health.

There is no better way to utilize worn out garments and scraps of all kinds than to fashion them into pretty and serviceable rugs. Anyone can make braided rugs and they are very neat and durable. The long or square rugs are the easiest to make. For a long rug, take five strands, cut according to thickness of cloth, and leave three or four inches at the end before commencing to braid. Fasten firmly, then braid over and under, first on one side and then on the other, and braid closely. When the braid is the length you want the rug to be when finished, leave four inches of the strands as at the beginning to make the fringe, which should be cut into fine fringe when the rug is finished. The rug can be made as wide as wanted by sewing the braided strands together. The finished rug should be sewed to a stout foundation to make it stronger.

The woven rugs seem more popular than any other, and cutting and sewing the pieces makes pleasant work for leisure hours.

Rag rugs may be washed like any other heavy material, and washable rugs and washable floors are essential to good health. Both large and small rugs can be wonderfully freshened by first sweeping very thoroughly and then going over them with cloth wrung frequently out of a light suds made with dissolved borax soap chips. If very soiled they should be tacked to a clean floor and scrubbed with a small brush dipped in a stronger suds made with the soap chips, then rinsed quickly.

After sickness in the family it is always advisable to wash the floor covering, and this suds not only cleans well but is a fine disinfectant. Rugs of any color or quality can be cleaned with this suds without injury. Shake rugs by holding them by the middle part, never by the ends, and if very dusty hang them on the line and beat lightly with a small whip or rattan rug beater. Sew strips of buckram along the edges of rugs which have a tendency to curl up.

A large rug will last twice as long and be much easier to walk on if the floor is padded a quarter of an inch thick with old newspapers before putting down the rug.—A. M. H.

CAN'T PROVE IT

Yeast—It is said if the heat and muscular effort expended by the average man in a day could be converted into electrical energy it would be sufficient to run a sewing machine motor for 100 hours.

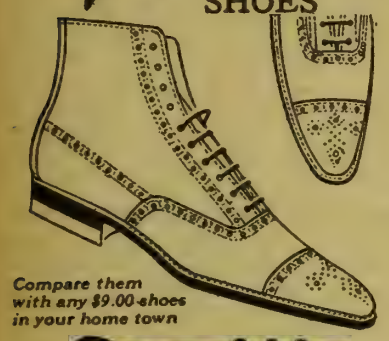
Crimsonbeak—Then why in thunder can't the average man crank a flivver more speedily?

WISDOM IN PARAGRAPHS

You can buy four Russian rubles for a cent, but nobody who has any cents will do it.—Peoria Transcript.

He is happy whose circumstances suit his temper; but he is more excellent who can suit his temper to any circumstances.—Hare.

$4.68 On Arrival for these Genuine WERNER SHOES

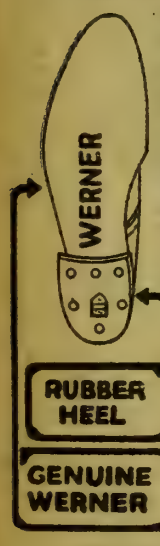


Compare them with any $9.00 shoes in your home town

Send No Money

Simply fill out and mail the coupon at the bottom of this ad. We will deliver the shoes immediately. When you receive them hand $4.68 to the postman. That's all. He will forward the money to us. Try the shoes on, compare them with any $9.00 shoes in your town. If you are not satisfied in every way—with the fit, the style, the workmanship, the finish, the material, return them to us, at our expense. We will refund your money in full at once, without question. After 78 years of "Werner" shoe merchandising we cannot afford to have one dissatisfied customer.

Stylish City Shoes
FOR YOUNG MEN



Exactly the same style that well-dressed men are wearing in San Francisco and New York right now. Dark Tan Calfskin finished. Artistically perforated in latest design. Plump Sole leather Outersole. Solid Sole leather Innersole. Strongly stitched. Felt-padded Tongues. Rubber Heels already attached. (An additional saving of 65c.) In every respect a quality shoe. Sizes 5 to 11. Widths B, C, D and E. Be sure to state the size you wear. If possible copy all the numbers and letters in the lining of your best fitting old shoes. Remember—send no money. We pay mailing cost.

Mail this coupon — NOW

FRANK WERNER CO.,
874 Market Street, San Francisco, Cal.
Department A

Send one pair of genuine Werner shoes as described. I will deposit $4.68 with postman on arrival, and examine them. If not satisfied, I will return the shoes and you will refund my money.

(Name) .....

(Street and Number, P. O. Box., or R. F. D.) .....

(Size wanted, or size of your best fitting old shoes) .....

R-A

Underwear
For Women and Children

Costs no more than ordinary underwear, although it wears two or three seasons if properly washed.

Comfortable fullness at bust and hips, a special seat which stays closed, seams which refuse to rip and the finest of long-wear cotton, are some of the features.

R. A. Underwear is warm and comfortable, and is especially adapted for the farmer's wife and children.

Ask to see the 6 Points of Excellence. The salesgirl at the counter knows.

Unions and separate garments for women and children. Heavy and medium weight. Ask your dealer.

J. C. ROULETTE & SONS
HAGERSTOWN, MD.
Manufacturers of R. A. Underwear.

Keeps your tractor engine FIT FOR SERVICE

A grade for each type of engine

The Standard Oil ZEROLENE For Motor Cars

STANDARD OIL COMPANY
(CALIFORNIA)

CITRUS TREES

Order your One and Two Year Old ORANGE, LEMON and GRAPEFRUIT Budded Stock from the

YAMAMOTO CITRUS NURSERY
ESTABLISHED 15 YEARS
Selected Buds From Fruit Growers Supply Co.
Florida Sour Seed Bed Stock at Big Reductions
Trees, delivered by truck, and planted by us under contract, are Guaranteed.
Two Year Old Sour Roots and One Year Old from Bud. A-1 Trees, Strong, Big Stock. Ranch—Huntington Drive, San Marino, Cal.
Phone, Alhambra 731-W. Mail Address, R. F. D. 1, Box 666, San Gabriel, Cal.

Flowering Bulbs **Flowering Bulbs**

Hyacinths, Narcissus, Jonquils, Daffodils, Tulips, Spanish and Dutch Iris, Oxalis, Ixias, Sparaxis, Freesias, Amaryllis, Watsonias, Ranunculus for winter and spring flowers. Ask for Bulb Catalog. Mailed on request.
Headquarters for California Wild Flower Seeds

Theodore Payne, 345 South Main St., Los Angeles

WHALEY SALE A BARGAIN EVENT

The dispersal of the Eldorado Holstein herd owned by Alex Whaley of Tulare proved to be one of the bargain events of the year. Fifty-three head of exceptionally well bred cattle were sold for an average of $268. At such a level of prices buyers were able to add to their herds breeding material that cannot fail to prove highly attractive investments.

R. C. Sturgeon of Tulare was the lucky buyer of the great young bull, King Tola Korndyke Pontiac, a son of the popular King Korndyke Pontiac 20th and out of the well known cow, K. P. Tola, a 36 pound daughter of King of the Pontiacs. The price paid was $1,900, which was also the top of the sale.

The females sold at a fairly uniform and distinctly conservative level. The top female was two year old heifer, Eldorado Winifred Aaggie, that went to B. F. Longan of Tulare for $650. W. J. Higdon of Tulare paid $550 for Jeanie Veeman of Sunnyside. M. P. Christensen of Norwalk, Sargent Bros. of Tulare, F. M. Helm of Fresno and Walter Packard of Delhi competed for the more attractive lots.

A feature of this sale, as well as the other two of the same week, was the way buyers shied at the young things. It has been a long time since a man could pick up well bred heifers at prices that will show as great appreciation. Men who have feed should find this fall a rare time to select young stuff to grow out.

A representative list of sales appears below:

BULLS

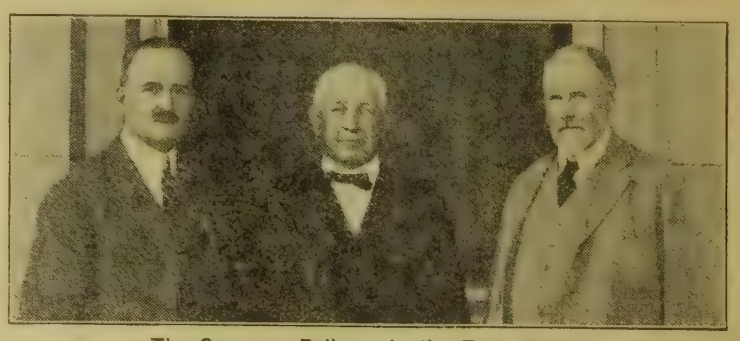
1, King Tola Korndyke Pontiac, April 1920; R. C. Sturgeon, Tulare, $1,900.

FEMALES

3, Melba Hengerveld, July 1911, 30.37 lbs.; Robt. Curtis & Son, Exeter, $500.
4, Jeanie Veeman of Sunnyside, Feb. 1917; W. J. Higdon, Tulare, $550.
5, Eldorado Veeman Segis, Aug. 1919; M. P. Christensen, Norwalk, $510.
6, Eldorado Winifred Aaggie, Sept. 1919; B. F. Longan, Tulare, $650.
7, Rag Apple Alcartra 2d, Feb. 1919; Sargent Bros., Tulare, $250.
8, Eldorado Yama Lass, Sept. 1919; M. P. Christensen, $465.
11, Unnamed, Nov. 1920; M. P. Christensen, $160.
12, Eldorado Zampa Aaggie, April 1920; M. Elma Foster, Tulare, $300.
14, Eldorado May, May 1919; F. M. Helm, Fresno, $440.
15, Eldorado Maybelle, May 1919; F. M. Helm, $500.
16, Eldorado Queen of Tulare, March 1920; W. B. Naugle, Santa Paula, $285.
17, Eldorado Queen Acme, March 1919; Sargent Bros., $260.
18, Eldorado Queen Acme De Kol, Jan. 1920; Sargent Bros., $250.
20, Unnamed, Oct. 1920; Sargent Bros., $350.
22, Miss Parthenia Pietertje De Kol, Jan. 1919; J. L. Sebastian, Wasco, $390.
23, Eldorado Aaggie Mink, Aug. 1919; Sargent Bros., $250.
24, Eldorado Ruby Acme, Feb. 1919; Walter Packard,, Delhi, $310.
25, Eldorado Juliana, Feb. 1919; M. P. Christensen, $360.
26, Eldorado Burke Ornot, Nov. 1917, 20.21 lbs.; Harold Smith, Tulare, $150.
27, Eldorado Ruby Burke, Jan. 1917, 22.82 lbs.; H. S. Ball, Tulare, $425.
28, Queen of Tulare, Feb. 1917; Walter Packard, $370.
29, Eldorado Violet Maid, Dec. 1916; G. S. Vogle, Visalia, $250.
30, Eldorado Thelma Burke, Feb. 1918; Harold Smith, $150.
31, Eldorado Zampa, Dec. 1917; R. R. Ross, Tulare, $180.
33, Eldorado Parthenia, Feb. 1918; W. B. Naugle, $225.
34, Eldorado Lady Burke Alcartra, Feb. 1918; H. G. Ball, $250.
36, Eldorado Odette, Oct. 1917; J. A. Hoffman, Tulare, $260.
37, Eldorado Daisy Burke, June 1917; Walter Packard, $315.
38, Parthenea Pietertje Artis De Kol, Jan. 1916, 22.62 lbs.; H. K. Dickson, Kern Co. High School, Bakersfield, $425.
39, Vetta Change, May 1916; Walter Packard, $255.
40, Patricia Segis De Kol, Aug. 1919; W. B. Naugle, $240.
42, Unnamed heifer, dau. of 39; Sargent Bros., $200.
43, Eldorado Queen, Oct. 1916; Walter Packard, $280.

Champions at California State Fair 1921

At the left of the photo is junior champion heifer, Juliana Dichter Fobes of Rock, and at the right is grand champion bull, Dichter Spofford Korndyke Lad 5th, property of George Junior Republic, Chino.



The Governor Believes in the Farm Bureau

Governor Stephens has just joined the Sacramento County farm bureau. This makes him a member of the state federation. The above photograph was taken at the time of his signing. At the governor's right is Dr. W. H. Walker, president of the state federation, and at his left is Fred H. Harvey, president of the Sacramento County farm bureau and member of the National Dairy Committee of Eleven.

Asked for an expression of his opinion of California's farm bureaus, Governor Stephens said: "Realizing that agriculture is the basic industry of California and that every constructive movement for its betterment is a step toward the development of the entire state, I note with welcoming relief the constructive and conservative force of a rural awakening reaching from the school house center to the county, state and nation, through such organizations as the California Farm Bureau Federation and the American Farm Bureau Federation."

CURTIS HOLSTEINS AVERAGE $228

Robt. T. Curtis & Son, Exeter, held their first public sale of registered Holsteins at Tulare, October 5, and made an average of $228 on 45 head.

The top of $1,125 was made with the 34 pound cow, Coloma Beauty Butter Maid, at which price she became the property of H. C. Ball of Tulare, who is establishing a high class herd. Her August, 1920, heifer calf by the $12,000 King Korndyke Pontiac 20th was purchased by Sargent Brothers of Tulare for $875. Sargent Brothers, who were among the prominent buyers, are extensive lemon growers and are making their plans to establish a large

Keep Your Livestock and Poultry Healthy
CRESY-LOL—The Standardized Disinfectant
Kills Lice, Mites, Fleas. For Scratches, Wounds, Scab, Ordinary Mange, Etc.
Mfg. by
ARTHUR R MAAS, CHEMIST
308 E. 8th Street Los Angeles, Cal.

THE HOLSTEIN HERD WITH A FUTURE

Ten of Our 1921 State Fair Winners

Our Senior Herd Sire **DICHTER SPOFFORD KORNDYKE LAD 5th H. B. No. 201546** again proved his right to the title of GRAND CHAMPION Holstein Bull of California by carrying off the Senior and Grand Champion honors at the 1921 California State Fair. This Great Bull also showed his remarkable PREPOTENCY by siring a large proportion of the 1921 State Fair winners.

These included:

JUNIOR CHAMPION HEIFER
FIRST PRIZE JUNIOR YEARLING HEIFER
FIRST PRIZE SENIOR CALF HEIFER
FIRST PRIZE TWO YEAR OLD HEIFER
THIRD PRIZE TWO YEAR OLD HEIFER
FIFTH JUNIOR HEIFER CALF
FIRST JUNIOR YEARLING BULL
FIRST SENIOR BULL CALF
FIRST GET OF SIRE
AND HE SIRED THE FIRST PRODUCE OF DAM.

THE FIRST TWO HEIFERS SIRED BY DICHTER SPOFFORD KORNDYKE LAD 5th to freshen show an average test of 4 per cent and are going a 20,000 lb. milk clip.

We are offering for sale some wonderful yearling bulls (including State Fair winners) sired by this great transmitting sire AND OUT OF HIGH YEARLY PRODUCING COWS.

Now is the Time to Introduce This Blood. It Will Cost You More When Dichter's Daughters Have Completed Their Yearly Records

California Junior Republic

(A Farm School for Boys)

R. A. Condee, Supt. of Agriculture; Reni. Brulleau, Herdsman. CHINO, SAN BERNARDINO CO., CAL.

Warranted to Give Satisfaction.

Gombault's Caustic Balsam

Has Imitators But No Competitors

A Safe, Speedy and Positive Remedy for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, Skin Diseases, Parasites and Thrush, and Lameness from Spavin, Ringbone and other Bony Tumors.

Removes Bunches from Horses or Cattle.

For Human Use Caustic Balsam has no equal as a Liniment and Counter-irritant for Inflamatory and Muscular Rheumatism, Sore Throat and Chest Colds, Growths and Stiff Joints.

A Perfect Antiseptic—Soothing and Healing if applied immediately to Burns, Bruises or Cuts.

Every bottle will give satisfaction. Sold by Druggists or sent by parcel post on receipt of price $1.50 per bottle. Send for descriptive circulars and testimonials.

The Lawrence-Williams Co., Cleveland, O.

herd. Walter Packard, acting for the settlers of the state colony at Delhi, selected a nice lot of foundation material. M. P. Christensen of Norwalk made several careful purchases.

The sale was managed by the California Breeders Sales & Pedigree Company. Ben A. Rhoades was the auctioneer. Col. Bell was in the ring.

BULLS

5, Unnamed son of Baroness Pon. D. K. Belle, Mar. 1921; W. J. Higdon, $375.

FEMALES

1, Coloma Beauty Butter Maid, Feb. 1915, 34.72 lbs.; H. G. Ball, Tulare. $1,125.
2, Crag View Korndyke Coloma, Aug. 1920; Sargent Bros., Tulare, $875.
3, Crag View Queen Korndyke Hotaling, Jan. 1921; Sargent Bros., $385.
4, Crag View Queen Korndyke Colantha, Oct. 1920; W. J. Higdon, Tulare, $375.
6, Eldorado Mary Alcartra, Dec. 1918; Walter Packard, Delhi, $315.
7, S. V. K. P. Clarice of Sunnyside, Feb. 1918; Susie L. Bell, Tulare, $150.
9, Pride Johanna Pontiac, Feb. 1917; Walter Packard, $265.
10, Jolie Queen of Pleasantdale, Aug. 1916; M. P. Christensen, Norwalk, $240.
11, Lady Hatres Beauty 3d, Mar. 1917; L. Dickover, Delhi, $370.
13, Mina De Kol of Pleasantdale, Jan. 1916; Walter Packard, $265.
14, Crag View Pontiac Mina De Kol, June 1920; R. C. Sturgeon, Tulare, $175.
15, Segis Pontiac Albrice, April 1916; Sargent Bros., $190.
16, Charlotte Mercedes McKinley, Feb. 1917; F. W. Bishop, Fresno, $185.
22, Artis Odette Burke De Kol, Sept. 1916; Jessie A. Guerin, Visalia, $340.
24, Diana Hengerveld De Kol Burke, Sept. 1919; Walter Packard, $150.
25, Diana Dawn Hengerveld, Jan. 1918; Walter Packard, $250.
26, Infelice De Kol Burke, June 1919; Walter Packard, $200.
27, Iona Merci Lass, Dec. 1918; R. F. Guerin, Visalia, $205.
28, La Mona Hengerveld Best, April 1915; M. P. Christensen, $300.
29, Iona Ripple of Sunnyside, June 1913; Jessie A. Guerin, $210.
34, Aaggie Key Pontiac Niko, May 1919; J. M. Blenkeron, Fresno, $200.
36, Baby De Kol Pontiac Niko, May 1920; Sargent Bros., $245.
38, Beauty De Kol Niko Pontiac, Aug. 1919; M. P. Christensen, $300.
39, Aaggie Pontiac De Kol Niko, April 1920; P. F. Roche, Tulare, $165.
41, Lucella Niko Pontiac Pietertje, Aug. 1919; Jessie A. Guerin, $260.

WALKER OPENS FALL SALES SEASON

The first sale of registered Holsteins of the fall season was held by S. O. Walker of Visalia. Fifty-four head, including many young things, none of which sold subject to a tuberculin test, averaged $170. While that figure represented a low appraisal, it can be taken as an indication of the attitude California breeders are manifesting toward cattle that have not been tested and makes plain that breeders who prefer to sell without testing their cattle can expect to be penalized.

J. R. Crawford of Burell was one of the heaviest buyers and selected many bargains. He was particularly fortunate in getting the aged bull, King of the Black and Whites, for $510. The same buyer topped the females when he secured the good cow, Lottie Walker Spofford 3d, for $350.

C. C. Ellis of Exeter and J. S. Allen of Visalia were also extensive buyers.

The sale was managed by the California Breeders Sales and Pedigree Company and Col. Ben A. Rhoades was the auctioneer.

A list of representative sales follows.

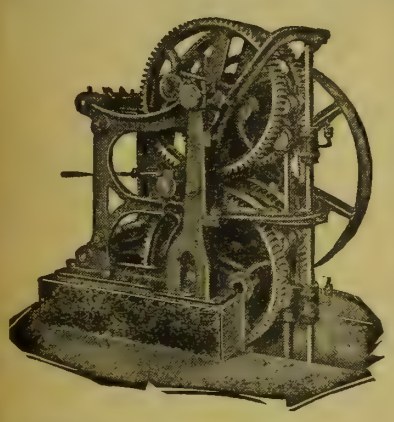
BULLS

1, King of the Black and Whites, Feb. 1911; J. R. Crawford, Burrell, $510.

FEMALES

4, Lottie Walker Spofford 3d, 25.41 lbs., Nov. 1913; J. R. Crawford, $350.
7, Manteca De Kol Tehee Korndyke, Oct. 1919; C. C. Ellis, Exeter, $175.
8, Manteca Tehee De Kol Korndyke, Oct. 1919; J. S. Allen, Visalia, $180.
9, Manteca Korndyke Walker, Oct. 1918; C. C. Ellis, $200.
12, Manteca Walker Erma Netherland, April 1919; J. S. Allen, $210.
13, Manteca Lady Culvert Clothilde, Feb. 1919; J. S. Allen, $200.
14, Manteca Marion Walker Segis, July 1919; E. J. Moody, Visalia, $200.
15, Manteca Colantha Walker Korndyke, May 1918; Carl Youngman, Visalia, $310.
16, Manteca Clothilde Veeman, Oct. 1918; J. R. Crawford, $350.
17, Manteca Piebe Clothilde, Jan 1919; C. C. Ellis, $175.
18, Manteca Marion Spotfoot, April 1919; J. R. Crawford, $210.
19, Manteca Segis Belle Colantha, April 1919; C. G. Ferguson, Visalia, $185.
20, Manteca Uniform Colantha, May 1919; E. J. Moody, $200.
21, Manteca Artis De Kol Colantha, June 1919; C. Redick, $175.
22, Manteca Riverview Colantha, June 1919; C. S. Ferguson, $230.
25, Manteca Duanna Pietertje, June 1918; J. R. Crawford, $190.
35, Manteca Clothilde Witkop, Nov. 1918; C. Redick, $200.
36, Manteca Colantha Juliana, April 1919; J. R. Crawford, $190.
37, Belle Segis Colantha, Feb. 1913, 18.23 lbs.; C. C. Ellis, $200.
38, Gelsche Segis 2d, Jan. 1911, 24.01 lbs.; J. R. Crawford, $250.

(Continued on Page 406.)



THE POMONA

Duplex Plunger Deep Well Pumps

are solving the Pumping problems for many users during the period of low water levels. They will lift the water to the surface, and, if desired, deliver it to high elevations above ground and at lower power cost than any other system of Pumping water.

Pomona Pump can be seen in operation at the coming Riverside Fair. Look for our exhibit.

Pomona Manufacturing Co

POMONA, CAL.

Manufacturers of the

POMONA Irrigation Gates and Valves

OTTAWA

Fastest cutting Log Saw. 810 strokes a minute. Light weight. Most powerful. Easy to move from cut to cut and log to log. Friction clutch controls saw blade while motor runs. Saws any size log into any lengths. When not sawing use as portable engine for pumping, grinding, other power jobs. *Read this:* "My Log Saw is a marvel. All the neighbors hardly realize it can do the work of 10 men with cross cut saws." —D. Kissoy, Farmersville, O.

LOG SAW Tree Saw falls trees; Limb Saw cuts branches. Other Saw Rigs and farm and shop engines from 1½ to 22 - H. P. Log Saws shipped promptly from 1 of 9 Warehouses nearest you. 30-Day Trial. Cash or Easy payments. WRITE FOR FREE BOOK TODAY.

Now Selling at New Low Price. LIBERAL 10-YEAR GUARANTEE.

Pat. App. for.

2749-A Wood St. OTTAWA MFG. CO., Ottawa, Kansas.

ONE GALLON **THERMO JUG** $4.00

Every farmer, hunter, motorist and household needs a Thermo Jug that keeps liquids piping hot or icy cold. Why pay $5 to $10 for a pint or quart bottle when this gallon Thermo Jug costs only $4.00? See your dealer or order direct. Postage paid in the United States. Also made in 2 and 5 gallon size. Send for free literature.

LORENZEN BROS. MFG. CO. Dept. 39 Marshalltown, Iowa

Come to the
PACIFIC
INTERNATIONAL
LIVE STOCK EXPOSITION
PORTLAND
Nov. 5-12
Brilliant Assemblage of 3000 pure bred animals.
Spectacular Night Horse Shows.
Western Dairy Products Show.
Immense Poultry and Rabbit Show.
Auction sales of dairy and beef breeds.
Fun and interest for everyone.
Largest exposition of its kind in America —10 acres under one roof!
Come and bring the family. Stay from the opening day to the Grand Parade of Champions Saturday night.
Fare and a half on all railroads
Remember the Dates—
November 5-12
Write for descriptive folder
211 Northwestern Bank Bldg.
Portland, Oregon

MAKE YOUR PLANS NOW
TO VISIT THE

California Livestock and Horse Show

San Francisco, October 22nd to 30th

Four acres under canvas will house the greatest stock show ever held in this city and a show that will rate, judging by the entries to date, with the best livestock shows of the West.

Some of the finest American herds of Shorthorns, Herefords and Aberdeen-Angus have been entered, together with Holsteins, Jerseys, Guernseys, Ayrshires, several breeds of draft horses and sheep, poultry and pet stock.

The Horse Show will be held nightly. For this there have been entered some of the finest animals in the West, including drivers, saddle, hunters, jumpers, polo and other ponies.

Upon the success of this show depends the establishment of a permanent livestock show at San Francisco. Every livestock breeder should do his share to make the show a success.

REDUCED PASSENGER RATES ON ALL RAILROADS

California National Livestock Association

C. N. Hawkins President — John A. Bunting, Secretary
C. R. Thomas, General Manager

Santa Anita Rancho

Pure Bred Registered Percheron, Arabian and Thoroughbred Horses, Holstein-Friesian Cattle, Southdown Sheep, Big Type Poland China Swine, Mammoth Jacks and Jennets.
Young Breeding Stock of All Kinds
Every Animal Guaranteed

Santa Anita Rancho and Anoakia Breeding Farm

SANTA ANITA — Anita M. Baldwin, Owner — CALIFORNIA

GUASTI BERKSHIRES

We are breeding some awfully good Berkshires and are having very good success in the shows this fall.
We can supply your demand for

Big Modern Type Berkshires

in any class at reasonable prices.
Inquire about our bred gilts and young boars.

ITALIAN VINEYARD COMPANY

Alex. M. Wilson, Supt. — Guasti, Cal.

P. S.—Farmers and pig club boys given special attention.

First Prize Get of Sire, 1921 California State Fair. Sired by Beau Blanchard 76th.

NEVADA HEREFORD RANCH

Owned by J. H. Cazier & Sons Co., Wells, Nev.

WILL SELL AT PUBLIC AUCTION

80—Real Foundation Herefords—80

State Fair Grounds, Sacramento, Cal.

Tuesday, November 1, at 10 A.M.

This excellent offering is without question the best large group that has ever left Nevada Hereford Ranch, a herd that has forged ahead to the foremost ranks of American Hereford herds solely upon the quality of its cattle and the constructive policies of its owners.

Over 70 females and 5 or more young bulls of herd heading calibre will make up the sale list, presenting a most attractive selection in the Harris Standard 2nd—Beau Blanchard 76th combination that is proving so successful in this herd.

Young cattle of this breeding were the outstanding feature of the 1921 California State Fair classes, where they were consistently placed above winners in some of the best Middle West shows, proving conclusively that this herd is producing a class of cattle able to hold their own in any company.

Attend this sale if you want to build upon a real foundation, or if you wish to strengthen an already established herd.

This Is a Federal Accredited Herd

LIBERAL TERMS OF SALE: Responsible parties may arrange for credit before sale, with the sale managers, on the basis of one-half cash, balance in six months, with approved note bearing eight per cent interest.

— CATALOG OF SALE FREE ON REQUEST —

HULL, Auctioneer
BUNTING, in the Ring

Managed by
California Breeders Sales and Pedigree Company
C. L. Hughes, Sales Manager, Sacramento, Cal.

DISPERSAL SALE

40 Registered Holsteins
20 Grade Holstein Cows and Heifers

Dr. F. H. Shanks & Sons Herd, Susanville, Cal.

Saturday, October 29
at 10 A.M.

Because two of his sons have taken responsible positions in other lines of agriculture, Dr. Shanks has decided upon a complete dispersal of his high-class dairy herd containing the animals noted above.

The herd contains a splendid lot of heavy producing cows of good breeding, and will be presented on sale day in good physical condition. An exceptional opportunity for buyers in the northeastern counties and in Nevada to buy good Holsteins near home.

EVERY REGISTERED ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OLD TUBERCULIN TESTED AND SOLD SUBJECT TO RETEST BY THE BUYER.

TERMS OF SALE: Responsible parties may arrange for credit on the basis of one-third cash, balance in 3, 6 and 9 months, with approved notes bearing eight per cent interest, if arrangements for credit are made before sale with the sale managers.

CATALOG OF SALE FREE ON REQUEST

Auctioneer:
Col. Ben. A. Rhoades
Los Angeles

Managed by
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

Blackleg

MAY BE PREVENTED BY USING PARKE, DAVIS & CO.'S SCIENTIFICALLY PREPARED

Blackleg Vaccines

BLACKLEG VACCINE (BLACKLEGOIDS)

THE OLD RELIABLE BLACKLEG VACCINE IN PILL FORM

BLACKLEG AGGRESSIN

(GERM-FREE BLACKLEG VACCINE)
A NATURAL AGGRESSIN

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(GERM-FREE BLACKLEG VACCINE)
AN AGGRESSIN MADE FROM CULTURES.

Write for free instructive booklet on Blackleg Prevention.

ANIMAL INDUSTRY DEPARTMENT OF

Parke, Davis & Co.

DETROIT, MICH.

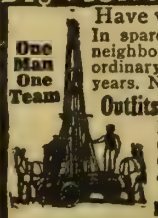
MR. FARMER:—

You are contemplating the purchase of a service bull next year. Why not save 50 per cent of the purchase price by buying a registered Holstein bull calf now. Pay for him next year when he is ready for service.

Sons of SIR VEEMAN KORNDYKE PONTIAC, who has 27 A. R. O. daughters, and of BURR WALKER SADIE VALE, whose seven nearest dams average 29 lbs. of butter in 7 days, included in this offer. Call or write at once.

BURR FARM 26th and Downey Road, Los Angeles
RFD 2 Box 120

Big Money Boring Wells



Have water on your own farm. In spare time make wells for your neighbors. It means $1000 extra in ordinary years, double that in dry years. No risk—no experience needed.

Outfits for Getting Water Anywhere

Earth augers, rock drills and combined machines. Engine or horse power. *Write for easy terms and free catalog.*

LISTER MFG. COMPANY
Box 716 Clarinda, Iowa

ENCOURAGEMENT FOR PRODUCERS

By A. L. Spellmeyer

CATTLE seem on a firmer level than for many months. Sales are claimed at advanced prices, and finance in unlimited millions has placed a solid support to the livestock industry.

Cattle have been hit hard by drouths as well as low market prices, and a shortage appears locally as well as in the entire U. S. A. in beef production. Drouths have given place to good grass and every prospect for a fine year in California. Now that money is available through the war finance corporation we may expect to see cattle bring their production cost. The cheap, less than production cost, era is apparently about to pass in the cattle industry.

Apparently less than 25,000 beef steers and cows are in sight for the Los Angeles market during the next few months to fill a normal 65,000 slaughter. At this period of the year a normal beef supply obtainable from California beet tops and grass and feed yards, Imperial, Phoenix, Inyo, Nevada, Utah and Northern Arizona would be about 80,000 head.

Much of the information and cattle dope put out on the Los Angeles market is misleading, numbers obtainable are grossly exaggerated and prices of offerings made lower than fact as the killers are persisting in fighting just advances to producers.

Early storms will without question cut possible supply from Northern Arizona, Utah and Nevada, as most of the fall beef is grown in higher altitudes where early snows and blizzards will prevent range gathering and scatter cattle.

An investigation of prices paid for carcass beef and prices charged for meat by retailers, recently made by an official of the cattle association apparently justified a retail price scale ranging from 45 cents for T. bone steak to ten cents for cheaper cuts. The comparison was made on carcass beef at 12 to 14 cents. An advance of two cents was claimed in Los Angeles carcass meat price in last ten days of September. However, among certain shops a different price scale is shown for carcass beef, giving prices of ten cents for cows and 11 cents for steers charged on the 27th day of September. This would indicate that retail profits are still too large. Many Los Angeles retailers still charge 55 cents for short yearling lamb chops, and such a charge is gross profiteering.

It would appear that the rosy day for the retailer is coming to twilight. Few economic evils continue without breeding their own cure. With the abolition of food war restrictions and the laws against profiteering declared null and void, a bright dawn of a day of profiteering orgy opened for the retail trade in food. Producers were ground to a low price, far less than cost, and consumers received no benefit, as this middle margin was absorbed by retail sources.

Retail stores increased in numbers, volume of trade did not increase though labor, light, and rentals piled upon that volume. There is still a margin for great price advance to cattlemen and no advance to consumers, but the inevitable is due when the retailers are going to be squeezed between those same millstones that have ground down and mangled the cattle producers. Producers must have a just price and consumers will object to any considerable advance.

One small suburban town near Los Angeles of 5,000 people indicates present trends so plainly it is worthy of note. In the last six months the number of retail meat and grocery shops has doubled. None is making money as the overhead doubled and business volume was split in half. Price cutting for volume started and the end is that some of these stores will go under.

For the California farmer, rancher and livestock man, every indication is that better times are right around the turn. It is true that feeds are down, but many feeds and much forage were on an inflated base. We can grant it impossible for the alfalfa rancher to sell hay under $20 per ton from $400 an acre land and high priced aqueduct water, but that $20 per ton is over double the average U. S. alfalfa price

for 1915 and 1916. The remedy is plain enough when this same expensive land and water can produce 30 to 50 tons silage corn to the acre and 20 to 40 tons of stock beets. This land must change its crop as the money is in the land, but a different method must bring it out.

The thousands of idle men flocking to the gentle California winter climate insure sufficient labor.

The small ranchers and farmers are going back into livestock. Hundreds of them are today figuring the Milking Shorthorn versus Holstein or Hereford, and hundreds of new men are today in the market for a few cattle here and there. With present grain prices the hog trade is profitable.

Continued stability will cause a rush into livestock by small California farmers, and that stability will be insured when a small part of this billion War Finance Corporation money has been distributed.

ANOTHER CALIFORNIA JERSEY COW BREAKS A RECOD

Another California record for Jerseys has been broken, this time in the junior two year old class, by Golden Duke's Pet. Her test was begun at two years and five months of age, and she produced 9380 pounds milk, 573 pounds butter fat, Class AA, and she carried a live calf 215 days during test. The following history of the raising of this heifer and the varieties of feed she has consumed has been furnished by her owner, O. S. Siegler, of Pacific Grove:

"She was fed whole milk the first week, gradually worked on to calf meal entirely at the end of the second week. She was fed calf meal and warm water until she was old enough to readily eat grain and hay. I had a box about three feet long, two feet wide, six inches deep set about two feet off the floor. In the back I kept alfalfa meal, in the front a mixture of coarse ground oats, peas, bran, corn and linseed oil meal, mixed at about the rate of two pounds oats, two pounds bran, two pounds corn, two pounds peas, one pound linseed oil meal. This was before her at all times, as was good quality of peas and oat hay. When she was four months of age she was shipped to California from Washington and was out of my care for the next year, but was in a small corral without pasture and fed dry alfalfa hay, and a slight change was made in the grain mixture, eliminating peas and substituting barley. When about a year and a half old, I brought her to Pacific Grove. She continued to get this feed until about two weeks before she freshened, when she was cut to oats, bran and oil meal in equal proportions, receiving about four pounds a day. She has never had the run of a larger corral than a quarter of an acre."

CALIFORNIA AYRSHIRE BREEDERS TO ORGANIZE

Ayrshire breeders throughout California are manifesting quite an interest in the proposed California Ayrshire Club. Preliminary plans are now being made to hold a meeting for this purpose some afternoon or evening during the California National Livestock Show to be held in San Francisco, October 22 to 30. Every breeder of Ayrshires whether he owns one purebred bull or a large herd of registered animals is invited to be present. An effort will be made to secure several reels of moving pictures showing the national sale of last year.

WHAT WOOL MEN WANT

What does the wool producing industry need most? This question was asked of the wool marketing department of the American Farm Bureau Federation by congressional joint commission of agricultural inquiry. Director C. J. Fawcett answered:

"1. Adequate financing, loans to run for not less than 30 months. 2. A more favorable attitude by the federal reserve system toward financing agricultural commodities upon warehouse receipts as collateral. 3. A federal law permitting cooperative marketing of agricultural commodities, thereby putting in practice a more economical method of distribution to consumers. 4. A tariff just to both manufacturer and consumer. 5. A Truth-in-Fabric law, benefiting both producer and consumer. 6. The dissemination of knowledge to the public as to cost of raw commodities compared with finished products."

$7.50 After 30 Days Free Trial

The Belgian Melotte Separator — with the wonderful Self-Balancing Bowl. No other like it.

30 days' free trial—then, if satisfied, only $7.50 and a few easy payments — AND — the wonderful Belgian Melotte Separator is *YOURS.*

No Money Down!

Catalog tells all—*write.*

Caution! U. S. Bulletin 201 shows that vibration of the bowl causes *cream waste!* The Melotte bowl is *self-balancing.* Positively cannot get out of balance therefore cannot vibrate. Can't remix cream with milk. *The Melotte has won 28 Grand and International Prizes.*

Catalog FREE

Write for new Melotte catalog containing full description of this wonderful cream separator and the story of M. Jules Melotte, its inventor. Don't buy *any* separator until you have found out all you can about the Melotte and details of our 15-year guarantee which is infinitely stronger than any separator guarantee. Write TODAY.

Runs so easily, bowl spins *25 minutes* after you stop cranking unless you apply brake. No other separator needs a brake. Bowl chamber is *porcelain lined.*

The Melotte Separator, *H. B. Babson, U.S. Mgr.*
Dept. 3027, 2843 W. 19th Street, Chicago, Ill.

RHOADES

Expert Livestock Auctioneers
1505 So. Main St.
Los Angeles, Cal.
Sales Pavilion
Stock Yards at
Hynes, Cal.

& WE CONDUCT SALES OF REG. DAIRY CATTLE GRADE CATTLE GEN. FARM SALES in all parts of Calif. and adjoining States. Satisfaction guaranteed. Write for dates and terms.

USE SHIRE HORSES

Breed your mares to Shire Stallions, good Shire Geldings are in demand. Get some registered Shire Mares.

Shire owners, record colts young, fees are double after one year old. Prepare Shires for fall shows, premiums are very liberal this year. For information on Shires write

W. G. Lynch, Secretary, American Shire Horse Association, Tonica, Illinois.

California Breeders

have sold more than $500,000 worth of registered cattle in our sales, under the most stringent requirements laid down by any sales organization in America. Satisfied buyers have been the rule in all our sales.

California Breeders Sales & Pedigree Company

C. L. Hughes, Sales Mgr. Sacramento, Ca

Venadera Herd

Offers some excellent young bulls ready for service. Sired by Japs Perfection Owl. Out of cows with Register of Merit records. Also a few heifer calves.

GUY H. MILLER
Route 1 - Modesto, Cal.

For Profitable Durocs

As we have sold out of bred sows and gilts, we are now offering big growthy fall pigs, either sex, at attractive prices.

D. G. Cummins & Son
Route 1 Visalia, Cal.

A King Segis Pontiac Offering

102 REGISTERED HOLSTEINS 102

SYCAMORE ACRES, Owned by Robt. N. Clapp, Nuevo, Cal.

SELLING AT

Rhoades & Rhoades Sales Pavilion, Hynes, Cal.

Friday, October 21, at 9:30 a.m.

This is without question the greatest offering of the blood of King Segis Pontiac ever made in the west, including high record cows and daughters of such cows, and a wonderful lot of individuals.

20 DAUGHTERS OF KING SEGIS PONTIAC
All young, many out of high record dams of most attractive breeding, and including a number of high class show quality.

31 DAUGHTERS OF PEARL KING SEGIS PONTIAC
Who is by King Segis Pontiac and out of a 37.51 lb. daughter of Pontiac Korndyke that milked 753.9 lbs. in 7 days, second dam a 727.03 lb. yearly record 4 year old daughter of Pearl of the Dairy's Joe De Kol.

13 DAUGHTERS OF KING PONTIAC NETHERLAND SEGIS 3D
The famous young sire formerly at the head of the Rosamaines Rancho herd. He is sired by a grandson of King Segis Pontiac and out of the twice 34 lb. cow Gerben Abbekerk Maid. His daughters in this sale are a wonderful group of young females, with records up to over 30 lbs. butter in 7 days for a 4 year old.

3 DAUGHTERS OF KING SEGIS PONTIAC CHICAGO
Who sold for the then world's record price of $20,000.00 when a calf. He is by King Segis Pontiac and out of the 40 lb. cow Johanna De Kol Van Beers.

7 DAUGHTERS OF PAUL CALAMO KORNDYKE
The great show bull that has many Grand Championships to his credit in the best shows. His daughters in this sale include the famous National Dairy Show winner Nancy Calamo Korndyke.

FOUR 30 TO 34 POUND COWS
Including the great twice 34 lb. cow Gerben Abbekerk Maid, now making a splendid strictly official yearly record in her tenth year.

If you are looking for young cattle with splendid type and rich King Segis breeding, you will find in this offering one of the choicest lots ever sold in California.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OLD TUBERCULIN TESTED BY DR. HURT, L. A. COUNTY VETERINARIAN, AND SOLD SUBJECT TO 60 DAY RETEST.

TERMS OF SALE: Responsible parties may arrange for credit with the sale managers on the basis of one-third cash, balance in three, six and nine months, with approved notes bearing eight per cent interest. Credit arrangements must be made before sale.

Catalog free on request.

Auctioneers:
RHOADES & RHOADES
Los Angeles

Managed by
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

EDGEMOOR FARM

Owned by W. H. Dupee
SANTEE, CAL.

WILL OFFER

51 REGISTERED GUERNSEYS 51

AT PUBLIC AUCTION

Rhoades & Rhoades Sale Pavilion

Hynes, California

Thursday, October 20, at 10 A.M.

THE FEMALES:

There will be 41 females in the sale, all heifers, and practically all are bred. A large number are bred to MASTERPIECE OF EDGEMOOR, one of the greatest young sires of the Guernsey breed, also some to the undefeated show bull DEANIE'S MAROSE OF APPLETREE POINT.

The offering includes granddaughters of Governor of the Chene, Spottswood Daisy Pearl, Rose of Lanwater and a considerable group sired by a double grandson of Governor of the Chene.

These choice heifers should meet with the approval of the many prospective buyers who wish a foundation of young registered Guernsey females of substantial breeding and bred to bulls of unusual merit.

THE BULLS:

The ten bulls in the sale list include a number ready for service, of desirable type and approved breeding, and should find favor with both breeders and dairymen.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OLD TUBERCULIN TESTED AND SOLD SUBJECT TO 60 DAY RETEST.

TERMS OF SALE: Cash unless arrangements for credit are made prior to sale with the sale managers, California Breeders Sales and Pedigree Co., who will extend terms of one-third cash, balance in three equal payments in 3, 6 and 9 months, to responsible parties, with approved note bearing eight per cent interest.

CATALOG OF SALE FREE ON REQUEST

PLACE OF SALE: Rhoades & Rhoades Sale Pavilion is at Hynes, south Los Angeles on Downey and Long Beach Boulevard.

Auctioneers:
RHOADES & RHOADES
Los Angeles

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

The Sixth Sale of

SHORTHORNS

Under Auspices of California Shorthorn Breeders Association
Will be held at

San Francisco, Thursday, October 27, 1921

CONSIGNORS:

Caledonia Farms	Ormondale Ranch
Blackhawk Ranch	Pacheco Cattle Company
Jack London Ranch	Straloch Farm
William Bond	T. S. Glide
Rancho San Julian	Howard Vaughn

These animals have been selected as representative, and worthy to be sold during such an important event as the California National Livestock Show.

Auctioneer: H. L. Hull, Des Moines, Iowa

The cattle market is on the upward trend.
Quality cattle pay.
Here is a good opportunity to acquire the nucleus of a pure bred herd of SHORTHORNS.
Reduced Passenger Rates on all Railroads.

For Catalog of This Sale Apply to

California Shorthorn Breeders Association

222 Sharon Building San Francisco, Calif.

Ormsbys Again Win

We exhibited at Ventura against strong competition and won

Senior and Grand Champion Cow

Junior Champion Bull

We won 9 firsts, 2 seconds and 3 thirds. We won first in all but two classes in which we were entered.

All animals but two were our own breeding

Come and get acquainted at Riverside and San Francisco.

MAXWELL FARMS

Jack Klein, Manager Hollywood, Cal.

Tosantos Walker Mead

Born December 9, 1919
Exceptional Yearly Record Backing

His five nearest dams average over 1,000 lbs. butter in a year. He is out of a wonderful daughter of Prince Gelsche Walker and Sir Aaggie Mead De Kol. He is a show bull and is priced for immediate sale.

E. D. BARRY, JR. Workman and Azusa Ave., Covina, Cal.

HOLSTEIN *Fred Hartsook* RANCH **CATTLE**

We have assembled an excellent foundation herd of females and will be glad to have breeders call. Fred Hartsook, Lankershim, California.

O.U.R. Hampshire Swine

Ortega-Underhill-Rancho

Thos. T. Dinsmore, Mgr., Santa Barbara, Cal.

GLOBE "A1" FEEDS

-Judge them on Business Principles!

FEED FOR SWINE STOCK AND POULTRY

ASK YOUR DEALER

WALKER OPENS FALL SALES

(Continued from Page 403.)

39, Sunnyslope Anna Prilly, March 1914; J. R. Crawford, $250.
40, Korndyke Witkop De Kol 2d, Jan. 1915; C. C. Ellis, $175.
41, Sunnyslope Duanna Pietertje, Dec. 1914, 22.46 lbs.; J. R. Crawford, $175.
42, Susie Fayne Segis Walker, April 1914; J. R. Crawford, $195.
44, Queen Pontiac Calypso, March 1915, 25.24 lbs.; C. C. Ellis, $200.
45, Calypso Pontiac Aaggie, Aug. 1912, 25.70 lbs.; J. R. Crawford, $200.
46, Kladre De Kol Korndyke, Nov. 1915; J. R. Crawford, $300.
48, Lorenzo Clothilde Hengerveld, Aug. 1912; C. C. Ellis, $150.
51, Lyons Vevie Segis, April 1913, 26.34 lbs.; J. R. Crawford, $250.
52, Manteca Clothilde Segis Inka, Dec. 1916; J. R. Crawford, $200.
53, Queen Pauline Signet Mechthilde, Oct. 1915; J. R. Crawford, $275.
55, Norwich Farm Pontiac Veeman, June 1915; J. S. Allen, $260.

Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins

October 21, Robt. N. Clapp, Nuevo.
November 3, A. W. Morris & Sons, Inc., Woodland.
November 9, Palo Alto Stock Farm, Palo Alto.

Herefords

October 19, W. J. Bemmerly, Woodland.
October 27, Pacific Coast Hereford Breeders' Association, California National Livestock Show, San Francisco.
November 1, J. H. Cazier and Sons, Sacramento.

Shorthorns

October 28, California Shorthorn Breeders' Association, California National Livestock Show, San Francisco.

Guernseys

October 20, Walter H. Dupee, Rhoades & Rhoades Sales Pavilion, Hynes.

Jack Klein who has represented the livestock department of the Cultivator for the last year has taken over the management of the Maxwell Farms in the San Fernando Valley. This farm boasts one of the largest and best herds of Holstein cattle in California. Mr. Klein remains with the Cultivator in the capacity of an associate livestock editor and his services will be available to our readers in the future as in the past.

California breeders of Ayrshire cattle are planning to hold a meeting during the week of the California National Livestock Show for the purpose of organizing a state association. California now has a number of very high class herds of this popular Scotch dairy breed.

W. A. Clark, Petrolia, who has been in the East purchasing Shorthorn and Hereford bulls for Humboldt County ranchmen, secured five of the first named breed from Colorado breeders. It is rather strange that some California ranchers feel it still necessary to go East to purchase range bulls when they can usually find as good or better in California herds.

The Arizona Hereford Breeders Association is planning to hold a sale of grade Herefords at Kansas City, November 12. The plan is to offer from 1,500 to 2,000 head of calves, yearlings and cows in carload lots at public action.

C. N. Hawkins of the Pacheco Cattle Company, Hollister, reports the death of their senior herd bull, Pacheco Lad 58th. Pacheco Lad 58th was sired by Truedale and had distinguished himself by siring a number of prize winners. He was the sire of the winning two year old heifer, the second prize junior yearling heifer and the second prize group in the get of sire class at the last state fair.

Judge Peter J. Shields of Sacramento, president of the California Jersey Breeders Association, has purchased 11 young females and a bull from George V. Saffaram of Missouri. Judge Shields is one of the most ardent Jersey enthusiasts of California and it is his intention to develop one of the leading herds.

Geo. Knight of the Los Angeles County Cow Testing Association, gives the following summary of his year's work: Number cows tested nine months or more, 2,217; average pounds milk, 8,772; average pounds fat, 353.4; cows making over 700 pounds fat, 4; cows making between 600 and 700 pounds fat, 22; cows making between 500 and 600 pounds fat, 103; cows making between 400 and 500 pounds fat, 360; cows making between 300 and 400 pounds fat, 794; cows making between 200 and 300 pounds fat, 934.

C. V. Castle, who has been in charge of the cow testing association work in the western office of the dairy division, has been transferred to Delhi. Mr. Castle is dairy field agent on the Delhi project, where an effort will be made to demonstrate the value of a dairy specialist in developing a dairy community.

Sales made during the past month of Polled Hereford cattle and Duroc hogs from Diablo Stock Farm, Danville: To Atkins, Kroll & Co., San Francisco, two Polled Hereford bulls, six Duroc hogs, for shipment to Guam, Philippine Islands; to Jas. Barden, Salinas City, 16 Polled Hereford bulls; to S. J. Silva, Walnut Creek, five Polled Hereford heifers; to C. E. Hoyt, Watsonville, one Polled Hereford bull, three Polled Hereford heifers; to C. Schnepfe, Dunnigan, one Polled Hereford bull, one calf,; to California Barrel Co., Arcata, one Duroc boar; to W. H. Miller, San Francisco, one Duroc boar; to S. I. Shaw, Honolulu, Hawaiian Islands, one Duroc boar.

WIPE OUT EVERY RAT AND GOPHER

Amazing New Discovery Quickly Gets Every One. Not a Poison

Don't be satisfied with trapping or poisoning just a few. Exterminate the whole bunch—old, young, big and little. Rats do millions of dollars' damage each year. They kill chickens, destroy grain, damage buildings, merchandise, and are filthy disease carriers.

A wonderful new scientific discovery called Imperial Virus now enables you to clear your place of every rat on it. The amazing feature of it is that it is not a poison and affected rodents such as Rats, Mice, Gophers, Prairie Dogs, Ground Squirrels, etc., only. It is perfectly harmless to humans, stock, poultry, pets. It can, therefore, be spread anywhere knowing it will kill only the pests you want to get. One rat affects the others and in a short time the whole colony is exterminated, root and branch. They die outside, too, hunting air and water.

YOU CAN TRY IT FREE

The manufacturers of this amazing Virus, to get is quickly established and widely used, are making a Special Guaranteed Introductory Offer of two regular, big, full sized (double strength) $1.00 bottles, for the price of one. Use one yourself and sell the other to a neighbor, thus getting yours free. They will also tell you how you can make money telling your friends about it. As this offer may not appear again, you should act at once or clip for future reference.

You need send no money; just your name and address to the Imperial Laboratories, Room 215, 2110 Grand Avenue, Kansas City, Mo., and pay the postman $1.00 and a few cents postage, when the two bottles arrive. It costs you nothing if it does not do the work, as they positively guarantee to refund your $1.00 any time after 30 days if you are not satisfied.

Montague Pipe and Steel Company

RIVETED WATER PIPE

Riveted Steel Pipe, Oil and Water Tanks, Steel Flumes, Siphons, Stacks, MONTAGUE WELL CASING.

WRITE FOR PRICES

Montague Pipe and Steel Co.

Office:
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Works: 17th and Kentucky Sts., San Francisco Phone Market 6909

Classified Liners

The direct selling method from producer to consumer, and a clearing house for over 40,000 subscribers. Weekly Liner rates: Single insertion 4½ cents per word; 45c per issue minimum charge. Cash with Order.

Mail all classified copy to Los Angeles Office.

POULTRY

Continued requests are being received by the California Cultivator for varieties of poultry not advertised in our columns. If any of you, our readers and friends, have any you wish to dispose of, send a small advertisement to this office and you will be doing our readers a service as well as yourselves.

Day Old Pullets—Here is your chance to get day old White Leghorn and Ancona chicks, guaranteed at least 90 per cent pullets. We are taking orders fast for October and November delivery. We also have R. I. Red and Barred Rock chicks but do not separate the sex. All chicks are from strictly thoroughbred laying stock and are hatched right and shipped by Special Delivery Parcel Post. Send for prices and get your orders in at once. Orange County Hatchery, Santa Ana, California.

It's no wonder so many poultry raisers make a failure of the business. Without any knowledge of raising poultry people will branch out expecting to make a success. By putting in practice the valuable contents of POULTRY FOR PROFIT, $1.00 postpaid, success is assured in the poultry business. Cultivator Publishing Company, Los Angeles, California.

White Leghorn Baby Chicks: Walter Hogan stock. We get all our eggs from one flock of over 4,000 Walter Hogan hens that have been carefully Hoganized. Our specialty is first class White Leghorn chicks that satisfy our customers. We will have chicks every week. Lyon Hatchery, Gardena, California.

White King Pigeons of fine strain. Will dispose of old breeders at $3 a pair and unmated birds at $2 a pair up to Nov. 1st. Guaranteed to be as good birds as represented. Write for catalog. Paradise Valley Poultry Ranch, National City, California.

Baby Chicks: Only a few more hatches this fall. Booking now for 1922 delivery. Order early—White Leghorns, R. I. Reds, Brown Leghorns, Barred Rocks. Write for circular. Stubbe Poultry Ranch & Hatchery, P. O. Box 67-E, Palo Alto, California.

White Leghorn Baby Chicks from heaviest laying (Hoganized) stock. Safe delivery live, vigorous chicks guaranteed. No money in advance; pay on delivery. Prices on request. Established 1898. MUST HATCH INCUBATOR CO., 438 Seventh St., Petaluma, California.

Baby Chicks from 227 egg strain of heavy winter laying S. C. White Leghorns. Book your order now for 1922 delivery of guaranteed chicks and hatching eggs. Pullets and breeding stock. Meyer Poultry Farm, Route A, Box 17-C, Modesto, California.

Baby Chicks "well hatched are half raised." Petaluma Incubators produce that kind. They have lots of "Pep." We supply chicks. Catalog free. Petaluma Electric Incubator Co., Petaluma, California.

200 Egg Strain S. C. R. I. Reds—Cockerels from hens with trapnest records of over 200 eggs in 12 months; $5.00 and $10.00 each. Also a few cockerels from Ward's prize winners at $5.00 to $25.00 each. Chester D. McCord, Galt, California.

For Sale—Barred Plymouth Rocks; prize winners; some extra fine cockerels for sale now. Eggs for hatching in season; satisfaction guaranteed. Mrs. J. W. Snodgrass, Los Olivos, California.

Barred Plymouth Rocks — "Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Vodden, Los Gatos, California.

White Leghorn Baby Chix from Petaluma's heaviest producing stock. We guarantee safe arrival. Literature on request. Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

Watch Us Grow: Fall chicks, Rhode Island Reds, B. Rocks, White and Brown Leghorns and Anconas. E. W. Ohlen, Campbell, California.

Eastman's "Bred-to-Lay" Hoganized, trapnested Barred Rocks. FALL CHICKS. Fairmead Poultry Farm, Fairmead, California.

Hudson White Leghorns: Cockerels from 200 egg hens. Official records made in five egg-laying contests. Hudson Ranch, Escondido, California.

Buff Leghorn Breeding Cockerels. Write M. E. Sayer, Neb. Ave., Caruthers, California.

Success in business is attained by experience and knowledge. The poultry business can be made to pay by following the teachings and information contained in POULTRY FOR PROFIT, $1.00 postpaid. Cultivator Publishing Company, Los Angeles, California.

MACHINERY

For Sale — Another big drop. Rebuilt windmills, tanks, pumps, cylinders. Why pay more. We make galzanized tanks, 400 gallons, $16.25; 600, $26.25; 1000, $37.25; 2000 capacity, $48.25. New irrigating pipe, 3-in., $13.50; 4-in., $17.50. Demmitt Co., office 120 N. Main, L. A. Phone 15191.

For Sale—Vertical, Centrifugal Byron Jackson Pump, No. 6, complete with 7 inch suction and 10 inch discharge. Katella Water Co., Anaheim, R. D. 4; H. E. Hunt, Sec'y.

HORTICULTURAL PRINTING

Catalogues and Booklets, office forms and correspondence stationery for the nursery, seed and florist trade; half tone cuts of many standard plants. Correspondence invited. The Kruckeberg Press, 236 Court St., Los Angeles.

FARM LAND FOR SALE

FARM RENTERS

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For Sale: Retail dairy in San Diego. 35 cows, 2 registered bulls, 4 heifers, 1 horse, 1 delivery truck, 100 chickens, barns, milkhouse, cans, bottles and everything complete. 6 acres, chicken houses, etc. This business is on a paying basis but can not handle it on account of other business. Will sell cheap on good terms—cheap rent. Address Box 243, La Jolla, California.

For Sale: 160 acres near Modesto in Stanislaus County, level with perpetual water right. Silt loam soil, especially good for grapes, trees or alfalfa. Near town and R.R., power line and school. Daily mail and cream trucks. Price $125 per acre. If sold in October, $90 per acre gets it. Terms, a bargain. Address Owner, 1316, 12th St., Modesto, California.

20 Acre Alfalfa Dairy Ranch, none better in Turlock irrigation district; also cows, hay. Harmon Berg, Hughson, California.

For Sale—595 acre improved mountain ranch; hog tight, irrigation; no exchange; particulars. R. W. Lipkeman, Box 591, Sonora, California.

Two Full Bearing fruit ranches for rent at Loomis, Cal. Address Box 465, Reno, Nevada.

For Sale — Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

CATTLE

Auction Sale — 15 registered Holstein bulls; 35 grade Holstein cows and heifers. In order to make room for his rapidly growing herd of registered Holsteins, Mr. J. R. Crawford will sell his entire herd of grade Holsteins and fifteen richly bred registered Holstein bulls, nearly all ready for service. The owner, J. R. Crawford, Burrell, Calif., is prepared to extend liberal terms to buyers who make arrangements with him before sale. Sale will begin at 10 A. M., Monday, October 17, at West Lake Stock Farm, 20 miles south and 5 miles west of Fresno; 2 miles east of Burrell; 4 miles north of Riverdale. Auctioneer, Col. Ben A. Rhoades, Los Angeles. Sale Manager, C. L. Hughes, Sacramento.

Guernseys — Grape Wild Farms—Berkshires—Young bulls, from calf age up to 16 months old, of May Rose breeding and out of A. R. cows. Bred sows and gilts, service boars and pigs of both sexes for sale. Grape Wild Farms, Escalon, California. A. B. Humphrey, Proprietor.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Berylwood Stock Farm—Breeders of registered Holstein cattle and Duroc-Jersey swine. Every cow an A. R. O. and T. B. tested. Bulls and females for sale. J. W. Snodgrass, Hueneme, California.

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Some Choice registered Holstein heifers and bulls of serviceable age for sale. J. W. Scudder, Escalon, California.

Winsor Ranch Jerseys—Bull calves with production behind them, at reasonable prices. BONITA, CALIFORNIA.

SEEDS AND PLANTS

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For Sale — Clicante-Bouchet. Malaga, Thompson Seedless and Zinfandel rooted vines. These vines are guaranteed A No. 1, true to name; certified and from clean producing vines. Chapman & Son, Modesto, California. P. O. Box 906, Phone 663.

For Sale — Early Winningstadt, Cannon Ball and Flat Dutch cabbage plants; and Kale 10c per dozen, 60c per hundred. Cauliflower 15c per dozen, 75c per hundred, postpaid. The Hopkins Nursery, 153 So. Hartwick Ave., Eagle Rock, Cal.

For Sale — Mountain Grown Strawberry Plants for fall planting. Carolina $2, Banner $1.50, Klondike and Brandywine $1.25 per hundred by mail postpaid. B. Bryan, Camp Baldy, California.

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500,000 Grape Rootings, 25 kinds. Order quick—75 per cent of wine grape rootings now sold. Box 501, Fowler, California.

Alfalfa Seed — Certified Hairy Peruvian, Smooth Peruvian, Common. Write for samples and prices. Delta Seed & Feed Co., Yuma, Arizona.

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Pedigreed Flemish Giants — No fancy prices. Maud Beeching, 1578 W. 46th St., Los Angeles.

TREES

FOR SALE — 100,000 SOUR ORANGE SEED BED STOCK; WASHINGTON NAVEL, VALENCIA LATE ORANGES AND EUREKA LEMON TREES; ALSO FUERTE, LYON, PUEBLA AND DICKEY "A" AVOCADO TREES. T. J. WALKER, FIRST NATIONAL BANK BUILDING, SAN FERNANDO, CALIFORNIA.

Nursery Stock at bargain prices. Prune 10c each; grafted walnuts $1.00 each; pears 20c each; Black caps $20.00 per 1,000; other stocks at bargain prices. Submit your want list, and send for planters list. 31 years in business. Carlton Nursery Co., Carlton, Oregon.

For Sale—Grafted walnut trees, also citrus and deciduous trees. Order now for 1922 delivery. Get my prices. Ketscher's Nursery, 1101 E. 4th Street, Santa Ana, California. Phone 572-W.

Reliable Trees and grapevines at a fair price. Write us for price list. We ship on approval. J. F. Miller & Sons, Healdsburg, Cal.

For Sale—Budded Walnut Trees, Eureka and Placentia Perfection. Mrs. John M. Koller, Puente, California.

Quality Trees — Dahlia Bulbs—Beeman tractor. Cash Nursery, Sebastopol, California.

Citrus Nurseries, Murphy Oil Company, East Whittier California. Selected stock for sale; inspection invited.

DUROC-JERSEYS

Weanling Boars and Gilts by Pathfinder Wonder (Great Wonder I Am ex an 800 lb. Pathfinder sow) for $10 each. Bred sows and gilts. Derryfield Farm, Capital National Bank Bldg., Sacramento, California.

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Greenwood Farm Durocs — Moderate prices on bred gilts and weanling boars. Select individuals. Most popular breeding. H. C. Witherow, Mgr., Live Oak, Sutter County, California.

Boyanna Big Type Durocs — Breeding stock, priced right for sale. Inquiries invited. Satisfaction guaranteed. J. Boyd Harrold, Dixon, California.

Big Type Durocs—Better Durocs at right prices. Harvey M. Berglund, Dixon, California.

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Lendorris Ranch Polands — Big type Poland Chinas of all ages for sale. The kind that makes weight quickly. Weanling boars and gilts sired by Lendorris Liberator out of Lendorris Liberty Bond sows. Now ready for delivery. W. L. Haag & Son, Hanford, California.

Big Type Poland China open and bred gilts, young and service boars and young pigs. Your letter expressing your wants will bring a quick reply. California Swine Corporation, H. A. Patten, Manager, Route 2, Box 38, Escalon, California.

Big Boned Poland Chinas—Bred gilts and young boars priced to sell at once. Young stock, either sex, for sale at all times. Bassett Bros., Hanford, California.

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Wanted—Walnuts Meats and cull walnuts. We solicit culls for cracking only, paying cash. Fred L. Mitchell & Son, 214 French St., Santa Ana, California. Phone 551-M.

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Cash Buyers want Western farms. Will deal with owners only. Write R. A. McNown, 370 Wilkinson Bldg., Omaha, Neb.

Want to Hear from owner having farm for sale; give particulars and lowest price. John J. Black, 116th Street, Chippewa Falls, Wisconsin.

We Will Buy your Calla Lily roots. If you have 100 or more, write us. Sevin-Vincent Co., 512 Washington St., San Francisco, California.

Wanted—Idle Service Men Agents. References—no experience. Cash Nursery, Sebastopol, California.

Wanted—Avocado Seed, Thompson and Malaga vines. L. A. Tuttle Nurseries, Pasadena, California.

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1-Ply $1.25; 2-Ply $1.60; 3-Ply $2.20.
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Bourbon Red Turkeys, Buff Orpingtons. The Ferris Ranch, Reservoir Street, Pomona, California.

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Avoid Law Suits by having your property lines properly surveyed and established by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

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Ratin—Exterminates rats and mice scientifically; harmless to humans, domestic animals, etc. Internationally used. Write J. V. Cloos, 2230 9th St., Berkeley, California.

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

HORSES

For Sale — Imported Percheron Stallion, good bone, fine action, excellent disposition, easy and safe to handle. Sires satisfactory colts with good dispositions. Several times grand champion. Worth $2500. Will sell for $1500, or consider trade for hay, straw, manure or heifers. J. J. Prendergast, Redlands, California.

FOR LEASE

For Lease—80 acre improved ranch, 8 miles west of Bakersfield, ½ mile from paved highway, store, school, etc. Splendid water condition, good pumping plant, all necessary buildings. W. F. Marks, owner, 1318 West Third St., Los Angeles.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

CALIFORNIA LEADS IN HOPS

(Continued from Page 393.)

The hops flowers are greenish or yellowish, and it is the flowers for which the plant is cultivated. They contain a peculiar substance, known as lupulin, which is a golden yellow powder of bitter properties. The lupulin constitutes about 5 per cent by weight of the flower, and the bitter principle about 20 per cent of the lupulin.

In California the curing of hops is done at a low, even temperature and without any fire or fumes of fire coming in contact with the hops. On the largest and most up-to-date plants air drying kilns represent the highest development of the drying process. In foreign countries practically all the hops are dried over open fires, thereby unfavorably affecting the delicate and essential properties of the output.

PRODUCERS STEAMSHIP CO.

(Continued from Page 395.)

pre-cool the fruit at once, and hold it cool in storage and on the ship until unloaded at the markets in Philadelphia, New York and Boston.

"This requires that the steamship company shall own and operate a fleet of heavy duty trucks with bodies specially constructed for this service, with covers to protect the fruit from sun and rain.

"The company will own its dock at San Pedro, with a pre-cooling and storage plant thereon large enough to hold about 200 cars of fruit ready for loading when a ship arrives. Every modern mechanical device for handling the fruit rapidly from dock to ship will be included in the equipment of the company's dock."

"A friend," said Uncle Eben, "is a man dat laughs at yoh funny stories, even if dey ain't so good; an' sympathizes wif yoh misfortunes, even if dey ain't so bad."

Humus

Humus, the element so necessary in California soils will be interestingly exhibited at the Nurserymen's Exposition by The Pacific Humus Company. Beautiful potted plants from many nurseries that have used this humus beautify the exhibit and make it one of the most attractive on the exposition grounds.

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Tells how to cull poor layers; how to get more eggs; how to save feed—all the secrets of successful Poultry Culture in this practical book, **"Dollars and Sense in the Poultry Business"**—96 pages; fully illustrated. Written by one of the World's Foremost Poultry Experts. Send at once.
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Free—Conkey's Poultry Book
80 pages chock full of information about the feeding and rearing of chicks, culling of hens, etc. Tells how to keep chickens healthy and how to make them pay. Whether a beginner or a professional, Conkey's Book is worth dollars to you. Sent for 6 cents in stamps to pay postage.
THE G. E. CONKEY CO. 8588 Broadway, Cleveland, Ohio

Egg Laying Contest for the Southland

By Jean A. Koethen

SOUTHERN CALIFORNIA is on the map at last. It must be more than ten years since the first egg laying contest was staged in the east, and it is six since first contest in California at the Panama-Pacific exposition. Contests have been held in Washington and Oregon since 1918, and in the fall of 1918 the California farm bureau egg laying contest was inaugurated at Santa Cruz. This gave such an impetus to poultry culture throughout the state that a Southern California contest was deemed not only possible but imperative. After several months of hard work by Assistant Farm Advisor Gordon a committee of local poultrymen consisting of Cornele G. Ross of Pomona, M. A. Schofield of Gardena and E. J. Houser of Fontana, assisted by Professor Dougherty and Mr. Easson of the poultry division, contest plans took shape, and on the first day of October the 576 hens to which the contest was limited settled down for their year's work.

When it was announced that entries would be limited to 50 pens of 12 hens each there were those who wondered whether there would be interest enough to fill 50 entries with the entry fee at $2 per hen, but before closing day the management was turning away birds, and on September 28, the day of the farm bureau picnic when the contest houses were first opened for inspection, every pen was full.

Southern California Egg Laying Contest
Buildings at Pomona in which an annual contest of layers began on Saturday, October 1. This contest will continue for 12 months and will be conducted as nearly as possible under the same conditions as ordinary commercial egg production.

The Contest Houses

Pomona, long recognized as a poultry center, was fittingly chosen as the location of the contest, and houses built on the model of those at Santa Cruz were erected at the corner of Eighth Street and Gary Avenue. Eighteen feet wide and 100 feet long and fronting south to admit every bit of sunshine these two houses are divided into pens 18 by 20, each designed to hold eight entries, or 96 birds. Four of the ten pens have been divided again in order to accommodate the eight experimental pens. The other six have each their quota of 96 birds.

Each pen is provided with 32 trapnests with wire tops and bottoms to make them as nearly as possible mite proof, and for the same reason shavings are used for nest litter. A slatted mash hopper, automatic drip fountain and wire hopper for green feed, which is placed under the droppings board as far as possible from the sunshine complete the equipment of each pen. Two yards, each 20 by 50 and so arranged that greens may be grown in one while the other is occupied, adjoin each pen at the rear. Before the hens are placed in the houses their wings are clipped so that there may be no danger whatever of their flying over the fences and confusing the record.

Feeding the Layers

The poultry division has spared no pains in working out a nourishing and wholesome ration, and C. G. Burgess, the resident manager, is carrying out their instructions with exacting care. The mash, which is before the hens constantly, consists of 35 per cent bran, 20 per cent Red Dog flour, 20 per cent corn meal, 10 per cent linseed meal, 7½ per cent each meat scrap and fish scrap, 2½ per cent charcoal and ½ per cent salt. The scratch feed, which is fed in litter at night, is 40 per cent barley, 20 per cent wheat, 20 per cent cracked yellow corn and 20 per cent milo. Green feed consisting of cut alfalfa during the fall and cut barley in the winter is fed at 9 a. m. in sufficient quantity to last all day.

Experimental Pens

Any one who wishes may contribute two pullets for the experimental pens which are designed to test the comparative value of meat and milk and also of the various milk products.

Pen 1 will be fed the same ration as the birds in the contest, except that the mash contains 15 per cent beef scrap instead of 7½ per cent each of beef scrap and fish scrap. This is the check pen for the other experimental pen.

Pen 2 will be fed condensed buttermilk diluted to the equivalent of fresh buttermilk instead of meat or fish in the mash. The ground grain of the mash will be before them in hoppers and the buttermilk in crocks.

Pen 3 will be fed the same kind of buttermilk diluted according to manufacturers' directions, a more diluted preparation than that given to pen 2.

Pen 4 will have fresh buttermilk in crocks, with the ground grain in hoppers, like 2 and 3.

Pen 5 and pen 6 will have before them two different kinds of condensed buttermilk diluted according to manufacturers' directions. The mash used in these pens is the same as that of the contest layers and the purpose of the experiment is to determine the tonic value of the buttermilk.

Pen 7 will have dried skim milk in place of the meat in the mash.

Pen 8 will have granulated milk albumen instead of meat.

Carried on through the year's feeding these experiments will be of very great value to all the commercial poultrymen of the state and will be watched with keen interest.

Poultry Queries

(Conducted by Jean A. Koethen.)

Overfed

Three of my hens squat on the ground and act dizzy if we try to catch them. They look well and eat fairly well. I feed in the morning a dry mash of bran, ground wheat, ground corn, O. P. meal and beef scrap, with light feed of whole wheat; at noon whole wheat and barley; at night mash wet with water, all they will clean up in 30 minutes and whole wheat and barley; for greens, soaked alfalfa meal.—Subscriber, Fallbrook.

Your hens may have intestinal worms, but they are certainly getting too much grain and too little greens. Alfalfa meal is a very poor substitute for succulent greens such as alfalfa, kale and barley. Keep the dry mash before them all day and give one good feeding of mixed grain at night, enough to make sure that a little is left for morning. Give all the green feed you can and omit the wet mash except as a vehicle for an occasional dose of Epsom salts. The whole flock will probably be better off if you give them at least one good dosing. Dissolve the salts in water, half a teaspoon of salts for each bird, and mix with a small amount of dry mash. The pullets will eat it eagerly if they are fasted a little first.

1000 Eggs in Every Hen

New System of Poultry Keeping—Get Dollar A Dozen Eggs—Famous Poultryman
TELLS HOW

"The great trouble with the poultry business has always been that the laying life of a hen was too short," says Henry Trafford, International Poultry Expert and Breeder, for nearly eighteen years Editor of Poultry Success.
The average pullet lays 150 eggs. If kept the second year, she may lay 100 more. Then she goes to market. Yet, it has been scientifically established that every pullet is born or hatched with over one thousand minute egg germs in her system—and will lay them on a highly profitable basis over a period of four to six years' time if given proper care.
How to work to get 1,000 eggs from every hen; how to get pullets laying early; how to make the old hens lay like pullets; how to keep up heavy egg production all through cold winter months when eggs are highest; triple egg production; make slacker hens hustle; $5.00 profit from every hen in six winter months. These and many other money making poultry secrets are contained in Mr. Trafford's "1,000 EGG HEN" system of poultry raising, one copy of which will be sent absolutely free to any reader of this paper who keeps six hens or more. Eggs should go to a dollar or more a dozen this winter. This means big profit to the poultry keeper who gets the eggs. Mr. Trafford tells how, if you keep chickens and want them to make money for you, cut out this ad and send it with your name and address to Henry Trafford, Suite 243-C, Court Bldg., Binghamton. N. Y., and a free copy of "THE 1,000 EGG HEN" will be sent by return mail.

Easy Now to Get Rid of Lice and Mites

Startling New Discovery Eliminates These Pests Without Dusting, Spraying or Dipping

Any poultry raiser can easily and quickly clean out Lice and Mites by using a new Remedy recently discovered by a Kansas City Chemist and called Imperial Lice & Mite Remedy.

All that is necessary is to occasionally put a few drops of this amazing remedy in the fowl's drinking water. It renders them immune from the attack of all blood-sucking parasites, as these pests positively will not stay on a fowl taking this remedy.

It also acts as a splendid Tonic and Blood Purifier, as well as increasing egg production and growth, for with these pests eliminated, hens lay better and young stock grows faster. It is positively guaranteed not to affect the meat or eggs.

The manufacturers of this wonderful remedy are anxious to get it quickly introduced among poultry raisers everywhere, and make this Special Introductory Offer: Send no money, just your name and address to the Imperial Laboratories, Room 522, 2110 Grand Ave., Kansas City, Mo., and they will send you a regular full sized $1.00 bottle and will also send you free a big, full sized (double strength) $1.00 package of Imperial Egg Tonic, the guaranteed egg producer. Pay the postman only $1.00 and a few cents postage when both packages are delivered. If, after 30 days' trial you are not satisfied with results just say so and your money will be cheerfully refunded.

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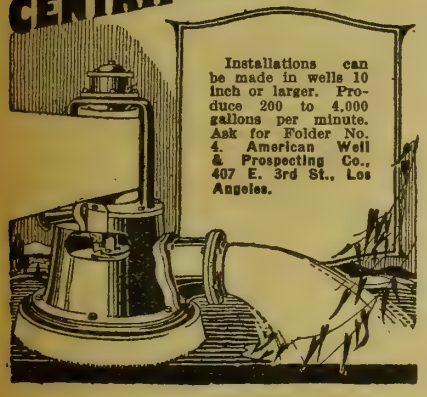

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$12.00 for 100 lbs. DELIVERED to your R.R. Station

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Other sizes 2 to 22 H-P at low prices. Good engines sold direct to you. 90 Days' Trial. 10 Year Guarantee. Write for Free book before you purchase any engine.
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Molting Pullets

What is wrong with my R. I. Red pullets? I have 80 hatched in February and March. The February pullets began to lay at 4½ months but are now molting and have nearly stopped laying.—Subscriber, Fallbrook.

February pullets almost invariably molt in the fall. The only possible preventive is to hold them back from laying until they are well grown and fully developed. All you can do now is to feed them well, using a mash moistened with sour milk in afternoon or evening in addition to the dry mash which is always before them, a full feed of mixed grain at night and as much green as possible during the day. A little linseed meal added to the mash and some sunflower seed in the scratch may hasten the molt a little, but your main reliance must be on abundant feeding.

CALIFORNIA FARM BUREAU EGG LAYING CONTEST AT SANTA CRUZ

The 1921-22 contest is starting on the initial lap of the 12 month stretch with a total of 63 entries while the 54 entries in the fast closing 1920-21 contest, now hardy veterans, are straining over the last monthly lap in a final spurt for a big prize.

With the flashing on of the lights at 5 a. m. Saturday morning, October 1, the 756 incoming pullets settled into the egg laying harness with such a zest that a special deputy had to be placed on duty for the sole purpose of patroling the pens and putting pullets showing signs of wanting to lay on the nests so that they will quickly become used to the nests and the floor eggs be reduced to a minimum.

September, the tenth month of the 1920-21 contest, ended with the contest flock averaging 34.3 per cent, bringing the average production per hen for the 334 days, ending September 30, up to better than 176 eggs. Hanson's pen increased its lead over the second high pen during September and started on the last lap with a lead of 111 2-3 eggs over Gibson's pen. S. L. Gibson's pen climbed into second place over George Gray's pen, forcing Gray and Marshall into third and fourth positions and Hollywood pen moved up into fifth place.

Electric lighting was again resumed at 5 a. m. September 18 and is used in the morning only.

The feed consumption for the month has been 8.3 pounds mash and 8.1 pounds grain ration.

The leading pens to date are: Hanson's Poultry Farm, Corvallis, Oregon, 2291 2/3 eggs; S. L. Gibson, Santa Cruz, 2180; George Gray, Santa Cruz, 2171; W. H. Marshall, Santa Cruz, 2158 2/3; Hollywood Farm, Hollywood, Washington, 2120 2-3, A. W. Ford, Umatilla, Oregon, 2110; Gibson, 2080 2/3; Warren Wood, Santa Cruz, 2056; Gibson, 2005 1/3; Alex Stewart, Santa Cruz, 1979; H. C. Kleinsmith, Hoff, Oregon (Barred Rocks), 1961 2/3; O. A. C. (Barred Rocks), 1956 2/3; C. E. Hyde, Seabright, 1953; W. J. Neef, Santa Cruz, 1948; La Rita Poultry Farm, Santa Cruz, 1942 2/3; D. B. Walls, Petaluma, 1917; E. L. Spacher, Santa Cruz, 1913.

Ten high hens to date: Hollywood Farm, 273 eggs; O. A. C. (Barred Rocks), 264; O. A. C., 260; Hanson, 259; Hanson, 254; Crewdson, 251; Hollywood, 251; Gray, 248; Kleinsmith (Barred Rocks), 249; Gibson, 248.

Hanson's pen won the blue ribbon for high pen for September with a production of 192 eggs.

The high pens for September are: Hanson, 192 eggs; Kleinsmith, 180 1/3; Walls, 166; O. A. C. (Barred Rocks), 164 1/3; Neef, 164; Gray, 161 1/3; Gibson, 157 1/3; Gibson, 152.

The ribbon awards for highest individuals for September were again closely contested for, 5 hens tying for third place. The awards follow: Walls, 26 eggs, first; Walls, 25, second, and Hanson, Kleinsmith, Wood, 24, third. All birds, unless otherwise indicated, are S. C. White Leghorns.

Fractional figures in pen records result from apportioning floor eggs equally between the three entries in each pen.

What You Lose
in using cheap paint—do you know?

GOOD paints require much thought and time in their preparation. That is why you should insist upon puchasing paints that have a reputation.

We make good paints like this—*to save you money;* and we call them Fuller's Specification Farm Paints because we have made them especially for farm use.

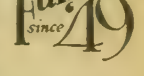
We use Pure PIONEER LEAD, pure linseed oil, zinc and color in scientifically exact proportions, arrived at through 72 years' experience.

The lead is made so fine that it will pass through a silk screen of 40,000 meshes to the square inch. That means covering capacity and ease of spread.

A special device super-purifies the lead, making it "whiter" so Fuller colors are exceptionally clear-toned. All ingredients are thoroughly mixed in specially designed machine, so the paint is always uniform.

The result on the house or barn is an elastic, tough, protective coat that stays five or more years, keeping the wood like new.

Some figure paint economy as "cost per gallon." That is wrong. For "Cheap" paint doesn't cover so much surface—you buy more *gallons.* "Cheap" paint spreads less quickly and you have more labor cost. So "cheap" paint applied is no less expensive than the best.



"Cheap" paint on the average starts cracking in twelve months while the best paint stays intact five or more times longer, if properly applied. Figure then the cost per year of *service* and decide how much you lose when you use cheap paint. Don't allow surfaces to rot. It costs less to paint them.

All "Fuller" Specification Paints are made the costlier way for your economy. Be sure you get them when you paint.

Fuller's SPECIFICATION Farm Paints

House Paint - Barn & Roof Paint
Wagon Paint - Rubber Cement Floor Paint

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Mail the coupon and we'll send you a free copy of "Save the Surface," a book that tells why good paint is important.

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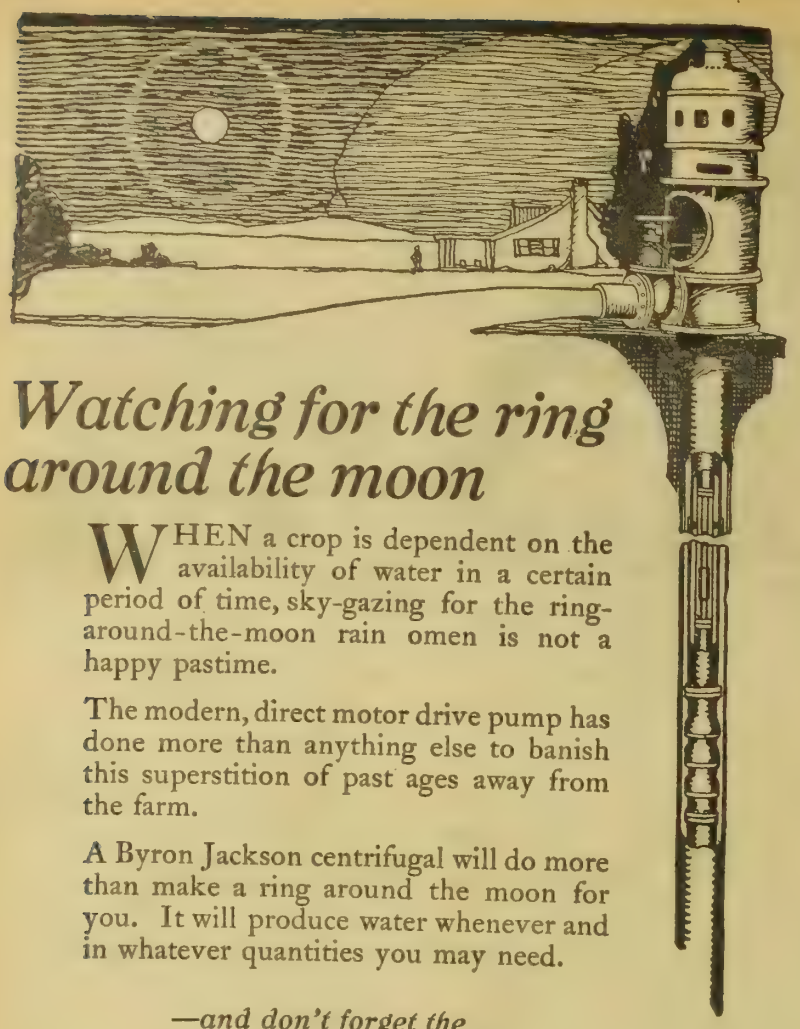

Watching for the ring around the moon

WHEN a crop is dependent on the availability of water in a certain period of time, sky-gazing for the ring-around-the-moon rain omen is not a happy pastime.

The modern, direct motor drive pump has done more than anything else to banish this superstition of past ages away from the farm.

A Byron Jackson centrifugal will do more than make a ring around the moon for you. It will produce water whenever and in whatever quantities you may need.

—and don't forget the Byron Jackson service

BYRON JACKSON IRON WORKS-INC
408 Sharon Building, SAN FRANCISCO
Wherever water is to be lifted

THE FRESNO NURSERY CO. INC. TRADE MARK RELIABILITY QUALITY SERVICE FROM THE ROOTS UP

Headquarters for

FRUIT TREES

Our trees are grown under most favorable conditions in the choicest spots in California.

Let us know your requirements early.

Fresno Nursery Co.
Fresno, California

STRAWBERRIES

The Golden Fruit for a GOLDEN STATE.
My stock of plants consists of the very finest plants to be had, and varieties the very best.
I have for several years supplied some of the large growers of California with such varieties as Nick Ohmer, Marshall, Klondyke, Kellogg's Premier, etc. Ask for my free catalogue describing these berries and about 30 other varieties.

V. R. ALLEN
SEAFORD, DELAWARE

Plant Winter Rhubarb FOR PROFIT

Growers netted this year $1000 per acre. This is the best time to plant for full crop next winter and spring. We can supply plants—all sorts for large fields. Write for price list.

J. B. WAGNER
Rhubarb and Berry Specialist, Pasadena, California.

H. A. Hyde Company
WATSONVILLE, CALIFORNIA
Fruit Trees Berry Plants
Seed Potatoes Purple Vetch
Write For Catalog

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STOP EXPERIMENTING

Use Amalie Oil. It will make your motor run like you want it to.

The Best Costs Less
All Weights—One Price

L. SONNEBORN SONS, Inc.
BROADWAY 637
LOS ANGELES, CAL.

Los Angeles Markets

Los Angeles, October 12, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price 51 cents.

Prices Creamery Extras last week:

Oct.	5	6	7	8	10	11
'21 ...	50	50	50	50	51	51

CHEESE

Brokers prices:
California flats, 21@23.

EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 59; case count, 52; pullets, 44; pewee pullets, 30.

Extras last week:

Oct.	5	6	7	8	10	11
'21 ...	57	57	58	58	58	59

POULTRY

Price to producers: Hens, 27; colored, 32; broilers, 40; roasters, 28; old roosters, 18; fryers, 30; ducks, old, 12; ducklings, Pekin, 3½ up, 25; others, 25; geese, 25; turkeys, live, young tom, 45; dr., 50; old, live, 38; dr., 41; hens, live, 38; dr., 44; squabs, 45@47.

Belgian hares, live, 12@17; old, 8.

LIVESTOCK

Los Angeles, Oct. 11. — Weighed and delivered off cars without food or water:

Hogs (hard grain fed), 125 to 175 lbs., 9.00; 175 to 225 lbs., 9.50.

Cattle (on foot, gross weight): Steers, good, 6.50; medium, 6.00; cows, good, 5.00; medium, 4.50; bulls and stags, 3.00; calves, 125 to 150 lbs., 8.00; 175 to 225 lbs., 7.00.

Sheep: Ewes, 3.50@4.00; lambs, 7.00@7.50.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock October 11, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies heavy. Demand and movement moderate, market weak. Lugs mostly 1.10@1.25. Stocktons: Burbanks, per cwt. poorer 2.25@2.60, best 2.75@3.00, special brands 3.25. Idahos: Russets 3.00 per cwt. Sweet potatoes: Supplies moderate, movement slow, market steady. Locals: No. 1, 75@1.00 per lug, mostly 75@90, No. 2, 50@70 per lug.

Onions: Supplies liberal, movement limited, market steady. Locals: Per lug, 1.15@1.25. Stocktons: Per cwt., Whites, 3.50@3.75; Yellow, 3.50@3.75. Per lug, Whites 1.25@1.40.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock, October 11, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Supplies moderate, demand moderate, market steady. Per lb.: Kentucky Wonder and Greenpod, 5½@6. Limas: Supplies light, movement moderate, market stronger, 6@6½ according to quality.

Cabbage: Supplies moderate, market steady. Per field crate, best, 2.75@3.00.

Carrots: Supplies moderate, market steady, per dozen bunches mostly 40@45.

Cauliflower: Supplies liberal, market steady, 1.75@2.00, according to quality, mostly 2.00.

Celery: Supplies liberal, movement slow, market dull. Per crate, 3.50@4.00.

Cucumbers: Supplies liberal, movement 45@65, wostly 50.

Eggplant: Supplies liberal, demand moderate, market weak, mostly 3½ lb.

Lettuce: Supplies moderate, movement moderate, market firm. Local: Field crates, best, 75@90, poorer 50@60.

Okra: Supplies light, market steady, fancy, small, 9@12 per lb.; poorer, 7@8.

Peas: Supplies light, market firm, best 12@14 lb.; poorer, 10.

Peppers: Supplies heavy, market steady. Locals: Bells, 40@45 lug; Chili, 30@35; Red Pimiento, 70@80.

Squash: Supplies moderate, market steady, summer mostly 35@40 lug; Hubbard, 1½ lb.

Tomatoes: Supplies moderate, demand and movement moderate, market stronger. Locals: No. 1, per lug; Pinks and Ripes, mostly 75@1.00; poorer, 50@60.

Turnips: Supplies moderate, market firm. Per dozen bunches, 40@45.

FRESH FRUITS

Apples: Supplies heavy. Demand and movement moderate, market firm. Locals: 2@4, few fancy Yucaipa section 5@6 per lb. Watsonville: Fancy 4 tier Bellflowers 1.50@1.60, mostly 1.50, 4½ tier 1.25@1.35, B grade. 4 tier 1.40. Utahs: Jonathans 5@6 lb. Washingtons: Jonathans, extra fancy 3.15, fancy 2.85.

Cantaloupes: Supplies light. Demand and movement good, market firm. Homegrowns: Tiptops, small crates, best 90@1.00, other varieties 75@1.00.

Cranberries: Supplies limited, market steady. Early Blacks, 17.00 bbl.; one-third bbl. 4.50@4.75.

Figs: Supplies liberal, demand moderate, market firm. Locals: Per box, 50@1.00.

Grapes: Supplies heavy, movement good, market steady. Per lb.: Muscats mostly 5@5½, Cornichons 5@6½, Malagas 5@7 per lb., Black wine grapes 120, White wine grapes 80.00@100.00 per ton.

Peaches: Demand moderate, market firm. Wide range in quality and condition, mostly ordinary. Freestones mostly 1.00@1.25 per lug. Clings mostly 1.00@1.25 according to quality, all varieties mostly 5 lb.

Pears: Demand and movement moderate, market steady. Bartletts mostly 5@6, few 6½@7; poorer, 3@4 per lb.

Watermelons: Supplies light. Demand light, market firm. Locals: Klondikes mostly ½, few ¾ per lb.

CITRUS FRUITS

Grapefruit: Supplies moderate, movement moderate, market firm. Local: market pack mostly 3.50@4.00; poorer 3.00; special packed, 4.00@4.50.

Lemons: Supplies liberal. Demand moderate, market weak. Locals: special pack mostly 5.00@5.25; market pack, best, 3.50@4.00; poorer, 3.00@3.25; loose box, 2.00@2.50; lugs, 90@1.00.

Oranges: Supplies light. Demand mostly 5.75@6.00; market pack, 3.50@4.25; small sizes 2.75; loose boxes 75@1.50; mostly 1.00@1.25.

HONEY

Supplies throughout California are becoming lighter, especially of sage and orange honeys. Most sage and orange stock is in producers' hands in small lots of less than 100 cases. Supplies of alfalfa, although still moderate, are declining. Demand moderate but steady. Market strong with prices advancing slightly. The small crop of fruit in the East, and the high prices of jams now on the market due partly to the high sugar level last year, are considered to be in part responsible for the increased eastern interest in honey. Carloads f. o. b. usual terms: White Orange 11½@12; White Sage 11½@12; Light Amber Sage 8@8½; Light Amber Alfalfa 6@6½, mostly 6½. Several cars of the 1920 crop of California sage, alfalfa and mesquite recently offered, but the supplies of the old crop have become very light.

Beeswax supplies liberal. Growers receiving 20@22 per pound for crude wax.

NUTS

Cal. Walnut Growers Assoc.:
Opening prices to wholesalers:

No. 1 Softshell	24½
No. 2 Softshell	17½
Standard Budded	28½

GRAIN AND FEEDS

Grain Exch. price bid Oct. 4.
Barley: 100 ton lots, Oct. del. 1.26.
Milo: 100 ton lots, Oct. del. 1.68.

HAY

Alfalfa Growers of California report:

The market for alfalfa hay continued firm and active during the week under a good general demand. The recent rains did no extensive damage excepting in the Imperial Valley.

Receipts in the Los Angeles market are picking up.

There were 880 tons of grain and alfalfa hay received on the Los Angeles tracks the week ending October 8, with 180 tons held over.

Prevailing prices, delivered in vicinity of Los Angeles:

Choice Rabbit Alfalfa	$28.00
Choice Dairy	25.00
No. 1 Dairy	22.00
Standard	17.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats	18.00@26.00
Barley	16.00@24.00
Alfalfa, Rabbit	24.00@28.00
Alfalfa, No. 1 Dairy	19.00@21.00
Standard	16.00@18.00
Straw	12.00

San Francisco Markets

San Francisco, Oct. 11, 1921.

BUTTER

Extras 50½.

CHEESE

Dairy Exchange quotations:

Cal. Flats	24
Cal. Y. A.	26

Oct.	4	5	6	7	8	10
'21 ...	49	50	50	50	..	50½

EGGS

Dairy Exchange quotations:

Extra	59½
Extra firsts	58
Extra pullets	46
Undersized pullets	30½

Oct.	4	5	6	7	8	10
'21	62½	59	59	62	..	59½

POULTRY

Wholesale prices are:

Hens: Colored, per lb., 30@32; White Leghorns, fancy, 27@28; do, medium, 23@26; do, small, 22@24; young roosters, colored, 30@33; old roosters, 18@22; broilers, 45@50; fryers, 30@32; geese, 28@30; ducks, consigned, 20@25.

Pigeons: Old, 2.50 per doz.; squabs, 45@50 per lb.; do, fancy, 50; do, common, 3.50 per doz.; old pigeons, 3.50 per doz.

Turkeys: Per lb., 35; small spring turkeys, 40@45; dressed, 40@50.

Belgian Hares: Live, 16@18 per lb.; do, dressed, 25@28 per lb.

LIVESTOCK

Western Meat Co. quotes:

Weighed off cars at our yards in South San Francisco:

Cattle—No. 1 steers, 5½@6; do, second quality, 4¼; cows and heifers, No. 1 quality, 4¼@4¾; do, second quality, 3½@4¼; bulls and stags, 2½@3.

Calves: Light weight, 7@8; heavy, 5½@6.

Sheep: Wethers, 3½@4; ewes, 2½@3.

Lambs—6@6½.

Hogs — Hard, fat, grain-fed, weighing 125 to 200 lbs., 10; 200 to 250 lbs., 9; 250 to 300 lbs., 8; light sows, 8; heavy, 7.

California Farm Bureau Marketing Association reports:

No. Hogs	Ave. Wt.	Dock	Price
Modesto, October 4			
88	155	...	10.10
43	197	...	10.00
5 feed'rs	116	...	9.60
24	260	...	8.50
3	483	40	7.60
2 stags	425	340	4.00
1 boar	620	...	3.00

Three cars, 30 consignors, $3,184.53.

Chowchilla, October 6			
55	200	...	10.55
37	152	...	10.30
2	385	20	6.00
1 sow	...	...	25.00

One car, 13 consignors, $1,813.53.

Fresno, October 7			
70	190	...	9.75
1	200	...	8.00
7	333	90	7.00

One car, 8 consignors, $1,470.52.

Total for the week, 5 cars, 51 consignors, $6,468.58.

These prices are f. o. b. shipping point, to the farmer, while the prices quoted by the newspapers are off cars at their packing house.

POTATOES AND ONIONS

Street prices:

Potatoes: Street prices: River, 2.50@2.75; second grade, 2.00@2.25; Oregon Burbanks, 2.65@2.75; Salinas. 3.50@3.75; netted gems, 3.00. Sweets, 2½@3½ per lb.; Turlock Nancy Hall, 2½@3½ per lb.

Onions: New crop Yellow, 3.25; Brown, 3.50@3.75; Green, 1.50@2.00 per box.

Garlic: 3@5 per lb.

VEGETABLES

Wholesale selling price:

Artichokes: 6.00@10.00 case .

Beets: 1.75@2.00 per sack.

Beans: String, 2@4 lb.; Lima, 3@5.

Brussel Sprouts: 6½@8 per lb.

Carrots: Sk., 1.00.

Celery: 3.00@4.00 cr., bunch 30@40; bleached 4.00@4.50 cr.

Corn: Alameda, 2.00@3.00 sack; 2.00@2.75 cr.

Cucumbers: Bay, 40@50; fy. River, 75@1.00 lug.

Eggplant: Lb., 3@5; Livingston, 5@7.

Lettuce: Crate, 1.25.

Okra: 1.00@1.50 per box of about 10 lbs.

Peas: 5@10.

Peppers: Bells, 3@4 lb.; 50@75 lug; Chili, 3@5.

Spinach: 3½ per lb.

Squash: Bay, 50@65 per 40 lb. lug; Italian Peninsula, 1.00@1.25 lug; cream, 75@1.00.

Tomatoes: Sacramento and Peninsula, 50@1.00.

FRESH FRUITS

Apples: Bellflower, 3½ and 4-tier, 1.50@1.65; 4½-tier, 1.15@1.25; B grade, 1.10@1.25; Alexanders, 3½ and 4-tier, 1.25@1.50; 4½-tier, 1.00@1.25; Rhode Island Greenings, 3½ and 4-tier, 1.50@1.75; 4½-tier, 1.00@1.25; Banana, 3½-tier, 2.25@2.50; 4-tier, 2.00@2.25; 4½-tier, 1.50@1.75; Red Cheek Pippins, 3½-tier, 1.60@1.75; 4-tier, 1.40@1.60; 4½-tier, 1.10@1.25; Jonathans, 3½ and 4-tier, 2.50; 4½-tier, 1.50@1.75; B grade, 1.50@1.75; Kings, 3½ and 4-tier, 2.00@2.25; 4½-tier, 1.50@1.75; B grade, 1.25@1.50; yellow Newtown Pippins, 3 and 4-tier, 2.00@2.25; 4½-tier, 1.75; B grade, 1.50; Spitzenburg, 3½ and 4-tier, 2.25@2.50; 4½-tier, 2.00.

Avocados: California, doz., large, 3.00@5.00; small, 1.00@2.00; Fla., 3.00@5.00.

Bananas: Eastern, 6@7; Hawaiian, 7@8.

Blackberries: 35@50 per drawer.

Cantaloupes: Flesh tinted, 2.00@3.50 cr.; River, 1.00@1.25 lug. Persian, 1.00@1.25 per small cr., 1.50 large; Honeydew, 75@1.00 per standard crate; Casabas, 50@75 per dozen.

Chestnuts: 25 per lb.

Cranberries: Bx., 5.00@5.50; Cape Cod, 15.00@16.00 bbl.

Figs: Black, double layer, 1.25@1.50; single layer, 75@1.25; do, white, single, 75@1.00.

Grapes: Per crate, seedless, 1.65@1.75; laga, 1.25@1.50; black, 2.50@3.00; fancy, 3.50 per large lug; Tokay, 2.00@2.25 per large lug; fancy, 3.00; Muscat, lugs, 2.00@2.50; fancy, 3.00; wine grapes 85.00@1.00.00 per ton.

Huckleberries: 12½@20 lb.

Peaches: Oregon packers, 1.50@1.75; per small box. Placer County, 1.00@1.15.

Pears: Bartletts, No. 1. wrapped, 2.75@4.00 box; Forelle, lug 75@1.50.

Pineapples: 4.00@4.50 dozen.

Persimmons: 1.75@2.25.

Pomegranates: 85@1.25.

Prunes: Silver, 1.25@1.50 per crate; German, 1.75@1.85 crate; 60@75 small box.

Quinces: 1.25@1.50 lug.

Raspberries: 60@85 per drawer.

Strawberries: cr.. 1.25@1.60; dr., 65@75.

Watermelons: 1.00@2.50 doz.

DRIED FRUITS

Apples, 1921 (Packers' Quotations):

Choice (in 50s)	10¼
Extra choice (in 50s)	10½

Apricots, 1921 (California Prune and Apricot Growers) Bulk Basis:

	Sun-sweet	San Joaquin
Standard	12	10½
Choice	16	13½
Extra Choice	17	14½
Fancy	19	15½
Extra Fancy	21	....

Peaches, 1921 (California Peach and Fig Growers), Sept.-Oct,-Nov. shipment, guaranteed to January 1:

	Yellow	Muir
Slabs (in 50s)	@9	...@...
Standard (in 50s)	@9¼	...@9½
Choice (in 50s)	@9 7/8	...@...
Fancy (in 50s)	@11	...@12
Extra fancy (in 50s)	@12	...@13
Practically Peeled—		
Standard (in 50s)	@10¼	...10½
Choice (in 50s)	@10 7/8	...@...
Fancy (in 50s)	@12	...@13
Extra fancy (in 50s)	@13	...@14

Cartons, 30 11-oz., per case	3.10
Cartons, 60 11-oz., per case	6.00
Cartons, 24 2-lb., per case	6.50
Cartons, 10 5-lb., per case	6.60

Figs, 1921 (Cal. Peach and Fig Growers), Sept.-Oct. shipment, guaranteed to Jan. 1:

White—	
Standard (in 50s)	6½
Choice (in 50s)	8
Fancy (in 50s)	10½
Bricks, 12 No. 10s	1.10
Bricks, 24 No. 8s	1.80
Bricks, 50 No. 6s	2.80
Bricks, 70 No. 4s	2.95
Layers, 10-lb., 4-row	1.60
Layers, 10-lb., 5-row	1.40
Calimyrna—	
Standard (in 50s)	7½
Choice (in 50s)	10½
Fancy (in 50s)	13
Bricks, 24 No. 8s	2.05
Layers, 10-lb., 6-row	1.90
Black—	
Standard (in 50s)	6
Choice (in 50s)	8
Fancy (in 50s)	11

Raisins, 1921 (Cal. Assoc. Raisin Co.): Sun-Maid Raisins:

Muscats: 36 15-oz. cartons, seeded, 14¾ lb.; 25-lb. boxes, bakers' seeded, 13 lb.; 25-lb. boxes bakers' seeded, 13½ lb.

Muscats: 25 1-lb. boxes, 2-crown loose, 13¾ lb.; 25 1-lb. boxes, 3-crown loose, 13¾ lb.; 25 1-lb. boxes, 4-crown loose, 15 lb.

Thompson Seedless: 48 15-oz. cartons, unbleached, recleaned, carton, 16 lb; 25-lb. bulk 14½; 25-lb. bakers' graded, unbleached, 17; 25-lb. boxes, choice, sulphur bleached, 18; 25-lb. extra fancy, sulphur bleach, 19; 25-lb, oil dipped, 15½; 25-lb. soda dipped, 15½.

London Layer Raisins: 3-crown London layer: 20-lb. boxes, $3.50 per box; 10-lb. boxes, $1.85; 5-lb. boxes, $1.00.

Clusters: 20-lb carton, clusters, $4.00 per box; 12 2-lb. carton, clusters, $4.80; 4 5-lb. cartons, clusters, $5.50 5-lb. carton, Imperial clusters, $1.50; 80-lb. vineyard run layer, $12.50.

Sultanas: 25-lb. box unbleached, recleaned, 13½ per lb; 25-lb. box, soda dipped, 14½; 25-lb. oil dipped, 14½.

Black Grapes: 25-lb. boxes black grapes, 14½ per lb.

Old Crop:

Muscats: 36 16-oz. cartons, seeded, 14½ per lb.; 25-lb. bakers' seeded, 13; 1-crown loose Muscats, 13½.

Sultanas: Sultans, unbleached, recleaned, 13½ per lb.

Thompson Seedless: Soda dipped Thompsons, 15 per lb.; oil dipped Thompsons, 15; black grapes, 14½.

Prunes, 1921 (Cal. Prune & Apricot Growers): Sunsweet Quality, bulk basis: 30-40s, 9¼; 40-50s, 8¼; 50-60s, 6¾, 60-70s, 6¼; 70-80s, 80-90s, 90-100s, 5½. Growers Brand ¼c less on all sizes. All prices subject to change at any time.

BEANS

Below California Bean Growers Association shippers prices choice recleaned:

Large Whites	4.90
Small Whites	4.60
Pinks	4.75
Mexican Reds	6.00
Red Kidney	7.40
Henderson Bush	4.85
Cranberries	5.75
Bayos	5.40
Blackeyes	3.50

HAY AND FEED

Receipts hay during week 911 tons as compared with 1,025 tons of the previous week. While prices have not improved general business is much more active and the volume of sales considerably greater than we have had for some time. As money has been coming to the farmers from the cashing of their crops it has eased up the tension throughout the country districts and also had a tendency to create a sentiment of confidence among the country dealers. Alfalfa has been moving quite heavily although the necessity of shipping before being caught by the rain has made producers in this section anxious to sell with a result that prices have been extremely weak throughout the shipping districts although unchanged on our local market.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the markets in San Francisco (for prices to consumers, charges of switching, cartage, commission and handling expenses must be added, according to conditions).

Wheat Hay No. 1	16.00@18.00
Wheat Hay, fair grade	13.00@16.00
Tame Oat Hay	13.00@15.00
Wild Oat Hay	10.00@12.00
Alfalfa Hay	12.00@15.00
Stock Hay	8.00@10.00
Straw	10.00@12.00
Rolled Barley	29.00@30.00
Ground Barley	31.00@33.00
Oats, Rolled Feed	34.00@36.00
Bran and Millrun	24.00@27.00
Middlings	40.00@43.00
Linseed Meal	41.00@42.00
Coconut Meal	22.00@25.00
Alfalfa Meal	21.00@23.00
Cottonseed Meal	38.00@40.00
Sugar Beet Pulp	29.00@30.00
Molasses Tanks	21.00 Barr. 25.00
Milo Maize, Corn Meal and Cracked Corn	38.00@41.00
Scratch Feed	45.00@48.00

GRAIN

Sales on Grain Exchange:

Wheat: Milling, 1.95@2.00; feed, 1.90@2.00.

Barley: Feed, 1.17@1.22½; shipping, 1.25@1.30.

Oats: Red Feed, 1.40@1.60; Seed. 1.65@2.00.

Corn: California yellow, 1.50@1.55; eastern yellow No. 2, 1.40@1.42; No. 3, 1.66@1.75; No. 3 Kaffir, in bulk, nominal; White Egyptian, 1.70@1.75; California red milo, 1.65@1.70.

Citrus Markets

Los Angeles, October 12, 1921.

Oranges are especially strong and occasional spectacular sales are made. Some auction sales have crowded close to $10 mark.

Lemons are easier, especially heavy imports of foreigns affecting the market.

Shipments

Shipments of citrus fruits to date since November 1, 1920, Southern California: Oranges, 39,617 cars; lemons, 11,194; total, 50,811. To same date last season: Oranges 29,533; lemons, 8,019; total, 37,552. From Central California to date this season: Oranges, 6,658; lemons 212; total. 6,870. To same date last season: Oranges, 5,383; lemons, 288; total, 5,671. From Northern California to date this season: Oranges, 305; lemons, 5; total, 310. To same date last season: Oranges, 261; lemons, 23; total, 284.

THE FLOWER SHOW

(Continued from Page 391.)

of electric lights that will make the fountain an hundred fold more beautiful by night than by day In addition to this the outer basin is filled with water lilies in bloom, whose growth and glory is accelerated and increased by steam pipes from the special underground power plant. At night this gigantic water display will have the general effect of a glass dome of great height. Around the border of the garden various landscape designers have wrought unique and spectacular features. O. W. Howard will show his conception of the "Wee Hoos 'Mang the Heather," as described by Harry Lauder in the famous Scotch song of that name. A bagpipe band and Scotch singers will be on hand to further entertain the visitors. Mon! Mon! Ye dinna ken the joy o't.

The main indoor flower show will be in a huge tent 130 by 250 feet opposite the main entrance on Exposition Boulevard. The entrance booths will be through the body of a huge floral basket 30 feet high and inside the lights will emanate from immense colored reproductions of flowers—roses, poppies, tulips, etc., held aloft by pedestaled female figures 12 feet high, designed somewhat after the famous Statue of Liberty on Bedloes Island, New York Harbor. The trade exhibits proper will be under another huge canvas 130 by 280 feet, the court of the State Armory Building. All three gigantic features are continuous; the visitor passes from flower and plant show to trade exhibit and from there directly into the seven acres of blossoms. More money and men have been used in the preparation of this flower show, doubtless, than the total amount and number heretofore utilized in all the shows of this character yet held in California and the management has anounced that it expects a total of 200,000 visitors to pass through the gates. There is no doubt that in extent and variety of exhibit it will also equal many combined of the largest shows of the past held in San Francisco, Los Angeles, etc. For the first time in history the whole state contributes its best.

New Lamp Burns 94% Air

Beats Electric or Gas

A new oil lamp that gives an amazingly brilliant, soft, white light, even better than gas or electricity, has been tested by the U. S. Government and 35 leading universities and found to be superior to 10 ordinary oil lamps. It burns without odor, smoke or noise—no pumping up, is simple, clean, safe. Burns 94% air and 6% common kerosene (coal-oil).

The inventor, V. N. Johnson, 31 N. Fifth St., Portland, Ore., is offering to send a lamp on 10 days' FREE trial, or even to give one FREE to the first user in each locality who will help him introduce it. Write him today for full particulars. Also ask him to explain how you can get the agency, and without experience or money make $250 to $500 per month.

This Log Saw

$99.50 F. O. B. K. C.

At Pittsburgh $6 More.

Quick Change to Tree Saw

A dependable fast cutting Log Saw at the right price. Powerful 4-cycle engine with two fly-wheels gives steady power, sawing logs or trees, or for belt work. Lever Control.

CUTS 'EM UP

TREE SAW FREE

For a short time only we will include the WITTE Tree Saw Equipment FREE with each Log Saw. Write for Catalog.

One Man Cut 50 Trees in 5 Hours

WITTE ENGINE WORKS

3104 Oakland Ave., - Kansas City, Mo.
3104 Empire Bldg., - Pittsburgh, Pa.

"Beware of little extravagances; a small leak will sink a big ship."
—Benjamin Franklin.

So We Advise

"Tracto-Rite"

REGISTERED U.S. PATENT OFFICE

Pennsylvania, Paraffine Base

TRACTOR OIL

PUENTE OIL CO.

HIGGINS BLDG. LOS ANGELES

Bean Pumps

Stuffing Box Troubles Ended—

The Bean Sealing Bowl absolutely prevents loss of priming without resorting to a tight stuffing-box. The shaft is entirely surrounded by water. Repacking is rarely necessary and never needs to be screwed up tightly. Less friction! Higher efficiency! Mail the coupon.

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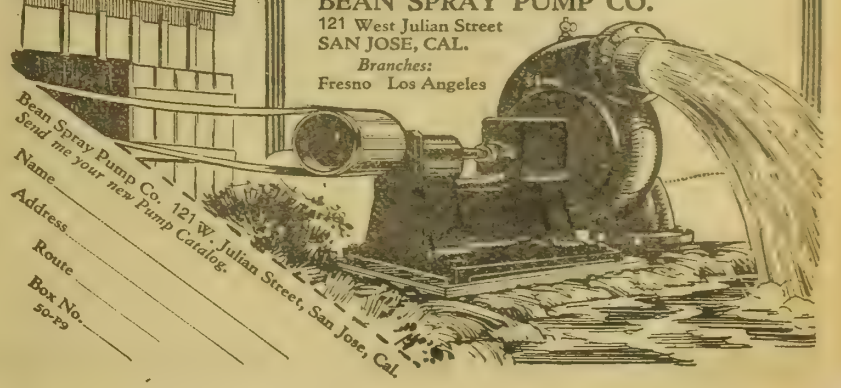

Bean Spray Pump Co., 121 W. Julian Street, San Jose, Cal.
Send me your new Pump Catalog.
Name
Address
Route
Box No.
50-P9

New Irrigation District to be Developed in FRESNO COUNTY

Mutual Husbandry Club Now Being Formed

Land in this Irrigation district may be purchased by members of the Club at the dry land price of not to exceed $50.00 per acre.
Think of the opportunity offered by cooperative pooling of interests.
Big profits should be realized on this land.

Read this page carefully and act promptly. Fill out the coupon and mail for full particulars.

SOIL

The soil of this entire tract is about the same quality, being of a dark brown silt loam of clay formation, of good depth, free from hardpan and alkali, level in its general contour. This land has been farmed to grain for a great many years and is noted for its fertility and high productive powers when irrigated.

ADAPTABILITY

All of this land is so fertile and rich that it is adapted to any kind of crops suitable to this climate, such as figs, raisins, all kinds of deciduous fruits, vegetables, alfalfa and all kinds of grain crops. All the above named require irrigation.

OBJECT OF MUTUAL HUSBANDRY CLUB

It is the intention to form an irrigation district in Fresno County, under the California irrigation laws, upon soil that has been proved to be exceedingly fertile by the development of several projects irrigated from deep wells and dealing with the same soil as the soil in the proposed district.

AMPLE WATER ASSURED

The sufficiency of the water for the irrigation of the land within the proposed district by gravity has been established by ardent and prolonged studies and investigations on the part of competent engineers who have completed their filings before the State Water Commission upon the watersheds supplying this water. Five hundred thousand acre feet of water can be impounded in natural reservoir sites.

In order to obtain the approval of the State Engineer and other State authorities for the formation of this district the findings of these engineers must be established to the satisfaction of the State Engineer by additional engineering work.

The land in the proposed district can now be purchased at not to exceed $50.00 per acre.

A mutual association, called the "MUTUAL HUSBANDRY CLUB," has been formed for the following purposes:

1. To assist in completing the engineering work necessary to be done to prove to the State Engineer that the proposed project is feasible and to cooperate in every way possible to bring about the formation of the district.

2. To take all necessary preparatory steps for the formation of the irrigation district.

3. The engineers have secured options on land enough within the proposed district to secure for each member of this association from one to forty acres of land. Amount of land up to 40 acres optional with the member.

In order that this association may, in this manner, avail itself of the opportunity to acquire land at the present low price for its members and to be benefited by the substantial increase in value of this land through the formation of an irrigation district under the California irrigation laws, it is necessary that at least 500 members join this association and become landowners and voters able to petition for the formation of this irrigation district.

The Mutual Husbandry Club is assisting the engineers in the formation of this irrigation district, enabling thereby these engineers to participate with the other members in the increased land values and, in return, these engineers are granting the other members of the association the same privileges on a mutual and cooperative basis to buy land at the present low price and be benefited by the increased values.

Each member of the association contributes $100.00 to the association, which, under the direction of five Trustees already elected by this association, is to be expended for engineering and organization work and the optioning up of additional land within the proposed district for the members of this association.

LOAN VALUE

Such portions of the money that may have been expended for engineering and organization work will be refunded by the district, when formed, out of the bond issue to be voted to construct the irrigation system.

The increase in value of the land by the formation of the district will enable the purchasers to borrow any unpaid portion, if they desire.

RISK

The risk incurred in joining this association and contributing $100.00 thereto is the following:

If the State Engineer and other State authorities do not approve of the formation of this district, which would be the case if they found the engineers to be mistaken in their calculations, then such portions of these $100.00 that have been expended up to the time of this decision would be lost to the members of this association; the balance remaining in the treasury would be pro rated among the members of the association.

STATE ASSISTANCE

It should be remembered, however, that if the State Engineer and other State authorities find the project feasible and sanction the formation of this district, it becomes their duty to assist in every way possible to foster this district upon the principle that the State of California desires fertile land to be irrigated and to make use of any and all available water for that purpose.

INCREASE OF LAND VALUE

If the district is sanctioned, the holdings of each member of the association, in our opinion, are materially increased in value, even before the work of constructing the irrigation system has begun.

The land in question is subject to the most intensified cultivation and can be brought up to the highest valuation of any land in this State.

There is no better grape or fig land anywhere in this State of California and, altogether, this is a good risk to obtain a valuable piece of land.

The irrigation district will be developed in three or four units, and the land of the members of this association will be the first unit.

The least you can buy such land as this for in an irrigation district formed under the Wright Act, in a raw state, is $250.00 per acre, and possibly more. Now you are getting it for $50.00 per acre, because you are helping to form the district by your votes.

—MAIL THIS COUPON TODAY—

HOWARD & BUTTERBAUGH LAND CO.,
Trustees For
MUTUAL HUSBANDRY CLUB,

302 New Pantages Bldg.
Los Angeles, Calif.
I am interested in the Mutual Husbandry Club and would appreciate full particulars.

NAME .....

ADDRESS .....

Howard & Butterbaugh Land Co.

Trustees for
Mutual Husbandry Club

302 New Pantages Bldg.

Los Angeles **Calif.**

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LVII — October 22, 1921 — No. 17

Guernseys Up in the Land of the Redwoods

Established 1877 Forty-fourth Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877

Combined with California Cultivator 1914 Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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Saturday October 22, 1921

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

If among the more than 40,000 Cultivator's weekly circulation any fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

EDITORIALETTES

Humboldt County holds the cover this week. There are the redwoods and the rich pastures and the richer Guernseys. The herd there shown is one of the first to become a member of a cow testing association in California. This was in 1909 when the Ferndale Cow Testing Association was organized. Mr. Rasmussen, the owner of the herd, enrolled his entire bunch of 123 cows. The first year of test showed 227 pounds average fat. It resulted in a number of the cows being sent to the butcher and a raising of the average to 279 pounds fat. The grading up continued until now Mr. Rasmussen demands of every cow at least 350 pounds fat in ten months, and there are 28 grades and pure bred Guernseys now in his herd who have an average production of 511 pounds. Hence our remark above as to Humboldt's rich pastures and richer Guernseys. We are indebted to the Guernsey Breeders Journal for use of the engraving.

* * *

Humboldt County continues as Cultivator purse winner in the state dairy cow competition. The southern end of the state pulled away everything for the first few months of the contest, but the extreme north has claimed nearly every prize during the last six months. Nate Hauck of Alton is the September winner. Prof. Woll's account of the performance of the five grade cow winners will be given in next issue.

* * *

The Ohio experiment station has definitely established that lazy mid-winter hens routed out at three or four o'clock in the morning by turning on the electric lights will lay more eggs than those who remain on the perches and sing: "It's nice to get up in the morning but it's nicer to lie in bed." The station has also discovered that these same hens won't stand the strain of the extra production unless they are given a long fall vacation with plenty of sustaining extra food. This only helps to establish the law that nature has its limitations excepting under special coddling. The station's conclusion is: "The more they eat, the more they'll lay, but to force production without supplying additional food is to defeat the sole purpose of lighting."

* * *

It's a good idea to clean up the weeds which may be harboring aphis or other expensive insects and it is usually recommended that all weeds be burned, but if they can be gathered and piled with ashes, leaves, dirt, garbage from the table, manure and refuse generally, with an occasional layer of dirt, there is no reason why a fine compost of dirt should not be secured. If properly kept moist, worked over and thoroughly decayed, there will be no danger of scattering weed seeds or insect pests.

* * *

Speaking of bugs, they cost us a billion a year (that is not an editorial "us"). The department of agriculture has made an approximation and finds that with grasshoppers eating a 50 million dollar meal; chinch bugs, 60 million; Hessian flies, 40 million; corn ear worm, 20 million; boll weevil, 20, and on down the line to our little old San Jose scale presenting a board bill of ten million, the grand total of $1,100,000,000 is reached. In fact, the farmers obey the old Mosaic law and tithe unto the insects, for it is estimated that at least one-tenth of all the crops in the Unied States is required to support insect life. Strength to the arm of the state department of agriculture and to the federal department, which are seeking for the beneficial insects which will help us to control these which cause such great damage.

* * *

Another statement which startles almost as much as this aggregate contribution we make to insect life, is that "of American cattle 97 per cent are scrubs." We don't believe Californians are prepared to admit any such percentage of scrubs in this state, but doubtless if we knew as definitely as some members of the cow testing associations know what their animals are doing we might be startled to find the number of boarders in California.

* * *

A writer in "History of Agriculture" has suggested that "The man who improves the livestock of a community or gives it a better variety of corn is as deserving of praise as he who 'plucks glory from the cannon's mouth.'" It may be, but we continue to beat our plowshares into swords. We are hoping the coming of Armistice Day will result in starting the job of melting over our armaments into implements of agriculture.

PLACER COUNTY PLAN

Placer County claims a plan of its own in the ousting of Japanese or, rather, in a very quiet movement of replacing Japanese tenants with white folks, folks who will upbuild the community and fill the schools with white children. Placer County is, or at least was, one county in the state in which leasing of orchard properties to Japanese was a common practice. Most other sections confined their dealings with Asiatics to leasing potato or truck farming lands. Many orchardists of Placer County, however, continued leasing to Japanese until the situation became alarming. We now note in a statement issued by the Placer County chamber of commerce that "at the present time a number of Placer County fruit growers are ready to rent their properties. This presents an opportunity to experienced white fruit growers to obtain a home in the wonderful Placer County fruit growing belt"

CONVENTION WEEK

The conventions are on. Director Hecke of the state department of agriculture is in Los Angeles completing details for the convention which opens next Monday morning. There are some live topics up for discussion, chief of which are legislation and water transportation.

Meantime the nurserymen's convention is in full swing. California is the nation's greatest nursery state and has the most effective of all state organizations amongst nursery people. Besides talking shop the nurserymen are discussing the larger questions of horticulture affecting the Pacific Coast, and it is expected that a new impetus will be given to the bud selection movement. Avocado men have the entire day of Saturday, ending this first week of the convention in a great banquet at the Ambassador.

The Fruit Growers convention banquet is to be held on Tuesday evening, October 25, at the City Club, corner Broadway and Eighth Streets, at 8:30. Governor Stephens will be guest of honor and it has been hoped that Secretaries Wallace and Hoover may be present but definite acceptance has not been received from them. Noted speakers will leave no dull moment.

The week closes on Wednesday with horticultural commissioners in charge of the entire day's program.

The Flower and Horticultural Show is one of the handsomest shows ever staged. It will continue through the two convention weeks.

MARVEL OF WORLD

The growth of a large city may be of little concern to most readers of the California Cultivator, but we are going to refer to the wonderful growth of the city of Los Angeles purely for the sake of enforcing a truth which it seems hard to get our own California people to appreciate. That truth has to do with the upbuilding of this great state.

As an indication of the rate of growth of that city let us call attention to the fact that the cost of new buildings there aggregated about a year ago between two and three millions of dollars each month. This has gradually increased until five and six and seven millions per month has been chronicled as the cost of those buildings and they are mostly of cottages to house home makers coming from other states. It is now estimated that the cost of homes to be built during the month of October will aggregate nearly eight millions of dollars.

Why this increase which has been termed the marvel of the world? And one who has investigated answers, "Water and hydro-electric power supplied by the city at low rates." This power has been secured because of a 240 mile aqueduct which cost about 25 millions of dollars (and power plants costing possibly 15 millions) carrying to the city 272,000,000 gallons of water daily from the slopes of Mt. Whitney.

Los Angeles has pointed the way and is now urging a greater industrial and agricultural development of the entire Southwest by asking the cities, towns, communities and farming districts to join with that city and the federal government in building the great Boulder canyon project on the Colorado river. This gigantic project, under public ownership, will benefit all of the people of the Southwest and will in no way injure the rights of the people along the upper portion of the Colorado river and its tributaries.

Public utility corporations will not—cannot—make as low rates as can municipalities or communities cooperating in the development and distribution of hydro-electric power. Then why do not our people awaken and act?

Los Angeles proposes that in Boulder canyon on the Colorado river a dam shall be constructed to impound water capable of irrigating 2,000,000 acres of land and providing opportunity for installing hydro-electric power systems capable of generating 700,000 horsepower, and that other cities and communities shall unite in financing and benefiting from the development which will be under the direct supervision of the reclamation service of the United States. The magnitude of this is made apparent when it is understood that the total installed horsepower within the boundaries of all California today totals only 1,107,139.

Arthur P. Davis, director of the reclamation service, has reported to congress as to the great wealth possible because of this development, and its feasibility. This scheme is interstate and even international in scope and will call for patience and energetic action on the part of the people of the state to bring it about. There are others much simpler and yet with wonderful possibilities, and all within the boundaries of California, in the mountains all the way from Modoc to San Diego.

Let us get under the Marshall plan or any other plan which permits cooperation in the development of California's resources. Thirsty lands need the impounded water, while other thirsty lands underlaid with water need the power to lift it to the surface. If the people do not take advantage of the opportunity now before them public utility companies will, and this will means the state's upbuilding but with less of net return to the producers.

Since the above was put in type the daily press makes announcement in most obscure corners: "According to advices from Washington, Secretary of the Interior Albert B. Fall will come to San Diego the first week in November, if this date is acceptable to all concerned, to meet in conference with representatives of Southern California, Arizona and Nevada to make definite plans for early starting of work on the Boulder Canyon dam project. The Boulder Canyon project was discussed by the president and Secretary Fall at great length and the president gave his enthusiastic indorsement to federal building of the great dam."

California Cultivator

Vol. LVII, No. 17 | Los Angeles, October 22, 1921 | One Dollar Yearly

California Livestock and Horse Show

San Francisco has come back. She held a livestock show, then last year she lapsed. This year she is opening on Saturday of this week the livestock show declared to be worthy of the great city which promotes it. C. N. Hawkins is president of the organization promoting the show, C. R. Thomas, general manager, and John A. Bunting, secretary. There are four acres under canvas, and the management announces the finest herds of Shorthorns, Herefords, Aberdeen-Angus ever exhibited will be among those present. The exhibitors are:

Shorthorns

Howard Vaughn, Dixon, 4. Ormondale Ranch, Redwood City, 10. Easton & Ward, Diablo. W. M. Carruthers, Live Oak, 8. Caledonia Farms, West Sacramento, 17. William Bond, Newark, 4. Thomas T. Miller, Hollister, 10. T. S. Glide, Davis, 15. Estate Thomas B. Dibblee, Santa Barbara, 10. Straloch Farm, Woodland, 7. Pacheco Cattle Co., Hollister, 14. University of California, Davis, 1.

Herefords

University of California, 2. Mission Hereford Farms, Mission San Jose, 8. John A. Bunting, Mission San Jose, 3. Harry Thiessen, Sweetwater, Idaho, 12. A. B. Cook, Townsend, Montana, 17. W. D. Duke, Esparto, 1. H. H. Gable, Esparto, 4. Wm. Briggs & Sons, Dixon, 10. Charles Rule, Jenner, 4. H. A. Baldwin, Pleasanton, 2. Sierra Vista Vineyard Co., Minturn, 4. Diablo Stock Farm, Danville, 6. J. B. McNerney & Sons, Carlton, Oregon, 13. A. M. Barnum, Moro, Oregon, 11. Romie C. Jacks, Monterey, 20. C. S. Howard, Willits, 6. Frank R. Howard, Willits, 1. H. M. Barngrover, Taylorville, 16. J. H. Cazier & Sons Co., Wells, Nevada, 11. Ken Caryl Ranch Co., Littleton, Colorado, 12.

Aberdeen-Angus

F. F. Peabody, Santa Barbara.

Fat Steers

University of California, 3.

Holsteins

Bridgford Holstein Co., Patterson, 13. A. W. Morris & Sons Co., Woodland, 12. E. Swift Train, San Francisco, 1.

Jerseys

Guy H. Miller, Modesto, 11. J. E. Thorp, Lockeford, 20. M. Fortini, Oriand, 2. Harold Mordecal, Petaluma, 1. Oscar B. Peterson, Sebastopol, 1. Newton M. Peterson, Sebastopol, 1.

Guernseys

A. B. Humphrey, Escalon, 16. Brant Rancho, Owensmouth, 12.

Ayrshires

Woodside Farm, San Francisco, 6. Alta Cresta Farm, Spencer, Massachusetts, 33.

Milking Shorthorns

Alexander & Kellogg, Davis, 16. R. Heckley, Santa Rosa, 1. Santa Rosa Stock Farm, Santa Rosa, 12.

Percherons

Miller & Lux, San Francisco, 9. University of California, 7. Romie C. Jacks, Monterey, 16.

Belgians

Ratto Stock Farm, San Francisco, 9.

Shires

Easton & Ward, Diablo, 12.

Clydes

Est. of T. B. Dibblee, Santa Barbara, 7.

Shetland Ponies

Frank R. Howard, Willits, 5.

(Continued on Page 431.)

Harnessing Unused Energy

Address by Arthur S. Bent Before Metropolitan Club, Washington, D. C.

HARNESSING unused energy is a pretty big and indefinite topic, and has doubtless already stirred your imaginations in many directions. My own first thought was how miraculously, overnight, life would be changed, if human energy could be conserved and coordinated completely. But my subject has a simpler and more feasible aspect than that. The stupendous possibilities of the unused natural energy about us have inspired men of all times from Archimedes, who cried out for standing room while he moved the earth, down to our old friend, Bill Nye, who proposed to condense water over in Oregon and send it to Arizona, there to be diluted for irrigation purposes. Rather impractical schemes, both of them, we'll say.

The uncaught forces of nature are still on every hand, but when we consider how our Morses and Marconis and Curies and Edisons and Wrights and Burbanks are seizing and harnessing them for our use, it seems impossible to overdraw the picture of the world's future.

The story of man's progress in the past has been one of sudden, vivid chapters closely linked up with the harnessing of each new energy from fire to radium.

Consider transportation. Up to 1830 it was practically unchanged from the days of Alexander the Great. My forebears went West by ox team. Then came steam, and suddenly, after having painfully crept only as far West as the Missouri in nearly 200 years, we leaped the rest of the way to the Pacific Coast in decades. H. G. Wells recently said that "Without railways and telegraph it would be easier to administer California from Pekin than from Washington." We know that if our railways should stop, this great nation would fall to pieces, fall into little states, and become what Europe is today. Well, then, how are we going to keep our railways running?

Great Power Wasted

I was born in the heart of the high Sierras, and so to me unusued energy inevitably has one outstanding aspect, water power, and its concomitant, irrigation, and I marvel today as I did 20 years ago, that we waste our precious birthright of fuel energy, while our great Western streams run for the most part unharnessed and destructive. Coal and oil are literally money in the bank, but our streams are unused energy, and in perpetuity.

It seems to me a fatuous pride that boasts of our material achievements of the last 50 years, when as a matter of fact most that we have accomplished has been at a bankruptcy cost. We have burned down our house to warm our hands. We have been the "Coal Oil Johnny" of the nations scattering in a few hours the accumulated natural wealth of ages.

And now the end of our priceless legacy is in sight. Our forests are dwindling and we have not replanted them. We can count the coal left in our cellar. We are already wondering what we are going to do for gasoline and for lubricating oil. Germany might have lost the war for want of lubricants. And yet we burn and burn and burn, while 50 millions of horsepower runs continually to waste. Gentlemen, that awful fire burning day and night should be put out. The great army of men who feed it should be disbanded and their energy, harnessed to that of the water and the soil, be turned from destruction to production.

Roughly, it takes 1,000 tons of coal per hour to develop a million kilowatt hours of energy. Disregarding the waste of irrecoverable coal, just consider the army of miners required to produce it. Yet three million kilowatt hours can be developed by the Colorado River alone in only 110 miles of its course. The same energy that the labor of one man produces by water, requires 16 men to produce by fuel. There's a 16 to one idea well worth our consideration.

Just think! In the United States this very 24 hours 43 million horsepower was developed with our precious fuel, while 52 million hydro-horsepower slipped by us unharnessed into the seas. And of the labor involved in this production, 15/16 was wasted. That waste meant roughly: Eight hours each for 10,000 men and this means interest on a capital of $300,000,000.

And even this takes no account of the fact that a large percentage of the transportation power of our railways is expended to haul coal for their own use.

A good prescription for national prosperity, I take it, is a proper balance between raw material, labor and capital. What account of this balance has our power development program taken thus far?

It is pretty widely agreed that the Pacific Coast is to be the center of the greatest drama of history. In that favored and portentous region lies 50 per cent of the potential hydroelectric power of the country. When we should be conserving and preparing this strategic region for its great destiny, we are wasting its resources and tearing down its defenses.

Power Problem Acute

In my own state of California we have one million horsepower developed and digested, and during the war this was all pooled by intercommunication and is now available at practically every point in the state. This is good. But we have at the same time three million of potential power not touched, and this is bad. The situation with us is acute. We are burning the precious oil which should be saved for our navy and marine, and still we are short of power. Our normal growth will absorb this entire four million in 15 years, and if the steam roads electricize, as they eventually must, it will all be needed in ten years, which is none too long a time to carry out such a vast development program. We can finance it—750 millions in the next eight years, but we must have back of us an enlightened public opinion and helpful federal and state legislation.

It must be remembered that private profit frequently does not coincide with social gain. The relation between the usefulness of a work and its remuneration is often remote. And since we cannot safely consider the care of society's needs as a by-product of individual enterprise, it behooves us as a nation to see to it that the way is made easy and not hard, when private or community capital seeks such essential and beneficent avenues as the development of water power, irrigation and flood control.

The Southwest is turning now to the Colorado River, where many of the best dam sites are within the Grand Canyon Park. It happens that the national parks of the West are mainly on the roof of the country where the great waters have their source and thence tumble idly to the valleys below. The beauty of these parks should not and need not be destroyed, but it is a poor conception of our duty to posterity which fails to utilize these streams for the development of a great and prosperous civilization.

Usefulness Pointed Out

In the case of the Grand Canyon of Arizona, its splendor and availability will be enhanced when we can not only gaze into that stupendous gorge from the two or three accessible points on its rim, but can also ride between its mighty walls for miles over beautiful lakes.

And, of course, when we harness these streams to our impulse wheels, we also make them available for irrigation, storing up their disastrous floods against the dry season when their waters are needed—a by-product which of itself is worth the entire cost, and is not less vital to our development.

In my lifetime I have seen the desert which Southern California once was blossom into the garden it is today, by the simple process of harnessing its wasted waters to the soil. When the Colorado River is reservoired it will irrigate three million acres of now arid land, transforming deserts into prosperous communities and adding immeasurably to our national wealth.

Here, then, lies at our hand, particularly in the West, the obvious first answer to the problem of harnessing unused energy. Water power, the cheapest known to man, clean, concentrated, inexhaustible so long as nature functions, the last word in prime movers; and its beneficent corollaries, irrigation and flood control.

These days will doubtless be known to history as the water power age, and will mark, here in America, the highest development of the human race. In this inspiring program, we contractors will play a leading part, for it is our hands that will buckle the harness to this vast energy. So it is fitting that we should take stock of ourselves.

Agricultural News Notes of the Pacific Coast

Northern California

Lodi grape growers report sale of Zinfandels at $140.

During the week of September 14-20 2906 carloads of grapes were shipped from California.

Tokay grapes from Lodi, San Joaquin County, have been bringing $2.27 per crate in Chicago.

Ralph P. Merritt has been elected president and manager of the Pacific Rice Growers Association.

Colusa County has determined to enforce the law against the overloading of trucks on county highways.

Civil service examination for forest rangers will be held October 25 at each forest supervisor's headquarters.

Olive growers of Placer County have formed a cooperative marketing association with Wm. F. Ketts president.

Short courses in animal husbandry at the university farm at Davis, which closed today, have been well attended.

A short course in dehydrating of fruit will be given at the farm school at Davis, November 28 to December 10.

The Placer County Herald chronicles increasing number of leases made to white farmers of lands formerly leased by Japanese.

Manager Inman of the Pacific Rice Growers warns growers not to contract their 1921 crop as prices are already advancing.

Manager Coykendall of the California Prune and Apricot Growers says that practically all of the 1920 crop of beans is cleaned up.

The state highway commission has called for bids on construction of the 18 mile stretch between Auburn, Placer County, and the Grass Valley road.

A public auction sale of state scrip will be held by Surveyor General W. S. Kingsbury at the state capitol, Sacramento, Monday, November 7, 1921, at 10 a. m.

The fall conference of the North Bay Counties district was held in Santa Rosa October 5, directors and advisers talking over plans for the fall and winter campaign.

The Central California Milk Goat Breeders' Association held an all day meeting at Berkeley October 8. Sessions were held in Hilgard Hall on the University campus.

Trinity County supervisors have asked the state fish and game commission to remove obstructions in Mad river which keep fish from ascending or to put in fish ladders.

County Horticultural Commissioner Ladd of San Joaquin reports that the heaviest plantings in fruit trees last year were of figs, 88,649 trees. There was also a very heavy planting of table and wine grapes.

Horticultural Commissioner Brosius of Sacramento County is making a careful survey of spread of Spanish measles in vineyards. Harry S. Smith of the state department of agriculture is cooperating in the work.

The Bodega Cooperative Hog Association, Sonoma County, met at Bodega Hall last Saturday. The officers are: E. H. Cheney, president; J. A. Gobbi, vice president; Tom Keefe, treasurer; John Comotta, director; R. T. Kee, secretary and manager.

Central California

The Stanislaus County Poultry Men's Association will hold a show at Modesto December 4-7.

A squirrel poisoning campaign has been completed in the eastern section of San Joaquin County.

The annual meeting and picnic of the Fresno County farm bureau will be held at Kearney Park October 27.

Watsonville, Santa Cruz County, hopes to secure one of the tractor schools conducted by the state university.

The Delano district of Kern County will plant 350 acres to lettuce to come in after the Imperial crop is off the market.

The quarterly convention of the Stanislaus County Farmers Union was an all day session at Patterson high school.

The Strathmore Cooperative Packing Company has its buildings nearly completed and machinery is being installed.

Farm home department meetings will be held in Kern County at Kern-Delta, October 25; Wasco, 27; Edison-Fairfax, 28.

Farm bureau meetings will be held in Kern County at Shafter, October 26; Arvin, 28; board of directors at Bakersfield, 29.

Mrs. Hope Baxter has been appointed home demonstration agent for Stanislaus County. She took up her work October 7.

The San Joaquin County Fair Association has decided to hold its 1922 fair the week before the state fair at Sacramento.

Pomegranates are going forward from the Lindsay district of Tulare County. The output of the district is estimated at 75 carloads.

County Horticultural Commissioner Currier of San Benito County has resigned his office and will act as entomologist for the San Jose Spray Company.

At the October meeting of the Stanislaus County farm bureau it was reported that Modesto's objectionable truck ordinance would probably be repealed.

The new Puccinelli dehydrator at Robertsville in Santa Clara County is being visited by many prune growers who are interested in the new method of drying their fruit.

A step in the solution of the problem of feeding and housing fruit workers during the orange packing season in Lindsay, Tulare County, is the establishment of cooperative dining rooms.

The Lindsay plant of the California Associated Olive Growers has passed into the hands of the Virden Packing Company. The Virden company will handle the association's output on a four year basis.

Students in dairy industry classes will send several judging teams to Portland at the time of the Pacific International, where they will compete with teams from other states in judging butter, cheese and milk products.

The California Associated Raisin Company announces that it now has signed contracts with growers for enough sweatbox hand sorted layers to fill its 1921 crop orders from the wholesalers and that no more contracts for making layers will be entered into.

Southern California

Yucaipa's apple crop is now estimated at 800,000 boxes.

The beet dump at Wintersburg, Orange County, will close within a few days.

Recent rains at Blythe made it necessary to suspend cotton picking and ginning.

The big walnut packing house at Puente, Los Angeles County, is busy on the new crop.

1,500 acres of pimientos are being harvested in the Garden Grove district of Orange County.

The next meeting of the Southern California State Supervisorial Association will be held in Los Angeles in April.

The Duarte-Monrovia Fruit Exchange estimates the coming citrus crop at 6 to 10 per cent heavier than last year.

The packing house of the American Fruit Growers at Anaheim reports tomato crop in that district only two-thirds of normal.

The retail merchants of Orange County are objecting strenuously to the activities of the recently formed farm bureau exchange.

Manager Hooper of the Carpinteria walnut house says the new grading equipment has enabled cutting force of employes from 20 to nine.

Prices of 1921 walnuts have been raised by the association. Opening price announced ten days ago on No. 1 Softshell, 24½ cents, now 27.

Local farm bureau meetings will be held in Imperial County at McCabe, October 19; Jasper, 21; directors, 22; Alamo-Verde, 26; East Side Sunset, 28; Acacia, 28.

A drainage bond election will be held in the Palo Verde Valley, October 28. The proposed district takes in practically the entire valley outside of Ripley and Blythe.

October 26 marks opening date of the campaign which Imperial County chambers of commerce are staging to encourage settling and planting of idle lands in the valley.

Supervisors of Southern California counties met at Riverside during the Southern California fair and organized an association which will enable closer working together of the seven counties.

Secretary Hathaway of the Ventura County Fair Association reports that 25,000 people visited the fair during the five days, and the surplus in the treasury will amount to some $20,000.

One of the first steps to be taken by the newly organized Southern California branch of the State Supervisorial Association is the adoption of a uniform truck load regulation for the seven counties.

Orchardists of citrus districts of Olive, Buena Park, McPherson and Tustin have organized to oppose plan of the Union Pacific to build a rail line paralleling the Southern Pacific. They say the road is not needed for transportation and it will destroy much valuable orchard land.

Arrangements are being made for the holding of a conference of the League of the Southwest at Riverside the last of November to discuss the big hydro-electric development now before California. The league hopes to have present Sir Adam Beck, head of the municipal hydro-electric power system of the Ontario project.

The Coast and General

Maricopa County, Arizona, will hold a poultry show at Phoenix November 9-12.

Tampa, Florida, citrus growers estimate the crop 5 per cent larger than last year.

Navel oranges are coloring rapidly in the Yuma Valley of Arizona, earlier than usual.

The third cutting of alfalfa is about completed in Utah and Idaho and good yields are reported.

Olive packers of Arizona report picking as getting a good start and the crop as generally good.

The Oregon State Horticultural Society will hold its annual meeting in Forest Grove, December 1, 2, and 3.

The Columbia, Oregon, Jersey club will exhibit a county herd at the Pacific International at Portland November 5-12.

Sweet potato growers of Jacksonville, Texas, have applied to the railroad commission for curing-in-transit privilege.

Lewis and Thurston Counties, Washington, are joining in a project to drain 700 acres in the Zenkler valley north of Centralia.

Up to September 23 shipments of cantaloupes from Colorado amounted to 2754 cars as against 1668 at same time last year.

The Florida citrus fruit season opened September 26 with grapefruit shipments. Oranges will begin to move about November 1.

Sweet potato growers of the Sylvania district of Georgia are planning to build curing plants and store their potatoes for spring shipment.

Faced with the problem of disposing profitably of their alfalfa farmers of Prineville, Oregon, have joined in purchase of two carloads of milk cows.

The Western apple crop is generally good, but poor in most other sections. A late infestation of coddling moth has made many wormy apples in Michigan.

Hop fields near Harrisburg, Oregon, yielded a crop of 2100 bales. Most of the growers sold for from 20 to 30 cents though some holding long contracts received 50.

The Clatsop County fair of Oregon was held on the new concrete dock at Astoria. The space occupied by exhibits was 160 by 500 feet and half of this was devoted to livestock.

Report of the Hempstead, Texas, Melon Growers' Exchange for shipping season shows receipts from sales $73,310.04. Of this freight charges took 54 per cent, or $39,246.40.

State engineer of Washington is making survey of the greater Wenatchee project designed to bring water from Lake Wenatchee to irrigate 50,000 acres of land in the Wenatchee and Columbia River valleys.

Hood River, Oregon, apple growers have had limits put on number of boxes of apples they may load on trucks passing over highways. Unrestricted loading during apple season last year ruined many stretches of roads.

Pasture on the desert ranges of southwestern New Mexico and southern Arizona have improved greatly under the influence of warm days and following recent rains. Pastures at high elevations have cured without injury from frost.

The Valley of Apples

By Ernest Braunton

YUCAIPA may not be a "Valley of Ten Thousand Smokes," for that many firesides are not yet present, but it is a valley of ten thousand acres of apples. Eight thousand of these acres are bearing today and the remaining acreage of young trees is of the best. This year the apple crop will be more than a half million boxes. In three years at present rate of increase it will be a full million boxes.

The one big leader in varieties is the delicious Delicious, but only because it happens to be the best. Other standard varieties thriving equally well are, in the order of their importance: Rome Beauty, Winesap, Arkansas Black, King David, Jonathan, Winter Banana and Rhode Island Greening. In addition to apples the valley grows many pears, principally Bartletts, and these have brought the present season from $90 to $100 a ton. On the lower levels and lighter soils peaches are grown in abundance. All the standard varieties are planted. The leading one is the Red Bird Cling, but of late the J. H. Hale is very popular. The Yucaipa people also claim to have the largest cherry orchard in the south end of the state and numerous smaller orchards. The principal varieties are Black Tartarian and Royal Anne.

This wonderful valley was a vast stretch of grain fields in 1910, with but two or three ranch houses, far apart, in the whole stretch of miles. In that year the Redlands and Yucaipa Land Company placed the first 5,000 acres on the market. Since that time they have placed 7,500 acres under water at high pressure so that one may enjoy all the aqueous comforts and conveniences open to city dwellers. There are 80 miles of steel pressure pipe and 50 miles of concrete irrigation flume. The valley is made available to traffic by 80 miles of graded roads, and the ocean to ocean paved boulevard constitutes the trunk line. The climate is most delightful for the altitude ranges from 2,600 to 3,000 feet. To care for the large and increasing apple and other fruit crops there are five modern packing houses well equipped.

No account of the Yucaipa would be complete without a record of what the local woman's club has accomplished. It has been the strongest influence in the upbuilding of the schools, in civic improvement and in the maintenance of a high moral standard of citizenship. It has built, or is now completing, a clubhouse that would be a credit to a town of several thousand inhabitants. To be sure gifts have been numerous but just sufficient to prove a stimulus to the membership's best endeavor. The land company presented two lots for a site and a contribution of cash. The husband of the first president and greatest upbuilder (now deceased) presented them with $1,200 worth of lumber, and when the building is finished it will be dedicated to the memory of this noble civic worker who for the last several years of life was the club's official head. But all these gifts did not buy or drive a nail, lay a brick or mix a pound of concrete. The women have never lost heart and now their labors are meeting with a gratifying response. Each year they hold a two-day festival, the proceeds of which go to the clubhouse fund. Last year it netted them $1,200; this year they anticipate still greater returns. The building must be finished, a wing built for a dining hall, furniture and equipment purchased and the grounds improved. But the Yucaipa Woman's Club is equal to the task.

Selling Cattle on a Cost Plus Basis

By R. P. Royce

DURING the last presidential campaign a New York paper referred to one of the candidates as being "an habitually indignant man," the remark being made in view of the pronounced opposition of this particular gentleman to the general plan of running the universe.

It now appears that the matter of being "habitually indignant" is not confined to the gentleman alone, but that one of our esteemed California agricultural journals is "habitually indignant" and chronically "views with alarm" the matter of public sales of livestock in California. Indeed, this particular journal appears to have become obsessed with the idea that unless the rank and file of California breeders hearken to its oracular pronouncements and permit this self appointed Moses to lead them up out of the bull rushes of complicated selling to the sunlit plains of success, the whole business of producing registered livestock will just about go to pot.

And be it known that this feeling is of no sudden development. For several years, at least, the idea has been germinating and from time to time various emissaries of this esteemed contemporary have worked themselves into a lather over the deplorable situation we have been blindly heading for. About every so often—with each change of the moon—some new sure-fire copper-riveted, air-tight, non-sinkable plan for salvation has been offered. These various activities have only mildly interested the livestock fraternity, but as yet the fraternity at large has not been greatly impressed for the reason that no one seems to know just what the paper in question wants. The attitude of the breeders appears to be one of expectancy, i. e., they hope that sometime their self-appointed guardian will come forward with a definite and demonstrable plan that is better than the plan now in general vogue. Several times, after much preliminary heralding, it has appeared that at last, and after all, and finally, the way of the California breeder was about to be made smooth—but alack! just as they were about to reach out and fold the new plan to their heaving bosoms something always happened. The plan blew up or else scrutiny of its innards indicated that it held nothing but a revamped model of the plan already in successful operation.

As a matter of fact the majority of breeders—especially men selling or buying at public auction—have long since reached the conclusion that the motive actuating the paper most active is not any deep seated desire to aid in the upbuilding of the business so much as to bring about some sort of change where it might secure greater control of the selling organization. This idea is strengthened by the knowledge that on at least two occasions strenuous efforts were made to set up a new organization for the conduct of sales. Each time the effort was repudiated by the breeders approached.

For a time the burden of their lament was to the effect that the plan of selling livestock through a central organization and on a uniform plan was all wrong—notwithstanding that the plan had been formulated by the breeders themselves. It was argued that each breeder should undertake the details and conduct of his own sales as is the general practice in the East. Later they appear to have tentatively O. K.'d the California plan, at least they endeavored to organize a selling organization along the lines of the pioneer California company. Still later a plea was put forth for the establishment of a company to handle only beef cattle sales, arguing that specialization was the correct order. Later they were found backing a proposition to divorce the sales comapny from any particular breed. Still later they came out for a plan to have a breed association take over the sales company claiming that only through such a plan could proper promotion work be carried on. The most recent proposal is for the organization of "a cooperative sales organization for all the breeds, operated at cost and turning back to its member associations any sums above costs derived from sales" which "would in a short time furnish substantial sums for specific breed promotion work." And in a final plea they say, "Give us one big cooperative selling agency embracing all breeds, operated for the sale of pure bred livestock and turning its earnings back for promotion work; then watch us grow."

The humor of the latest proposal lies in the fact that after several years of being habitually indignant this esteemed contemporary bursts forth in a plea for something California breeders have had all along and something everyone realized save this habitually indignant paper. For be it known that the California Breeders' Sales and Pedigree Company of Sacramento, the agency which handles the majority of our registered cattle sales, is in fact a big selling organization embracing all breeds, operated for the sale of purebred livestock and which as announced last year will in the future return its earnings to the men selling livestock.

The esteemed paper goes further and demands "a sales manager hired by and the hired man of said board of directors who will attend to this job and do nothing else." Accommodation should not be difficult on that point because the sales manager of the California Breeders Sales and Pedigree Company is hired by and is the hired man of the board of directors and attends to his job, most efficiently too, and does nothing else—and thereby sets a commendable example for many folks.

The writer for the esteemed contemporary coyly admits that all the details of his new plan have not been worked out, as a matter of fact one rather gets the notion that he is vague to the point of not knowing just exactly what he is talking about. This notion is further strengthened after reading farther into his article to the point where he declares that we have all been wrong in rating a sale a success or failure according to the average price obtained. By the Holy Pink Toed Prophet of Cappy Ricks, what other sound, sensible or rational method remains? Why shouldn't a man selling livestock or anything else insist upon getting a good average price? Who sets the average, anyway? Not the seller, but the buyer. And are buyers not supposed to be endowed with brains and the knowledge of how to use them? Is it the opinion of our contemporary that California buyers are so infantile in judgment as to need a patronizing mentor to run their business?

As if the above was not enough to evoke hilarity, hear the next suggestion, "Isn't it about time for cost-plus to cut some figure in our attempt at average prices?" Isn't it!

Can any level headed livestock man conjure up a cost-plus plan? Talk about the intricacies of the income tax! It would be child's play compared with figuring the value of a well bred animal as compared to a plain sort. Fancy, for example, the auctioneer about ready to call for bids. The owner rushes forward saying, "Just a moment, Mr. Auctioneer; before starting this bull I want to say that by reference to my books I find that to date this bull has cost me $339.72 and I'll have to get cost-plus ten per cent else I'll lose money." About that time the son of the seller, who is really the expert accountant of the ranch, interrupts his dad to remind him that the figure just quoted is entirely too low and was, in fact, the cost up to and including the middle of last week, and since that time, due to the increased cost of gasoline, repairing two punctures in the family flivver, a can of oil for the separator and the fact that this durn calf was responsible for knocking three boards off the bull corral, which expenses have all been duly prorated, the present cost of the bull will stand them $341.13, and if a cent less is taken the banker will foreclose. Fine business, that. No wonder the details of this cost-plus business have not been worked out.

Seriously, though, the livestock breeders of California, in view of the fact that they know that their business is on the soundest basis of any state in the Union; that they themselves are receiving satisfactory prices; that the buyers are protected to an extent not to be found in any other section, are getting just a trifle tired of being constantly importuned to listen to suggestions as to how to run their affairs by men who offer nothing constructive, who advance no sound reasons for a change other than that they are not personally satisfied with the manner in which things are run, who urge them to accept less than their cattle are worth and charge the difference up to sweet charity, and who advocate such an astounding proposition as to sell cattle on a cost-plus basis.

(Continued on Page 429.)

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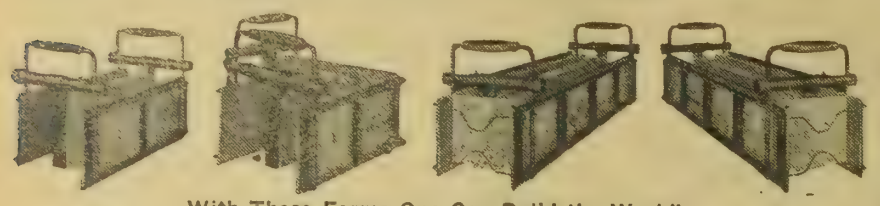

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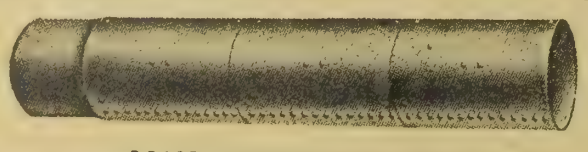

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Biological Control of Insects

CITRUS growers spend half a million dollars fighting scale pests of citrus orchards, so Orange County growers propose to make bug eat bug. A recent meeting taking steps to secure establishment of an insectary under direction of the state department of agriculture resulted in definite action and an account of the meeting is taken from the Santa Ana Register.

That 60 days at the most will see the establishment in Orange County of an entomologist at work to establish scale control in Orange County groves was the opinion expressed today by fruit growers all over the county who attended yesterday the fruit growers' conference at Fullerton.

Between 30 and 40 growers from all sections of the county were present at the conference, which was held at the Placentia packing house, with Farm Advisor H. E. Wahlberg presiding. J. H. Lang of Fullerton was appointed chairman and called for reports on aphycus control from various citrus growers who had liberated aphycus in their groves with wonderful results.

Following these reports and the discovery that those present were unanimous in their sentiment that a county insectary should be established, a committee was appointed to work out problems of establishment with full power to act on any conclusions reached.

This committee, composed of C. E. Utt, Tustin, chairman, and C. L. Crumrine, La Habra, secretary; D. Eyman Huff, Orange; Dr. I. G. McBeth, manager of the Bastanchury ranch; William Berkenstock, Placentia; Willard Smith, Villa Park; C. V. Newman, of the San Joaquin Fruit Exchange, and S. C. Hartranft, Fullerton, went into session immediately after the general meeting.

At that conference the plan suggested for financing the proposition to establish an insectary and for employing one well qualified entomologist to have full power in the county, was that each box of fruit shipped in the season should be assessed one cent, which, based on the assumption that an average citrus crop would equal that of last year, when 4,000,000 boxes of fruit were shipped, would yield the sum of $40,000 to carry on the year's operations.

Figures were given proving that $500,000 was spent last year in fumigating alone and an equal amount in overcoming the damages resulting from fumigation. These figures were a great factor in deciding the growers and shippers unanimously to approve the proposed plan. Some asserted that they would welcome an increased assessment in order to get the project launched.

The experience of the Limoneira ranch, Ventura County, was described. There the black scale has been under control for two years by means of aphycus, and the entire expense had been $7000 as opposed to $15,000 yearly for fumigating. These groves are now commercially clean. The Santa Paula Fruit association established insectaries a year later by the one cent a box assessment plan, and is finding the venture a success. If the same plan is put into effect in Orange County, it was stated the assessment plan would be presented to the independent growers and speculative buyers as well, with a view to interesting them and the growers they represent.

The committee has the names of four able men under consideration for the place as entomologist, and members are pursuing investigations of these, with a view to reporting at the next committee meeting to be called by the chairman. It is the intention to employ the best man available in the country, one whose technical knowledge and business ability have been tested, and he will have entire control of the situation in the county.

A comprehensive report of all that has been done, together with the needs of the county and the necessity for prompt action, will be submitted to the growers and the general public in the near future, after which definite steps will be taken at once, unless some unforseen difference in opinion arises among the growers' associations. That this is unlikely is the opinion of D. Eyman Huff, committeeman, who declared that Orange County fruit growers' associations and all citrus growers were a unit in favoring the proposed plan.

Walnuts Up

Prices were no sooner made by the Walnut Growers than the trade placed orders for vastly more than the whole crop. The association accepted orders for 85 per cent of the crop, then for the remainder made a 2½ cent advance. In a statement to the trade the association says:

"We alloted and sold at our opening prices 85 per cent of our estimated season's output. You may imagine our surprise when every broker on our list not only confirmed his full allotment but requested tremendous increases. In fact with an estimated crop of 310,000 bags the legitimate trade demands, as evidenced by orders submitted us at the opening, were for 782,000 bags. Naturally we couldn't confirm nearly half of the business offered. The trade's requirements were well over twice as heavy as in any previous season.

"We immediately realized that with all of our brokers having to reduce their customers' orders there would be some buyers who simply had to have additional goods in order to fill out a minimum car to certain one car markets, others to take care of opening price orders they had absolutely committed themselves to accept and which were in excess of their allotment. Therefore in order to serve the class of customers who absolutely had to have additional quantities we were forced to advance our price on our second allotment to a figure higher than we desired. Otherwise the demand would again be so excessive that we could not commence to meet it. But even at the 2½ cent advanced price the orders submitted were four times as great as we could care for. Consequently we could give our trade only 25 per cent of what they needed on the second allotment. Our second allotment absorbed all goods up to a safe estimate of our crop. If our crop overruns estimates we will have a slight additional quantity to offer later. If the crop does not overrun estimates we are through for the season."

SECOND FRUIT SHOW AT THE UNIVERSITY

On November 17-19 the Second Annual Fruit Show of the horticultural round table of the college of agriculture, University of California, will be held. The enterprise is being handled entirely by the students of the division of horticulture. No cash awards will be offered, but ribbons will be given for first, second and third places in each variety and class. The first show was very successful but it is hoped that this year a larger and more varied exhibit will be available. It is desired to have exhibits representative of all sections of the state, and more particularly to interest growers in the show. Specimens sent for the show will be much appreciated. With excellent cold storage facilities at the college most fruits shipped now can be kept in perfect show condition for exhibition in November.

Address all containers to Division of Pomology, University of California, Berkeley, California. Mark packages "Fruit for Exhibit."

In conjunction with the fruit show a short course in deciduous fruits will be conducted by the division of pomology. It will embody lectures and demonstrations upon phases which can be illustrated with the materials on display during the fruit exhibit. The program will be of interest and value to both amateur and commercial fruit growers.

AVOCADO DAY

Saturday, October 22, will be Avocado Day at the Fruit and Flower Show. The afternoon will be given up to an educational discussion of food values, use of avocado in other countries, and general avocado information. The speakers will be George H. Hecke, R. W. Hodgson and J. Eliot Coit. The program will begin at 1:30. The official nurserymen's banquet will also be given by the Avocado Association. It will be held at the Ambassador Hotel, Saturday evening at 6:30. Avocados will be served in all forms from soup to nuts. After dinner speeches will be made by representatives of horticultural associations of California, and it is hoped the representatives of state and national governments will also make talks. Plates will be $2.50 and reservations should be made through Miss McNally of Altadena.

Avocado Exhibit

Besides being the big feature on one day of the fair the avocado proposes to take a big share of attendance at the fair every day from Thursday, October 20, to the closing of the fair on October 26. If possible the members of the association will serve avocados at the association exhibit which will be in the big tent at south end of the Armory Hall in Exposition Park.

Officers of the association are: President, W. L. Hardin; vice-president, A. F. Yaggy; treasurer, J. M. Elliott; secretary, R. Agnes McNally, Altadena. Directors: Chas. D. Adams, A. Ellis Barron, E. W. Camp, W. L. Hardin, Wm. Hertrich, S. W. Jamieson, Dr. W. R. Manning, R. M. Teague, A. F. Yaggy.

AVOCADO SOILS

Nearly all standard varieties of avocado trees thrive on soils ranging from very sandy to very stiff adobe. But the time of maturity or bearing varies much. William Hertrich has planted the standard varieties on the Huntington estate on a considerable range of soils. All fruit from two to more years earlier on the heavier soils. But those on the lighter soils go on growing at a rapid pace, while their sister trees are bearing, so that after a specified lapse of years the non-producers are much larger. They have not yet been observed a sufficient time to be able to determine in which or what soils the heaviest crops are produced. If those in heavy soils also bear heaviest in future years there is no problem or puzzle. But if those on sandy soils eventually and consistently bear the heavier crops, what then?

WARRING COOPERATORS

The California Prune and Apricot Growers wired Attorney General Daugherty today protesting against any modification in the packers' consent decree which would promit the "Big Five" meat packers to handle and sell other food products, and California fruit products in particular, in addition to their meat business.

The association's wire reads: "Referring to request for modification of packers' consent decree claimed to be asked by cooperative fruit interests of California, the California Prune and Apricot Growers Association, a cooperative organization with a membership of 11,000 growers in the state of California, protests against any modification of said decree as not being in the best interests of producer, consumer or distributor."

Two carloads of onions were recently sent from San Joaquin County to Havana.

SELECTION OF AVOCADOS

There is great need of selective work being done with standard varieties of avocados. In no variety is this need greater than in the Spinks. The large size of the seeds in some fruits has been a marked objection to this variety which in other respects stands close to the head of the list. Vigorous trees of heavy bearing quality, with large, uniform small-seeded fruits should be selected through close observation, and such trees only used for buds and grafts. In this way this, or any other, variety could be very materially improved, although, because of its many excellent qualities, the Spinks will be extensively planted. In the writer's list it has always stood second, only the Fuerte being more desirable for orchard planting or home garden.

Another point of interest is the season of ripening. In Mr. Spink's large original planting at Duarte there are ripe fruit of the Spinks variety every month of the year, but not on one tree. Yet again is selection promising on another point. Some of the trees produce fruits over a much longer period than others. Some ripen their fruits months earlier than others, so that in future years we should have "Early Spinks" and "Late Spinks" as distinguished from the main crop. But the selection of trees for propagation that bear small seeded fruits is the greatest need. There are enough large trees on the home ranch at present to present a sufficient field for this most necessary work. One other point of great interest in this variety is that the first seedling from the Spinks variety is now fruiting and the fruits are as smooth skinned as any Mexican seedling. It is possible that the seed parent flower may have been fertilized with pollen from a Mexican seedling through the agency of a bee or other insect, but as the Spinks is very thin skinned the writer leans heavily to the opinion that the Spinks, like the Fuerte, is a hybrid.

STANDARDIZATION OF EMPEROR GRAPES

On Monday, October 3, the standardization bureau of the department of agriculture held a meeting at Dinuba with some of the principal shippers of Emperor grapes. A good deal of discussion has been going on ever since the opening of the shipipng season in an effort to arrive at standards for grapes packed in drums and kegs. It is agreed by all that grapes packed in sawdust for storage should represent only the very best in quality and condition and that inferior or medium class stock should be shipped in crates or lugs and disposed of promptly. The meeting was conducted by F. W. Read. It was decided to omit grading this season and instead to use the state shipping point inspection service on every car so that the quality and condition of the grapes could be accurately described on the inspection certificate and sales made on the strength of such description.

A committee was appointed to carry on further investigations as to the proper requirements for grapes to be packed in drums and kegs. This committee will meet with officials of the state department from time to time and formulate a grade which can probably be made effective next season. The personnel of the committee is as follows: Dr. G. A. Hare, Fresno; Martin Gilbert, Reedley; Dr. J. A. Moore, Dinuba; George G. Hobbs, Dinuba; Fred Moore, Dinuba; R. L. Perry, Dinuba; Clarence L. Fraser, Dinuba.

ANNUAL GRAPE REPORT READY

The annual grape report is now ready for distribution and will be mailed to the growers whose names are on the list of the viticulture service. Those not on the list can obtain a copy by addressing a request to the Viticulture Service, State Department of Agriculture, Sacramento, California.

In the main this report deals with the present status of the California grape industry. Comments on this subject and statistics relating to the 1920 grape crop, and foreign imports of grape products which come into competition with grapes and raisins of California, furnish very interesting reading for grape growers and all those who are interested in any way in grapes, whether horticulturally or commerically.

The California Bean Growers Association will meet October 29 to determine whether the association has sufficient support in the state to continue its activities. Campaign for contract signers is now being pushed.

MINUTE SOIL ORGANISMS

Farmers must depend upon the presence of minute organisms in the soil in order to get the best growth in certain legume plants.

On the roots of all plants are found small lumps or nodules which contain the small bacteria needed to take the nitrogen from the air for the life of the plants. Fortunately California soils contain a good supply of these bacteria, except possibly where new plantings are some distance from older fields or gardens.

When in doubt as to the need of artificial inoculation look for native legumes growing in the field or garden. If nodules are found on the roots of burr clover, then the soil is already inoculated for alfalfa.

Over 88,000 pounds of squirrel poison were sold in Monterey County during the 1920-21 anti-squirrel campaign, and for sales of poison, carbon bi-sulphide, etc., the county horticultural commissioner's department collected $11,592.20.

AN APPRECIATION

Regarding the pest fighting number of the California Cultivator of September 24, H. B. Waldron, proprietor of Bonnie Doon Ranch, Hayward, writes:

"In handing you our subscription for another year we are adding an additional 25 cents for which please send us a copy or two of your last issue (Sept. 24th) which should have been printed on vellum rather than on ordinary paper. Let me ask why you do not issue this fine collection of pest control formulas on a large sheet of cardboard that can be tacked on the wall. The state department of agriculture would indeed be doing a great kindness to every orchardist if it would place an order with you for five hundred thousand for general distribution throughout the state."

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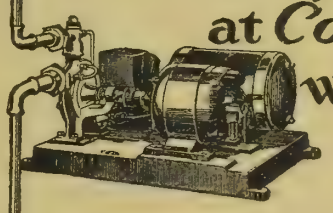

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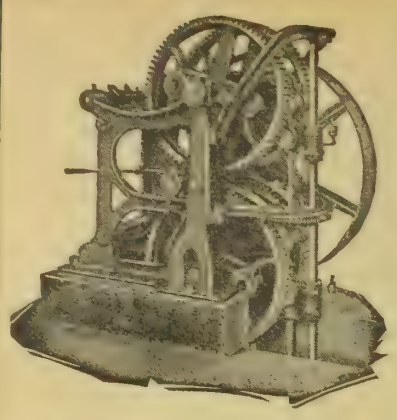

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Just Grass

By H. L. Musser

WITH the ever increasing demand in California for livestock (cattle, sheep and hogs) there is a greater need for more forage. With the rapidly decreasing range the forage question would seem a serious one. The question is not one of acreage as there is far more acreage lying idle than under cultivation; idle for some reason or other but not necessarily for lack of grass; there is grass for every condition of soil and climate.

If you have damp land there are many good palatable grasses and clovers that will grow on it. If you have alkali plant Melilotus alba, Rhodes grass, Sudan grass and Australian salt bush (Atriplex semibaccata). If you have rich level farm land with abundance of water for irrigation you need scarcely ask the question, "What shall I plant?" You may plant anything you wish for your stock and expect maximum crops. But it is the dry desert range that needs the attention of scientific investigation and cooperation among the stockmen.

We hear the expression of "run down ranges" and of "reseeding the range," etc. The natural range abounds in gramma grasses and edible brush, this in spite of the fact that all the herbaceous animals since Noah turned them loose have been destroying the good and leaving only what they did not want and what they could not destroy.

Our stockmen have turned their cattle loose on the range until there is nothing left for them to live upon except during the short season following a normal rainfall, and when there is no rainfall there is a famine. The remedy for this is (1) Cooperation among stock men or government control in order that the range may be divided into sections and pastured in alternate years. (2) Systematic reseeding. The native grasses reseed themselves if given a chance. But foreign grasses may be established if the proper method is found. Broadcasting seed has not proven satisfactory. The reason may be found in the statement that "raw land must first be broken in." Therefore, wherever possible there should be devised some method of "breaking in." Another solution may be found in the fact that many seeds grow readily in burnt off lands. Smilo is one of them and a good one for either the dry mountain or low land range. We would not suggest burning up the desert in order to sow Smilo but would it not be feasible for stockmen to contribute to sowing seed of Smilo and Melilotus alba where thousands of acres have just been burned over?

This has proven successful and will no doubt again. There are grasses that will reclaim the desert that need only a demonstration to prove it. Either the stockmen or the federal government should make this demonstration and in doing so produce enough seed to meet all demands. I can think of no federal project that would prove more remunerative to the government or more beneficial to the public.

Replacing Peach Trees

In the issue of October 8, (page 374) is inquiry from Turlock as to renewing, or rather replanting, peach trees which were dying in 14 year old orchards. The soil is possibly infected with fungus spores and other conditions are not the best for replanting a growing tree in same site. We answered as best we could then asked subscribers to come back with suggestions. They have come and here are some of their suggestions:

George S. Knight, Modesto

I had a good deal of experience along that line in the Santa Clara Valley. Pull the old trees as early in the fall as possible, digging the dirt away for two or three feet all around the trunk of the tree and deep enough to get out as many of the old roots as possible, then pile the holes full of prunings or any rubbish that will leave a good bed of ashes and let the rains leach them until planting time. If not enough brush to fill all the holes, scatter a good coat of slacked lime (air slacked will do) and let the rain do the same to it. I have had good results with all kinds of trees in that way with the exception of cherries. When planting the young tree fill in around the roots with fresh dirt from center of rows and you can put the old dirt on top. Don't put any fertilizer or manure in the hole.

William Honegger, Vacaville

After we had removed the stump and main roots of a tree we proceeded to dig up the smaller roots, following some for two to three feet. After all the roots are thoroughly removed the hole should be about four feet deep. Then we let it lie until spring. In the spring we took a scraper and filled the hole completely with top soil, then we planted our trees. The main point is to get out all the roots thoroughly and put in new soil as the old soil may be infected more or less with the diseased roots. If this is done I see no reason why the young trees should not grow in spite of the old trees. Ours grew and then some.

F. R. Weidenmueller, Anaheim

I would pull or dig out the dead or dying trees, leave holes open for aeration until ready to fill up to the very top with virgin, or nearly so, soil well firmed by trampling as may be (having previously cleaned out holes good and plenty), then get well grown, healthy trees with abundance of roots and on, preferably, the Tennessee seedling peach root, if obtainable, and soon as time comes so to do, plant them, roots well puddled and never for a moment allow to get dry up to that time, in most approved manner and properly cut back for a low head, giving young trees every chance for good start by frequent and thorough hoeings (whether under irrigation or not). I would protect them against sun, wind and vermin by whatever material is handy, be it nothing but newspaper; this would encourage buds on south, hot sides of trees to put forth that otherwise might dry up and never put out, assuring a much more symmetrical head to start with. Then, and this is the most important, the one great essential part of the program, I would sever the roots of remaining old trees about midway between rows in both directions at right angles, using a subsoil or a common 1 inch plow. Plow out a deep dead furrow and wide so as to go deep enough to cut any root that might encroach upon the moisture and plant food so essential to the young trees. Then I'd fill up again with plow and plow the whole orchard in regular fashion. I would not hesitate one moment cutting roots no matter how large, the larger the more necessary to be cut for the good of the young trees. Root, as well as top, pruning is invigorating and vital to the health and longevity of fruit trees. Anyway the sole object is to best establish young, helpless trees among a lot of old, greedy vets. The above outlined procedure will bring desired results.

H. B. Lehman, Glendale, Arizona

We have an old orchard in which trees have been dying six or eight years and we have been resetting young trees where the old ones died with no success. It made no difference whether the young tree was close to old trees or four to six rods away. We even dug large holes and got new ground from a ditch bank, ground that came out of the ditch from cleaning it. The trees would grow one or two years and then die. Two years ago one tree made a big growth, say limbs four to six feet long, then last year not one leaf came out. Apple trees the same, also umbrella trees.

(The conditions described by our Arizona correspondent are so common than in answering the question in the first place we suggested that possibly

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the fungous and other troubles which may have affected the roots will exist in the soil for a longer time than the few months referred to and this might prove a determining factor in the success of the newly planted trees. If possible to rotate and put in alfalfa or potatoes or some other crop for a few years we believe the orchard could be made over into another orchard probably of great value.—Ed.)

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Veterans Aid

Can a man who served in the regular army for 15 years and during the last war was on detached service at Monterey, be entitled to the opportunities offered to ex-service men of California? I have settled in California since August, 1920. Is such a person entitled at the present time to vote without registration in California?—Subscriber, Hynes.

The veteran acts of this state define a "veteran" as one "who received an honorable discharge from the United States military forces and was on active duty therein in time of war and who was at the time of his enlistment, induction, commission, or drafting, a bona file resident of California" As the subscriber was undoubtedly a resident of some eastern state he would not be entitled to participate under the terms of this act. In order to vote it is necessary that he be a resident of the state at least one year and in the county 90 days. No person is entitled to vote without registration, no matter how long he has resided in the state.

Clear Off Mortgage

Two parties own a house together. One, with the consent of the other, mortgages the house for money borrowed. Both sign the mortgage, the one obtaining the money giving the other an agreement to pay the mortgage. He, however, fails to pay and the other wishes to clear the mortgage and still retain his undivided half. How shall he proceed?—Subscriber, Santa Maria.

Each is, of course, liable for the total amount of the mortgage. The party desiring to clear the property should pay the mortgage and take an assignment thereof. He then stands in the position of mortgagee and is entitled to enforce the lien of the mortgage against the property or require the mortgagor to pay. If the property is sold on the mortgage foreclosure plan then he is entitled in any event to obtain contribution of the amount, if the complaint in the action is properly framed.

Line Fence

I wish to build a line fence, pay for it myself and retain absolute title. How can I always show that it is mine?—Subscriber, Vacaville.

If the fence is built upon your own property at your own cost and expense, it is unquestionably your own fence and no one would be entitled to obtain any interest therein except with your free consent. If you keep the receipts for labor and materials, it would, of course, aid materially in establishing the fact that it was your own fence, if the question ever arose. It would make no difference as to the manner of building the fence so long as it is entirely upon your own property.

Road Right

I purchased 30 acres of land which was rented to adjoining neighbors. Many years ago there was a road into this land but traces are nearly lost. These neighbors now refuse permission of ingress and egress. What should I do?—Subscriber, Windsor.

Two methods are apparent. One would involve the tracing back of the history of the old road to and from this place, and if it was a practicable road dedicated to public use you would be entitled to have it re-established. The other means is what is termed as the "right of necessity," which would involve the tracing back of the title of this land and that of the surrounding land. This rule is based on the fact that it is presumed that a grantor who sells land surrounded by his own land grants also a right-of-way to the vendee over his own land and in the same way retains such right-of-way over the land which he grants. In either event a detailed inquiry into the history of the land would be necessary for a correct answer.

Right to Redeem Lots

I own property upon which I gave mortgage and sold lots to a party who would not assume the mortgage. He failed to pay the interest, the bank foreclosed, and the lots will be sold. I intend to buy the lots at the sale. Has the party to whom I sold a right to redeem the lots within a year?—Subscriber, National City.

Parties who are entitled to redeem property are, first, the judgment debtor or his successor in interest in the whole or any part of the property; second, a creditor having a lien on the property sold, or some part thereof, subsequent to the lien under which the property was sold. As you granted this property to the buyer he is thus your successor in interest and would be entitled to redeem from the mortgage sale.

Liability of Bondsmen

A bond was given on appeal to the superior court. The case was dismissed because filed too late. Can action be taken against the bondsman?—Subscriber, Imperial.

The condition of the bond under the provisions of the statute are that the bondsmen agree that the appellant will pay the amount of the judgment appealed from and all costs if the appeal be withdrawn or dismissed or the amount of any judgment and all costs which may be recovered against the appellant in the superior court. It will be seen that as the appeal has been dismissed it comes exactly within the provisions of the statute if the bond was drawn in conformity therewith.

Loans to Soldiers

I was born in Ohio, enlisted in Utah, and was transferred to the 143rd Artillery, from which I was discharged physically unfit. Am I entitled to a loan under the California law?—Subscriber, San Joaquin.

The California acts are made for the relief of veterans who at the time of their enlistment, induction, commission, or drafting, were bona fide residents of the state of California. Unless you were a resident of California you are not entitled to relief under these California statutes. If you were a resident of Utah it would probably be that you are entitled to relief under any act which may have been passed in that state.

Blue Sky Laws

What are "Blue Sky Laws"? In what states do they exist, and are they enforced in this state?—Subscriber, Buellton.

The purpose of the blue sky law is well defined in the title of the California act wherein it states that it is an act to provide for the regulation and supervision of companies, brokers, agents, and sales of securities, as the same are defined in the act; to prevent fraud in the sale of securities, to provide for the enforcement of the act, penalties for the violation thereoff; and the creation of a department and commissioner to deal with business arising under the act. These acts have been passed in a large number of states in the Union and the act is very carefully enforced in this state.

Placing Child in School

I have taught my child according to the regular course of study at home. He is entitled by his education to enter the third grade but the teachers and principal will not permit him to go beyond the second grade, stating that I had been forcing him. He is wholly uninterested in the work which he has gone over many times, and I fear that he will dislike school. How may I require him to be placed in the

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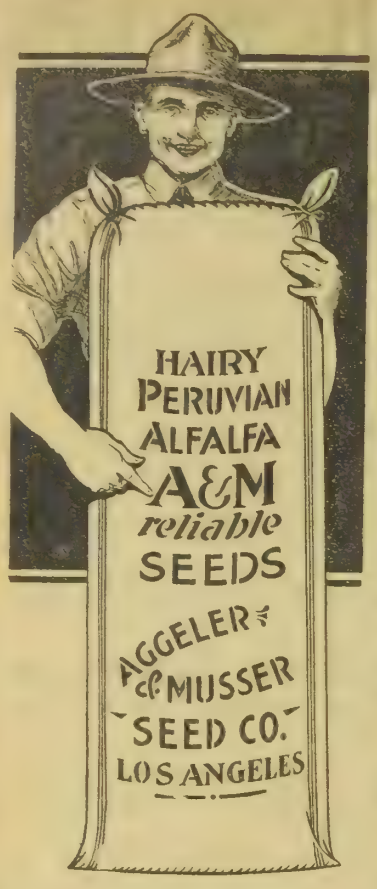

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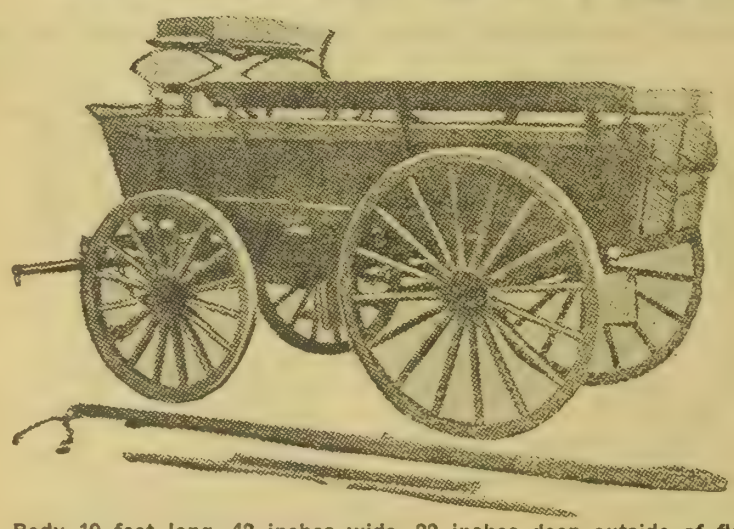

Body 10 feet long, 42 inches wide, 22 inches deep outside of flare boards. Additional 10 inches for flare boards. Genuine Sarvin wheels with 58 inch by 3½ inch steel tires. Front wheels 45 inches, rear wheels 54 inches. Spring seat. Complete with tongue and doubletrees. Foot lever brake, with tool box under footboard.

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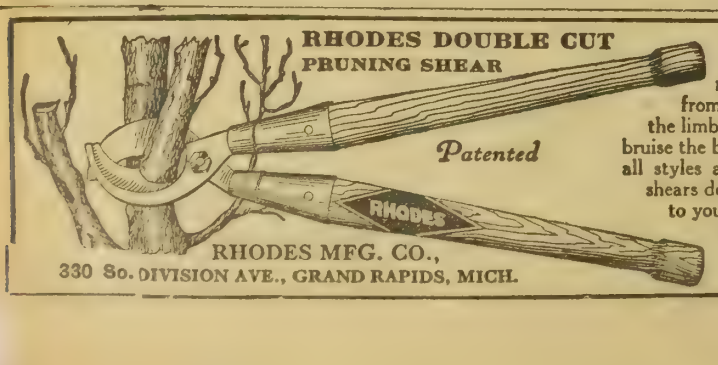
SURE DEATH

Is a chemical combination to eradicate the most feared insect pest, "Mealy bug." It may be used on trees, shrubbery, rose bushes, vines and house plants of the tenderest nature without injury.
It is also excellent for control of Red Spider, Thrips, Aphis.
Indorsed by Beverly Hills Nursery Company, Beverly Hills, California, J. J. Reeves, Superintendent.
Sold in condensed form for use of Nurserymen, Florists, and Orchardists.
13¾ ounce can $1.00 (5 gallons of water)
27½ ounce can $1.25 (10 gallons of water)
8 pounds 4 ounces can $3.50 (50 gallons of water)
Also put up in Liquid form ready for use. One gallon can $1.20, and 5 gallon cans at $2.50 F. O. B. Los Angeles.

Los Angeles Insecticide Works

2020 West 12th Street

Los Angeles California



THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. All shears delivered free to your door. Write for circular and prices.

RHODES MFG. CO.,
330 So. DIVISION AVE., GRAND RAPIDS, MICH.

proper grade according to his education?—Subscriber, Roseville.

If you have exhausted the teacher and principal you should probably take the matter up with the county superintendent of schools. The final jurisdiction in all school matters, of course, resides with the board of trustees.

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Grass with Oats and Barley

What grass seed would you advise sowing with oats or barley for hay? If advisable what proportions of seed should I sow?—Subscriber, Chino.

We know of no grass seed which might be sown with oats and barley for the purpose of making hay though some growers have sown vetches or other leguminous crops with the cereals. Oats or barley, especially the latter, is often used as a nurse crop for alfalfa, and the first cutting of alfalfa and grain makes a very good hay. Some think that the keeping down of weeds and protection of alfalfa from frost is sufficient compensation for the amount of moisture and nourishment taken away from the alfalfa by the nurse crop. Where planted in this way it is necessary to seed in most sections of the state during this month.

Sweet Potato Vines for Feed

Could you give me relative value of sweet potato vines for cow feed compared to alfalfa, also the best way to handle them?—Subscriber, Hynes.

We are unable to turn to any analysis or estimate of value of sweet potato vines as feed. The small or cull sweet potatoes are very valuable, especially for feeding swine which will harvest their own crop. Henry's "Feeds & Feeding" suggests that sweet potatoes may be substituted for half the corn ration. The same book says: "The vines, though difficult to gather because they trail and take root at short intervals, are often utilized for feed, usually in the green state." We would suggest the careful saving and feeding of these vines even if they do not possess as high feeding value as does alfalfa.

Possibly Mealybug

Honeydew is doing great damage to my Malaga grapes. I hope you will assist me in relieving this deadly disease. —Subscriber, Selma.

Possibly this is grape mealybug, one of the most serious pests affecting that industry. See Mr. Howard's suggestion as to handling this pest on the cover page of the California Cultivator of October 8.

Killing Eucalyptus Stumps

How can I kill eucalyptus stumps? Will arsenate of lead do it? Please tell me just how to use it. Saltpeter has been suggested by one party. I have a large number of stumps that I wish to kill out without the expense of grubbing.—Subscriber, Seeley.

Yes, arsenate sprayed over the leaves will perhaps end their existence, but why go to such great expense? A man with either an ax or mattock will kill or at least discourage the growth on these stumps much faster and cheaper than can be done with chemicals. If the stumps are attacked before the growth becomes large and woody and while the old stump is struggling to get sufficient leaves to support life, it is a serious shock to have these few leaves quickly removed. Of course they will start again, but a similar operation a few weeks later takes but a minute or two to each stump. As to saltpeter we think it would have but little value in killing the stump, but if large hole is bored down in the top of it and this filled with the saltpeter it permeates the wood and makes it combustible so that later when the stump is entirely dead a fire built alongside of it will sometimes consume to the ends of the larger roots.

Keeping Apples

I would like to know a good way of keeping apples for winter use.—Subscriber, Downey.

We have never seen it tried in California but it has often occurred to us why is not the good old Eastern way of storing apples in a covered pile in the orchard satisfactory? It would certainly keep them cool, and if covered as deeply with straw and dirt in order to keep out the warmth as they are covered in the East to keep out the cold we believe they should keep very satisfactorily. Have any Cultivator subscribers tried it? The method in the East was to place deep layer of straw on the ground, pile apples in a pyramid, cover with straw and then in turn cover the straw with the surrounding soil. We have seen them covered to the depth of two feet. The digging out of the dirt for the covering makes for perfect drainage of rains away from fruit and an even temperature is assured. Of course storing on racks in cellar is another method while the best method of all is cold storage where temperature may be kept around 35 degrees.

Net Weight of Milo

Answering a question as to net weight of milo, Geo. W. Hendry, assistant professor of agronomy at the state university, writes: "We have found that the difference in weight between milo heads as cut in the field and the threshed grain obtained therefrom depends upon several factors as follows: The length of stalk attached to the head when cut, the percentage of moisture contained in the heads when cut and weight and the completeness of filling of the kernels in the head. There is also a variation depending upon variety or strain. Some strains produce very compact heads which contain a higher percentage of grain to total weight than the heads of other strains which are more open. Under average conditions, however, assuming a six-inch stalk, we have found that the percentable of grain will vary from 75 to 85 per cent of the total weight of the head. In case of the more open brown and white Egyptian corns this would be reduced somewhat, and in the case of the very compact feterita or White "Yolo" it would be slightly higher."

Lime Lovers

Is the cantaloupe a calciphile or a calcifuge plant?—Subscriber, Turlock.

Calciphile. For more general information regarding lime loving or lime shunning plants would refer our subscriber to the California Cultivator of June 18, 1921, in which a list of lime loving plants is given. This is in an article by Dr. R. R. Snowden. In the same article may be noted a list of plants which are indifferent as to whether they have or do not have lime, and another of those which are lime avoiding plants. We have in our own garden a case of loss of a large numver of valuable gladiolus bulbs planted in soil on which a very liberal application of lime had been made. These were planted some months prior to the printing of Dr. Snowden's article which classes "glads" amongst caclifuge plants.

AGRICULTURAL LEGISLATION AT WASHINGTON

The American Farm Bureau Federation reports:

"The conference report on the billion dollar farm export credit measure was adopted by both the house and the senate and went to the White House for the president's signature. President Harding signed the Capper-Tincher bill for the regulation of grain exchanges. The packer control bill placing the packing industry and the stockyards under supervision of the secretary of agriculture had already been passed and signed. The president also recently signed the bill introduced by Senator Kenyon of Iowa increasing the interstate rate on federal farm loan bonds from 5 to 5½ per cent. This congress also has to its credit the bill introduced by Senator Curtis of Kansas increasing the work-

ing capital of the federal farm loan system by $25,000,000. It passed the emergency tariff, and the country has been operating for several weeks under the law which limits immigration to two per cent of the foreign born in this country as recorded by the census of 1910 as residing in the United States. The federal aid road bill passed the senate on August 19, carrying an appropriation of $75,000,000 for road construction, one-third of which will be immediately available. As passed it leaves the administration of the fund with the bureau of roads in the department of agriculture and does not establish a highway commission. The highway legislation is likely to be delayed until congress convenes after its vacation. The same is true of the permanent tariff and the tax bill, the bill to prohibit the manufacture of filled milk, the truth-in-fabric legislation, and the bill proposing an increase in the maximum of federal farm loans to individuals from $10,000 to $25,000."

COMING EVENTS

California Flower and Horticultural Exhibition, Exposition Park, Los Angeles, October 20-26.
Date Festival, Coachella Valley, Oct. 21-23.
El Centro Fair, El Centro, Oct. 22-28.
California National Livestock Show, San Francisco, Oct. 22-30.
Pacific International Livestock Exposition, Portland, Oregon, Nov. 5-12.
Maricopa County Poultry Association Poultry Show, Phoenix, Arizona, Nov. 9-12.
National Grange Annual Meeting, Portland, Oregon, Nov. 16-25.
State College of Agriculture Fruit Show, Berkeley, Nov. 17-19.
State College of Agriculture Fruit Show, Berkeley, Nov. 17-19.
Orange and Olive Exposition, Oroville, Nov. 21-26.
American Farm Bureau Federation Annual Meeting, Atlanta, Georgia, November 21-23.
Oregon State Horticultural Society Annual Meeting, Forest Grove, Oregon, Dec. 1-3.
Stanislaus County Poultrymen's Association Show, Modesto, Dec. 4-7.

THE BEAN HARVEST

The California Bean Growers Association reports survey of the state's bean harvest:

"Threshing is on in all sections. In the Chino, Puente and Ontario districts late beans show considerable damage from rust and nematode which will materially reduce the earlier estimates of the Blackeye crop. In the Santa Ana district the Blackeye crop is practically all harvested and reported free from blemishes of any character. Red Kidneys are also of good quality and yield.

"The earlier estimates of 150,000 sacks of Small Whites in the Lompoc-Santa Maria district will not materialize and production is now figured around 100,000 sacks of choice recleaned. The acreage in this part of the state, as elsewhere, was considerably reduced this year. Pinks and other varieties, including Large Whites, Cranberries, Mexican Reds, Bayos and Henderson Bush, are averaging up to earlier figures as to quantity. The acreage of these latter varieties was larger than usual.

"Salinas Valley reports an excellent yield and quality of all varieties, Pinks predominating.

"Reports from the Stockton Delta district state the estimated damage by frost will be from 30 to 40 per cent of the bean crop in that section. The heavy frost was rather unusual for this season of the year and the damage so great that it can not be overcome by later growth. Harvesting begins about October 15, when the actual loss will be determined. The delta west of Stockton usually produces about 500,000 sacks.

"In the Sacramento and Marysville districts harvesting conditions are said to be ideal, but the yield not as heavy as expected, about 20 to 25 per cent below estimates made earlier in the season."

YOU KNOW HIM!

He likes to gab and blab and blow;
He's always braying.
He talks so much he doesn't know
What he is saying.

WINDBREAKS FOR CALIFORNIA

By Ernest Braunton

For major windbreaks, such as are planted along highways, nothing is more effective than eucalyptus and Monterey cypress. Generally the more common blue gum is used (Eucalyptus globulus), or one of the red gums (E. rostrata or E. tereticornis). Where heat is intense in summer and frosts severe in winter, as in parts of the Imperial, Coachella and Antelope valleys, no species has withstood the two extremes so well as the manna gum (E. viminalis). The eucalyptus are planted on the highway line. As there is usually more or less of a gutter here, the roots seek this area for moisture and so develop less toward the orchard. The cypress are planted inside, or on orchard side, alternating with the gum trees and at varying distances therefrom. As the eucalyptus roots have also to compete with the cypress roots, this increases the necessity for the former to invade the soil under the roadway and lessens the pull on fertility of orchard soil.

It may be found advisable to keep the cypress pruned somewhat on the orchard side. If roots interfere with crops, a subsoiler with chisel-like edge on front can be made, that will effectively cut all interfering roots. The Fontana Ranch in San Bernardino County has such a tool, and by attaching a 75-horsepower tractor it will sever all roots to a depth of three feet, covering a fifteen-mile stretch in a day. Where eucalyptus are on field lines only, the cutter is run on one side one year and on the other side the next year. Citrus trees grown within a few feet, or regular orchard planting distance away, seem to develop and fruit as well as rows farther away.

In so-called desert sections there is generally no need of heavy winter protection, and deciduous trees are used. Cottonwoods are common, but are serious soil robbers and are very dirty. A much better tree is the locust, though it also is a voracious feeder. In these regions—Imperial, Coachella and Antelope valleys, nothing is now so popular as an evergreen species of tamarisk (Tamarix articulata). Some use diciduous species of tamarisk, and the deciduous Eleagnus angustifolius is also a good low growth.

In the Antelope Valley, especially in pear growing districts, some orchardsdists are planting early apricots, peaches or crab apples along roadsides and fence lines, six or eight feet apart. These leaf out before the pears, are good wind breakers and do not unduly rob the soil. Others use a double set of regular orchard trees. Bartlett pears are set at 22 feet. Every sixth row a double row is set, the rows six feet apart and the trees alternating at regular distances. This gives a wind checker every eleven feet, and those who have tried it are much pleased with results up to present time. One orchardist of the South advocates the use of seedling avocados, being evergreen, hardy for that section of the state wherever citrus trees may be grown, and of handsome appearance. One may also reap a crop from nearly all of them and occasionally find a new variety worth propagating for commercial use.

AMERICAN FARM BUREAU FEDERATION ANNUAL MEETING

The annual meeting of the American Farm Bureau Federation will be held in Atlanta, Georgia, November 21-23. Arrangements have been made to care for an attendance of 8,000. The Georgia Farm Bureau Federation will be hosts on a motor tour of the state after the annual meeting. The usual convention rates will be made by railroads.

THE WORLD A STAGE

"Shakespeare says, 'All the world's a stage.'"

"Yes," replied Miss Cayenne. "And the cost of living indicates the presence of a great many ticket speculators."

Electric lights in the farm home cancel the pulling power of those "bright white lights" in the cities.

EFFECTIVE OCTOBER 15, 1921

We make a further reduction of more than ten per cent in prices of

REMCO TANKS

We will ship you, immediately on receipt of order, any standard Remco tank of the dimensions or capacities shown below at the prices here listed:

WATER AND OIL TANKS

Made from 2-inch Clear Air-dried Redwood

Capacity Gals.	Capacity Bbls. 42 Gals.	Outside Dimensions Diameter ft.	Diameter in.	Height ft.	Height in.	Shipping Wt. Lbs.	Price
500	12	5	5	3	11	440	$ 24.00
750	18	5	9	4	11	580	30.75
1,000	24	6	5	4	11	655	35.25
1,500	36	7	1	5	11	830	45.00
2,000	48	8	1½	5	11	975	52.50
2,500	60	8	4	6	11	1,145	60.75
3,000	71	9	1½	6	11	1,270	69.00
3,000	71	8	5	7	11	1,290	69.00
4,000	95	9	10½	7	11	1.555	87.00
4,000	95	9	2½	8	11	1,580	87.00
5,000	119	10	11	7	11	1,745	98.25
5,000	119	10	3½	8	11	1,790	98.25
6,000	143	11	4	8	11	2,010	111.00
7,000	166	12	1½	8	11	2,160	118.50
8,000	190	12	3	9	11	2,375	130.50
10,000	238	13	7½	9	11	2,770	150.00

Made from 3-inch Clear Air-dried Redwood

Capacity Gals.	Capacity Bbls. 42 Gals.	Outside Dimensions Diameter ft.	Diameter in.	Height ft.	Height in.	Shipping Wt. Lbs.	Price
10,000	238	13	10½	9	11	4,660	$ 225.00
12,000	285	13	10½	11	11	5,370	258.75
15,000	357	15	6	11	11	6,080	303.75
20,000	476	17	10	11	11	7,280	352.50
25,000	593	18	4	13	11	8,510	412.50
30,000	714	20	2½	13	11	9,800	465.00
40,000	952	23	0	13	11	11,300	557.25
50,000	1190	24	0	15	11	13,400	675.00
60,000	1428	26	3	15	11	15,100	742.50
70,000	1666	28	4	15	11	16,700	843.75
80,000	1904	30	3	15	11	18,000	922.50
90,000	2142	30	2	17	11	19,800	1005.00
100,000	2380	30	0	19	11	21,100	1102.50

We will allow 5 per cent discount for cash with order, or 2 per cent discount for cash in 10 days from date of invoice.

All prices are for tanks complete, ready to erect, K. D., F. O. B., Pittsburg, Cal. The above tanks are standard sizes. We design and manufacture tanks of all sizes up to 650,000 gallons capacity and tanks of special shapes to meet all requirements.

Complete instructions for erection accompany each tank. If erected according to these instructions, we will guarantee a water-tight tank.

Made from clear, air-dried redwood, banded with round steel hoops fitted with upset threads.

Redwood Manufacturers Company

1604 Hobart Building, San Francisco

Los Angeles Office: 308 East Third Street

The Cultivator Patterns

3746. Ladies' Dress—Cut in seven sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size will require 4¾ yards of 44 inch material. The width of the skirt at the foot is about 2¼ yards. Price 10 cents.

3730. Boy's Suit—Cut in four sizes: 3, 4, 5 and 6 years. A 4 year size will require 2⅝ yards of 27 inch material. Price 10 cents.

3732-3695. An Attractive Costume—Waist 3732 cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Skirt 3695 cut in six sizes: 24, 26, 28, 30, 32 and 34 inches waist measure. It will require 6½ yards of 36 inch material to make this dress for a 38 inch size. The width of the skirt at the foot with plaits extended is 2¾ yards. TWO separate patterns. 10 cents FOR EACH pattern.

3733. Girl's Dress—Cut in four sizes: 6, 8, 10 and 12 years. A 10 year size will require 3⅛ yards of 36 inch material. Price 10 cents.

3737. Ladies' Undergarment—Cut in four sizes: Small, 34-36; Medium, 38-40; Large, 42-44; Extra Large, 46-48 inches bust measure. A Medium size requires 3 yards of 36 inch material. Price 10 cents.

3745. Men's Night Shirt—Cut in eight sizes: 32, 34, 36, 38, 40, 42, 44 and 46 inches breast measure. A 38 inch size will require 5⅞ yards of 27 inch material. Price 10 cents.

3766. Ladies' House Dress—Cut in seven sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size will require 6 yards of 36 inch material. The width of the skirt at the foot is about 2½ yards. Price 10 cents.

3742. Child's Dress—Cut in four sizes: 2, 4, 6 and 8 years. A 4 year size requires 2⅛ yards of 36 inch material. Price 10 cents.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH

HOW TO ORDER PATTERNS

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cents) stamps for each number. In order to furnish our readers with the very best **NEW YORK** styles, all patterns ordered are filled in **NEW YORK.** Do not expect patterns under **Two Weeks** from date of order.

CATALOGUE NOTICE

Send 15c in silver or stamps for our Up To Date Fall and Winter 1921 Catalogue, containing over 500 designs of Ladies', Misses' and Children's Patterns, a concise and comprehensive article on dressmaking, also some points for the needle (illustrating 30 of the various simple stitches) all valuable to the home dressmaker.

PATTERN DEPARTMENT

California Cultivator **Los Angeles**

Household Department

A DESPERATE DEVICE IN DOMICILES

Lumber and labor are heavenward soaring;
Mortar and brick? They are visions too bright!
What is the use of eternally poring
Over a pamphlet of "plans" or a "site"?
Come, let's betake us to venturesome flight
(Not in pursuit, though, of labor and lumber);
Rise to a strike-free and lucreless height.
And there build us Air Castles fair without number!

Never a thought need we give to the matter—
The trivial matter! by slaves termed "the cost"!
Never an ear need we lend to their chatter
Of "price" and "expenses," those things old, enmossed!
Impediments like that shall be tossed
Over the battlements airy and gleaming;
Drop where they may, they'll be very well lost
From where the fair lights of our Castles are beaming!

Never these Castles our spirits shall harry
With cracks in the ceilings and windows that stick;
Never outside of their portals we'll tarry
At doors that won't open for key or for kick;
Nothing shall leak, warp or sag—not a trick
Of earth building domiciles ever shall bore us—
Make haste, my Love! Why, the plan is so slick
That everyone else will be up there before us!

—Minnie Leona Upton in the New York Times.

HALLOWE'EN SMILE BRINGER

By Annette Squire

IT was Hallowe'en and dark. But Peggy Weggy and Jerry Dumpling, sitting on their garden wall under the apple tree, were not a bit afraid. Their mother knew where they were, and Needle Naddle, Mother Goose's robin redbreast, knew—at least they thought he did. Just before he flew away from their garden that morning, he needle-naddled his head toward the garden wall and the apple tree. And since this was Hallowe'en, he surely meant for them to come out to the garden wall.

They were sure something Hallowe'eny was going to happen. They held hands and sat in silence. Over in the woods Mother Goose's owl was asking, "Who—oo?" The new moon went rising, rising, up in the sky like a floating, pale yellow pumpkin.

And then, all at once, at the top of the hill, right under the moon, something Hallowe'eny happened! Little dark shapes and big dark shapes came over the hill! They came down the hill. They turned into the lane that led by the wall and the apple tree!

And when they were almost to Peggy Weggy and Jerry Dumpling, all the little stars in the sky turned brighter, and the moon winked, and the shapes turned into Mother Goose, and her Gander, and Peter Pumpkin Eater, and the Old Woman Who Sweeps the Sky, and Nice Little Pussy Whose Fur Is So Warm! And Peggy Weggy and Jerry Dumpling were so glad that they cried out, "Oh, oh!" And then everybody stopped, even Gander and Pussy, to look under the apple tree.

"Why!" laughed Mother Goose, "it's children! I thought you were baby owls! Did you know it's Hallowe'en? We are going to play a trick on The Old Woman Who Has So Many Children She Doesn't Know What To Do."

"Yes," said The Old Woman Who Sweeps the Sky, "and on The Crooked Man Who Lives In a Crooked House, with only his crooked cat and his crooked little mouse. We are carrying apples and pumpkins to them; and when they wake in the morning they will find apples and pumpkins dumped all topsy-turvey by their kitchen doors! Won't that be a joke?"

"They will smile," said Jerry Dumpling.

"Here," said Peter Pumpkin Eater, opening the big sack that he carried, "you shall share the smiles and bring a smile to your mother. Here are two little Hallowe'en jack-o-lanterns, just the size for you to carry. There's the light in them! See them grin? Now as you go back through the garden, step high; and if a Hallowe'en owl asks you, 'Wh—oo?' sing out, 'We are taking these lanterns and ourselves to our mothers! We, too, are Hallowe'en Smile Bringers!'"

Smiling themselves, the children took the cute little lanterns. "This is why Needle Naddle wanted us to come out here," said Jerry Dumpling, "to get this fun! It is always fun to make mother smile! Hurrah! We're Hallowe'en Smile Bringers!"

Then Pussy and Gander and Mother Goose and the other Old Woman began to jig about and sing:

Dance a jig, my Pussy dear,
Hallowe'en's good fun is here;
Time to make somebody smile,
Maybe laugh a little while!
Let us play that kind of trick;
Dance ahead, old Gander, quick!

HINTS FROM HOUSEKEEPERS

Candied Figs

This is the third summer I have candied figs, and this is the recipe: 5 pounds white figs, 1 pound sugar, 1 cup water. Sprinkle two tablespoonfuls baking soda or saleratus over the figs, cover with boiling water, and let stand five minutes. Drain and rinse twice in cold water. I use only water enough to dissolve sugar; and when it boils, drop in figs. Cover and cook one hour. Uncover and let stand until next day. Boil slowly one hour uncovered. Cool again and boil one hour at a time until juice is evaporated. Dry on plates or granite pie pans. Keep in open jars or tin boxes, not airtight. I had 12 pounds to send away last Christmas. A few left were just as good in April or later.—Mrs. A. Inglett, Los Angeles.

Canning Tomatoes

I have been reading in your columns some good suggestions for canning different kinds of fruit and vegetables, but I have never found any as good for canning tomatoes as the one I am sending:

Put in bag and submerge in boiling water for a few minutes, then in cold water. This keeps them nice and firm and so makes them easy to skin. Have tin cans washed and ready tested to see that none of them leak. Pack tomatoes in cans until full; sprinkle a little salt and pepper on top of each can and leave covers off and set in oven to cook. When cooked enough take out of one can to fill up the others as they will settle down in cooking. Put lids on and seal. Try these and if they are not the best canned tomatoes you ever ate then I won't send any more recipes to the Cultivator.

Care should be taken in using tomatoes from tin cans. Contents should be emptied as soon as the lid is removed. Always look at the can and if it is black inside do not use it. Never use cans the second time.—Mrs. Geo. Brill, Selma.

Cabbage Pickle

I have been reading so many good pickle recipes in the Cultivator that I would like to add one more to the list—one for pickled cabbage:

3 gallons chopped cabbage, 2 gallons chopped onions, 1 gallon vinegar, 2 pounds brown sugar, 2 tablespoons turmeric, 1 tablespoon white mustard seed, 1 tablespoon celery seed, about 1 ten cent package mixed spices. If the vinegar is very strong use part water.

Put cabbage on stove in salt and water, let come to boil, take off and drain. Have ready vinegar, sugar and spices, pour over cabbage, put back on stove, let come to boil, take off, add onions, put in jars. When cold it is ready for use. Will keep indefinitely. This is a splendid relish for meats and boiled vegetables.—Mrs. Geo. Brill, Selma.

Letter File for Cultivator Clippings

Finding that saving Cultivators for reference took up too much room, I went through the old Cultivators and cut out those articles I thought I would be most likely to want. These clippings I filed in an ordinary letter file where they can easily be referred to.—A. M. D., Arlington.

Marking Fruit Jars

Instead of pasting labels on fruit jars, it is easier to write directly upon the glass with a wax pencil such as chemists use. These pencils write more easily if the glass is warm.

Besides the kind of fruit, I always put the date, as: "Bartlett Pears, 9-20-21." Have taken the Cultivator a good many years and am always finding it interesting and helpful.—Mrs. J. M. Davison, Arlington.

A BACK SAVER FOR WASH DAY

A piece of rubber tubing will be found a most desirable addition to the kitchen equipment, especially if you have running water. A piece three-quarters of an inch in diameter will fit over the faucet in the sink, and it will be easy enough to siphon the water into the wash boiler on the back of the stove, thus eliminating many trips and the lifting of heavy bucketfuls of water. The water can be siphoned from the boiler to tubs, or from boiler or tubs to the sink. The tube must of course first be filled with water, and a thumb placed tightly over each end of the tubing to prevent the intake of air. Many other uses will be found for it once the tubing is tried out.

OPPORTUNITY

A stranger knocked at a man's door and told him of a fortune to be made.

"H'm," said the man. "It appears that considerable effort will be involved."

"Oh, yes," said the stranger, "you will pass many sleepless nights and toilsome days."

"Oh," said the man; "and who are you?"

"I am called Opportunity."

"Yes," said the man, "you call yourself Opportunity, but you look like Hard Work to me."

And he slammed the door.

Oil Light Beats Electric or Gas

Burns 94% Air

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PEPPERS ARE RIPENING—TRY THESE RECIPES

Both green and red sweet peppers add zest and pungency to other dishes. It is worth while to put some up for winter use, either in pickle combinations or alone. Chutneys, chile sauces, and other relishes are better for the addition of peppers. Fresh sliced sweet peppers and canned pimentos flavor as well as garnish salads, whether vegetable, fruit, cheese or meat.

The United States department of agriculture recommends the following recipes in which peppers are used:

Stuffed Baked Peppers

1 cup minced cold ham, chopped bacon or cold chicken, 1 tablespoon chopped parsley, 1 cup toasted bread crumbs or cooked rice, 1 tablespoon chopped onion, 1-8 teaspoon pepper, 1 cup tomatoes cut in cubes. Salt to taste.

Other cold meats may be ground, seasoned, and mixed with an equal quantity of bread crumbs or cooked rice, moistened with a slightly beaten egg, cream, or tomato, and substituted for either of the fillings.

Take six whole medium sized fresh green peppers or canned whole pimentos. If fresh peppers are used, slice a round off the top, remove seeds, and save the top to replace. Soak in cold water (2 tablespoons salt to one quart water) for half an hour; rinse in clear, cold water. Drain, press in the filling, replace the top, and fasten it in place with wooden toothpicks. Put the stuffed peppers in a baking pan, pouring around them enough water to cover the bottom of the pan one-half inch. Bake in a medium hot oven for 20 to 30 minutes. When canned pimentos are used, remove from cans, discard liquor, and allow the pimentos to stand in a bowl for about 15 minutes to aerate before using, thus giving them a better flavor. Stuff as for green peppers and bake for 10 to 15 minutes.

Instead of actually stuffing the peppers some cooks like to chop them up and mix them with the stuffing in a baking dish which is then sprinkled with crumbs and browned in the oven. This dish is tasty and unusual even when the meat is omitted. Individual earthenware ramekins may be filled with the mixture in the same way.

Creole Chicken or Jambolaya

1 medium sized fowl, 2 cups tomato, 1 cup okra, 1-4 cup chopped onion, 1-2 cup rice, 1 teaspoon salt, 1 cup boiling water and 1 tablespoon fat.

Dress the fowl and cut into joints. Melt the fat, add onion and pepper. Cook for a few minutes to develop flavor. Then add salt, tomato and okra, and simmer for 10 minutes. Place layers of the chicken, vegetable mixture, and rice in cooking vessel until all is used. Pour over this 1 cup boiling water. Simmer for one-half hour and put in fireless cooker for three hours without the hot disk or two hours with it. Additional seasoning of ham or bacon, parsley and bay leaf, may be used.

Spanish Soup

4 tablespoons butter, 4 tablespoons green pepper (chopped), 4 tablespoons red pepper (chopped), 1-2 medium-sized onion (chopped), 1-4 pound cooked macaroni, 4 tablespoons flour, 6 pints stock, 1 quart tomatoes (canned or stewed), 1-2 tablespoon salt, 1-8 teaspoon pepper, 1 teaspoon vinegar and 1 bay leaf.

Cook chopped peppers and onion in the butter for 5 minutes; add flour, heated stock, and strained tomatoes; strain, season, add cooked macaroni, and just before serving add the vinegar.

The peppers and onion may be minced by putting them through a meat grinder.

TIME SAVED IN SORTING STOCKINGS

Here is a suggestion for saving time and bother with the laundry. When a pair of stockings is dropped in the laundry bag the owner fastens tops together with a safety pin. This saves time in washing, in drying, in sorting out the clean clothes. The mother of three who is also a business woman offers this help to our home makers.

WHICH WAS THE HOME OF WEALTH?

By J. M. Davison

THE car was crowded and I pressed forward and took my stand just back of the motorman. For several blocks, after the plunge through the tunnel had shut out the lights of Hill Street, we rode without stopping. A local passenger, rising to stand by the exit as the car slowed down, offered me his seat. The long ride on Sunset Bouvelard was punctuated by many stops. As we reached the open country on our way to the distant surburb, the car became almost empty and the stops less frequent. I carried the evening paper in my hand, folded. I was in no mood for reading. As I glanced at the paper earlier on my ride, a headline attracted my attention. It was "Unable to Live on $100,000 a Year." I glanced at the article which contained the statement, that inasmuch as one of his relatives had refused to advance him money in addition to the $50,000 he received every six months from his father's estate, Jack Cudahy, in his palatial Hollywood home near which I had passed, had taken his shotgun and ended his life.

As I sat there with the folded paper in my hand, I saw the motorman apply the air and I heard the brake shoes grind against the wheels. I looked around. No one had the appearance of wanting to get off. I looked ahead. We were approaching a street crossing, but I saw no one signaling for a ride. As we reached the crossing the motorman brought the car to a stop and threw open the front gate. Emerging from the semi-darkness there came running a boy, who with a spring bounded up the steps of the car. As the reflection of the lights fell upon him I saw that his feet were bare. I saw a neatly patched but clean pair of overalls that came to his knees. I saw a faded cap upon his head, and in his eyes I saw the flash that comes from health and eagerness, and vitality and—something more. Almost before his feet had touched the step there was a cheery "Hello Daddy," followed by an instant "Hello Sonny," and a package was hastily passed from son to father. For an instant after the package had passed the free hand of the father clasped the hand that had reached to him the package, but only for an instant, for no passenger fare is added to the revenues of the company by this stop, and springing from the car with a "Goodnight, Daddy," the boy was swallowed up by the darkness and the car moved on its way.

The motorman was still humming to himself softly the old words, "There's a wideness in God's mercy like the wideness of the sea," as he started to open up his evening lunch, after setting the brakes at the end of the line.

As I stepped from the car and looked down the dimly lighted street leading to my final destination it suddenly occurred to me that as I had watched the graceful swinging run of the boy into the darkness toward the low roofed bungalow with the cheerfully lighted window, my right hand resting on the empty seat at my side had involuntarily released the folded paper. A very few returning steps would enable me to recover it. I did not take them.

ONE WAY TO GET ACQUAINTED

Talking about American village life, Booth Tarkington, the novelist, once said, "I'm afraid our American villages don't practice the social amenities to any great extent. I know a short story writer who moved recently into a quaint Vermont village. I met him the other day in a magazine office and asked him how he liked his new life.

"Fair," he answered.

"Have you called on your neighbors yet?" said I.

"No," said he, "but I'm going to if I miss any more of my wood."

A BUSINESS DEAL

"Remember, I don't know anything about business. In business matters I'm a baby."

"Can't deal with you, then. A baby wants it all. Send me somebody who does know something about business."
—Louisville Courier-Journal.

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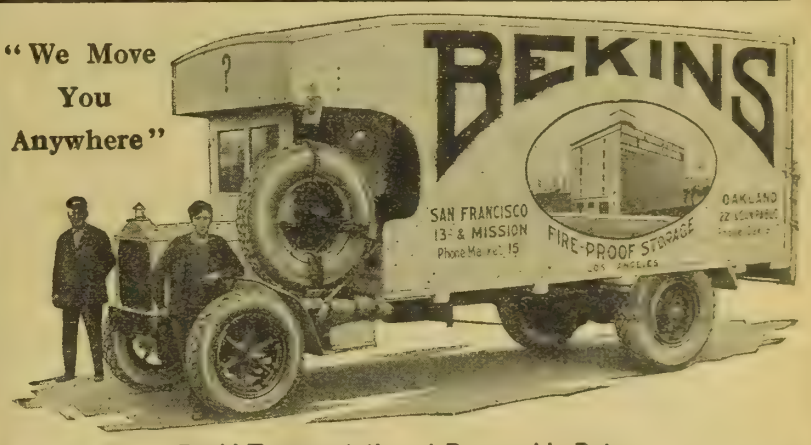

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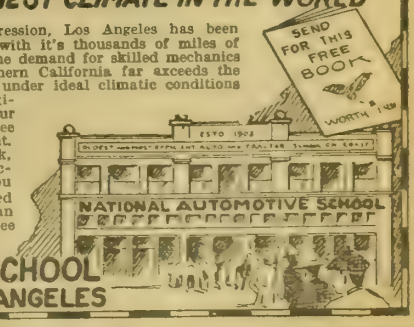

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Southern California Fair

WHEN the 166 boys from 18 schools making up the judging teams lined up for action at the Southern California fair at Riverside they composed the greatest showing of its kind ever seen in the State of California. Naturally all of the 166 could not be declared winners but there were some good averages made. The winners were: 1, Herman Darling, Franklin (Los Angeles), 66.6; 2, Ralph Stokes, Long Beach, 66.3; 3, Wilder McCullough, Van Nuys, 65.3; 4, Martin Colgrove, Van Nuys, 63.8; 5, Walter Penland, Owensmouth, 63.6; 6, Thelmas Biddison, Antelope Valley, 63; 7, Glenmore Imbach, Van Nuys, 62.5.

Two of this group of winners will be sent with all expenses paid to the Chicago International late in November. These two will be joined by two others chosen from among the state fair contestants. This will be the first delegation of judging teams from California to the International. The funds for bearing the expense of this trip are being solicited from livestock men of the state who believe in this type of education for California youngsters. $2,000 is needed, and it is urged that remittances be made to R. J. Werner at Esparto, R. A. Condee, Chino, or J. B. Lillard, superintendent of agricultural education, Sacramento.

This contest was under direction of J. B. Lillard, state supervisor of agricultural education, John F. Osborne, acting farm adviser of Riverside County, and R. A. Condee of the California Junior Republic. The official judges of the contest were Profs. Hughes and J. I. Thompson. Riverside County farm bureau members have all taken intense interest in this contest, in fact, all the members have been active in promoting the work of the Southern California Fair. It was a remarkably fine showing of California products.

The horticultural tent was even more than filled. There were Fresno and Kings Counties down from the great central valley; then there were the farm bureaus, Elsinore, Hemet, Moreno, Arlington, Avocado Growers, Imperial County, Nuevo, Coachella, Beaumont, Corona, Orange County, state department of agriculture, Banning Almond Growers, Jurupa, Glenavon, Perris, San Bernardino, Almond Growers Exchange, Sunsweet Prunes, Riverside Honey Producers, and myriads of other exhibits, a mere list of which would tire the reader. Southern California's greatest fruit growing industry, the citrus, however, had practically no representation. With Riverside as the center of the citrus industry it hardly seemed just that the citrus interests should be unrepresented.

One of the most striking exhibits was that of automobiles. Without knowledge of actual numbers it appeared that the exhibit at Riverside showed practically twice as many entries as were made at the state fair.

But working back toward the section given over to animal husbandry one was tempted to pass through the poultry tents and buildings. Nearly 2,000 birds were entered and exhibited. The pigeon show was not big, but in the matter of banties the enthusiastic fanciers maintained by long odds "the greatest show ever made on earth." There were 512 banties present and every one standing his straightest. Next door were the milk goats described by Mrs. Koethen on another page of this issue. Superintendent Thomas of the livestock department had a wonderfully satisfied look because of the completeness of the exhibits, especially in the dairy and swine classes.

In addition to the judging contest the various high school clubs made exhibits of swine and calves and showed some remarkably fine stuff. In these classes the awards were:

Berkshires

Boar under 6 months—1, Etiwanda Duke, Stella Mae Dillard, Etiwanda; 2, Hazen Rival, Hazen Cornelius, Ontario; 3, William's Rival, Wm. Beard, Cucamonga.

Sow over 12 months—1, Duke's Lady Lee, Hazen Cornelius.

Sow over 6 and under 12 months—1, Orchard Lassie, Geo. Beard, Cucamonga; 2, Champion's Lady Emblem, John C. Bartlett, Ontario; 3, Leader's Lady Emblem, Donald Clements, Chino.

Sow under 6 months—1, Lady Mae Harlam, Stella Mae Dillard; 2, Guasti's Queen 3rd, Hazen Cornelius; 3, Guasti's Queen 2nd, Wm. Beard.

Southwestern Berkshire Congress Special for registered Berkshire pigs farrowed after March 1, 1921; boars—1, Etiwanda Duke, Stella Mae Dillard; 2, Hazen Rival, Hazen Cornelius; 3, William's Rival, Wm. Beard.

Southwestern Berkshire Congress Special for gilts—1, Lady May Helen, Stella Mae Dillard; 2, Guasti Queen, Hazen Cornelius; 3, Guasti's Queen 2nd, Wm. Beard; 4, Russell Rummell.

Grand champion boar—Etiwanda Duke, Stella Mae Dillard.

Grand champion sow—Orchard Lassie, Geo. Beard.

Duroc-Jersey

Boar over 12 months—1, Ace of Pathfinders II, Frank C. Curtis, Chino; 2, Pathfinder Jr., Edward Klagge, Chino.

Boar under 6 months—1, Champion, Frank Curtis; 2, Chino Champion, Frank Curtis, Chino.

San Joaquin County Holstein Breeders

WILL SELL

55 REGISTERED HOLSTEINS 55

AT PUBLIC AUCTION

Fair Grounds, Stockton, Cal.

Tuesday, November 15, 1921

This offering will include some of the very top animals in some of the best San Joaquin County herds, and includes the entire herd owned by J. C. Ramsey, Modesto, excepting four head.

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BRED TO BULLS OF HIGH RECORD AND POPULAR BREEDING!

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150---Head---150 HORSES and MULES

3 saddle horses, 40 head geldings, 64 head mares, 15 head 3 and 4 year old mares and geldings unbroken, 3 head work mules, 15 head 1 and 2 year old mares and geldings, 15 head spring colts, 14 head 3 and 4 year old mules unbroken, 1 registered Percheron stallion 7 years old, 1 registered Percheron stallion 15 years old.

Farm and Grading Equipment:

2 18 H. P. Cleveland Tractors, 1 Fordson Tractor, 1 18 H. P. Holt Midget Tractor, 2 Double Tractor Disc-Clark, 5 Single Cutaway Disc-Deere, 1 Double Engine Disc Plow, 3 3-Gang Deere Orchard 10-in. Plows, 15 2-Gang Deere Orchard 10-in. Plows, 10 2-Gang Deere Orchard 12-in. Plows, 1 3-Gang Deere Orchard 12-in. Plows, 2 3-Disc Deere Orchard 12-in. Plows, 1 4-Gang Stockton Plow, 2 Double Clarke Disc 6-ft., 5 12-in. Walking Plows, 6 10-in. Walking Plows, 6 8-in. Walking Plows, 2 Road Plows, 2 Side Hill Plows-Syracuse, 1 Side Hill Plow-Oliver, 4 10-ft. Thomas Grain Drills, 5 Side Hill Plows-Benicia, 2 200-Gal. Tree Water Tanks-square, 1 400-Gal. Tree Water Tank-round, 1 180-Gal. Tree Tank-round, 3 250-Gal. Tree Water Tanks-square, 2 Mowers 4-ft. new Ideal, 1 Mower 5-ft. McCormick, 2 Mowers 5-ft. J. Deere, 2 Mowers 5-ft. Osborne, 1 Road Drag-wooden, 16 Spike Tooth Harrow Sections, 47 Spring Tooth Harrow Sections, 12 Spring Tooth Harrow Center Sections, 12 Cyclone Weeders, 5 Cultipackers, 2 Sleds, 1 King Road Grader 9-ft., 1 3-Section Road Drag, 4 Killifer Cultivator 8-ft., 3 Marmon Scrapers, 8 4-H. Fresno Scrapers, 5 2-H. Fresno Scrapers, 2 2-H. Slips, 2 Buck Rakes-Deere, 3 Hay Rakes 14-ft., 2 Corn Planters, 2 Potato Planters, 20 Fifth Chains, 54 Lead Bars, 30 Stretchers, 22 Eveners, 4 Log Chains, 1 Hay Press Dain, 18x22-in. 20 Draw Bars-Harrow, 2 Gem Seeders, 4 Spike Tooth Cultivators 1-H., 1 Sod Plow, 3 10-ft. Osborne Rakes, 2 Detachable Unloading Gravel Chutes, 1 Stump Puller and Winch with 3 12-in. Open Jaw Pulleys and 500 ft. 1-in. Cable, 1 No. 3 Garden Pump, 2 Ajax Diaphram Pitcher Pumps 14-in., 1 Wood Saw Outfit on Trucks, 1 Junior O Ventura Bean Separator, 1 40-H. P. Fairbanks-Morse Horizontal Gas Engine, 6 1½-H. P. Aermotor Engine, 6 1½ Type Z F M Engines, 1 No. 109-A Seed Clipper Cleaner complete with 47 screens, 1 No. 2-D Clipper Seed Cleaner.

This is only a partial list of equipment.

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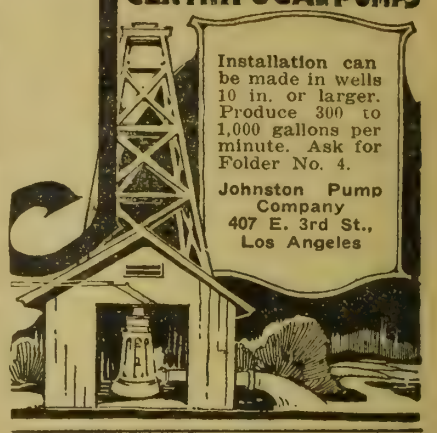

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For Profitable Durocs

As we have sold out of bred sows and gilts, we are now offering big growthy fall pigs, either sex, at attractive prices.

D. G. Cummins & Son

Route 1 Visalia, Cal.

Sow over 12 months—1, Frank Curtis; 2, Rep. Model Lady, Edward Klagge.

Sow over 6 and under 12—1, Sensational Col. Queen II, Harry Wingard, Pomona; 2, Beauty Sensational, Roy A. Fortner, Pomona.

Sow under 6 months—1, Model Rose Pathfinder, Frank Curtis; 2, Model Pathfinder, Frank Curtis; 3, ————, Edward Klagge.

Litter—1, Edward Klagge.

National Duroc—Jersey Association (special for pigs)—1, Champion, Frank Curtis; 2, Chino Champion, Frank Curtis.

National Duroc-Jersey Association special for gilts—1, Model Rose Pathfinder, Frank Curtis; 2, Model Pathfinder, Frank Curtis; 3, Guasti's Queen II, Wm. Beard; 4, Marguerite II, Russell Rummell, Ontario.

Grand champion boar—Ace of Pathfinders II, Frank Curtis.

Grand champion sow—Sensational Col. Queen II, Harry Wingard.

Poland China

Sow over 12 months—1, Miss Lady 5th, Myron Gemmill, Ontario; 2, Model Bettie II, David H. Kelley, Corona; 3, Shamrock Lady, Harold Anderson, Riverside.

Sow over 6 and under 12 months—1, Fern's Lady, Thurman B. Irwin, Chino; 2, Lady Timm, Myron Gemmill, Ontario; 3, Model Bettie III, David H. Kelley, Corona.

Hampshire

Sow under 6 months—1, Buena Suerte, Leland Glazier, Val Verde.

American Hampshire Record Association special for gilts—1, Buena Suerte, Leland Glazier.

Feeding

Fat pig under 8 months, feeding record supervised—1, Buena Suerte, Leland Glazier; 2, Leland Glazier.

Fitting and Showing Contest

For the club member showing his own pig prepared by himself—1, William Rival, Wm. Beard; 2, Orchard Lassie, Geo. Beard; 3, ————, Frank Curtis; 4, Sensation Lassie, Leland Glazier.

Calf Clubs

Best Holstein calf owned, developed and shown—1, Kenneth Berry, Chino; 2, Kenneth Berry.

Corrected livestock award lists were delayed and Cultivator will be unable to give for its readers until next week.

Women Judge Swine

One of the unique features of the Southern California Fair was the judging contest open only to women. The breeders chipped together and purchased six fine silver cups to be used as prizes. Twenty-two ladies entered and 17 competed in judging one class of each of the following breeds: Berkshires, Durocs, Polands, Hampshires. Their judgment scored on a scale of points and the first two ladies tied with 185 points each out of a possible 200. On a toss up Mrs. Buell won first, Mrs. Whittemore second, Viola B. Wilson third, Mrs. G. A. Goodell fourth, Mrs. Cecelia G. Cravens fifth, Mrs. R. N. Hall sixth. The judging was scored by Mr. Thompson, swine judge from Oklahoma.

SAXER HOLSTEINS IN DEMAND

The John Saxer Holstein dispersal sale held at the ranch near Modesto, Wednesday, October 12, attracted one of the largest crowds seen at an auction sale this fall and resulted in the very satisfactory average of $309 on the 33 head sold.

Carl Ray of Lankershim, J. F. Miller of Ripon, and M. J. & B. A. Edwards of Escalon were the leading contenders on the better things. Ray topped the sale by paying $825 for the attractive Johanna Skylark Ormsby. Edwards Bros. made a nice selection when they took four daughters of the good cow Squaw Queen De Kol 3d. J. F. Miller secured the dam along with several other good ones. Several members of the Delhi state land colony attended the sale and were successful bidders. J. F. Miller was the fortunate buyer of the young bull, King Ormsby Moorland Colantha, a son of the great young cow Moorland Colantha Rose that is making such a creditable record.

W. A. Walker of Ripon consigned six head of cows and heifers that made an average of $191.

The California Breeders' Sales and Pedigree Co. managed the sale and Cols. Rhoades and Davis were the auctioneers.

BULLS

1, Segis Johanna De Kol Pontiac, April, 1920; J. M. Hampton Jr., Live Oak, $375.
2, King Ormsby Moorland Colantha, December, 1920; J. F. Miller, Ripon, $500.

FEMALES

3, Moorland Colantha Mead, March, 1919; J. F. Miller, $550.
5, Segis Johanna De Kol of Edelweiss, November, 1914, 31.95 pounds; Carl Ray, Lankershim, $640.
7, Johanna Skylark Ormsby, March, 1918; Carl Ray, $825.
8, Stanislaus Belle Hengerveld De Kol, September, 1918; Carl Ray, $400.
9, Stanislaus Leda Skylark Ormsby, September, 1917; Carl Ray, $375.
10, Stanislaus Leda Ormsby Jewel, March, 1920; E. F. Gleason, San Juan, $280.
12, Duchess Segis Colantha, November, 1916; Carl Ray, $250.
13, Squaw Queen De Kol 3d, June, 1914, 20.66 pounds; J. F. Miller, $540.
14, Squaw De Kol Nudine, March, 1919; M. J. & B. A. Edwards, Escalon, $490.
15, Queenie Segis Pontiac, May, 1920; M. J. & B. A. Edwards, $300.
16, Queenie Pontiac Segis De Kol, May, 1920; M. J. & B. A. Edwards, $300.
10, Stanislaus Queen Pontiac, April, 1916; J. F. Miller, $575.
20, Inka Hermana Ignaro Princess, April, 1916; M. M. Clapper, Modesto, $350.
22, Fakie Onyx Hengerveld, January, 1920; R. W. Brietenbrucher, Lathrop, $310.
23, Church Hill Lady Hengerveld, October, 1912, 24.45 pounds; A. M. Widener, Delhi, $245.
24, Dottie Tuebie, January, 1913; J. F. Miller, $295.
25, Hughson Pet Hengerveld Colantha, November, 1919; J. F. Miller, $400.
26, Golden West Silver Burke, February, 1920; J. Patrich, Peters, $300.
30, Queen Alice Ormsby Witkop, January, 1921; M. Santini, Stockton, $210.
31, Mercedes De Kol Witkop, December, 1920; J. F. Miller, $300.
32, Ora Korndyke De Kol Witkop; A. M. Widener, $300.
33, Queen Pontiac Torchlight Ormsby; H. Niestrath, Lathrop, $155.
34, Segis Mercedes Colantha, October, 1920; J. Austin, Irwin, $150.
13½, heifer calf out of No. 13; M. J. & B. A. Edwards, $170.

W. A. Walker, Ripon, Consignment

38, Aafke Ignaro De Kol, January, 1916; California Swine Corp., Escalon, $290.
40, Miss Cornucopia Alcartra, May, 1919; D. C. Peters, Delhi, $230.
41, Eva Colantha Cristeria, September, 1919; A. M. Widener, $240.

CALIFORNIA CATTLEMEN'S ASSOCIATION REPORT

San Francisco, October 10.

Sales made October 7 and 8 in Modoc County are reported as follows: Steers 5½c, cows 4¼c, weighed at the ranch, with 3% shrink. Buyer to drive cattle 20 miles to railroad at own expense. Lassen County sales reported a quarter of a cent higher. There is a great shortage of feeder and stock cattle, but abundant feed. Los Angeles buyers are operating in the northern part of the state quite extensively. Cattle weighing 1100 pounds are bringing the best price.

Relative to war finance corporation money, bankers over the entire state are cooperating to the fullest extent in financing cattlemen not only from their own funds, but also in securing money from the war finance corporation. There seems to be no reason why every cattleman in California cannot now be satisfactorily financed. There appears to be no necessity for sending breding stock or young stock to market. Cattlemen in need of financial assistance are urged to consult with their local bankers at once. If additional information is desired, write to the California Cattlemen's Association, 814 Santa Fe Building, San Francisco.

Your chairman sold another car of prime cows on October 3 at Long Beach (local butcher) at 6c f. o. b. ranch, 3% shrink.

Do not ship or sell on consignment. Sell f. o. b. ranch. Sell nothing but prime cattle. Beware of the speculative buyer who does not buy directly for a packing company. His profit belongs to you.—Fred H. Bixby, chairman, A. S. Goode, C. N. Hawkins, Owen Duffy, James Barry.

55 Royally Bred Young Registered Holsteins 55

40 FEMALES — 15 BULLS

SELLING AT PUBLIC AUCTION BY

A. W. Morris & Sons Corporation, Woodland, Cal.

At State Fair Grounds, Sacramento, Cal.

Thursday, November 3, at 10 A.M.

Never before have buyers had an opportunity to secure at their own price so large a number of young cattle from this herd, sired by the best Morris herd bulls, out of dams of rich breeding and many with great records, and most of the females carrying the service of one or the other of the great present Morris herd sires.

While a considerable number of the young females in the sale have 7 and 305 day records, there are many 2 year olds that are milking and have no records, due to the fact that there has not been barn room enough on the Coil place to house these heifers as they have freshened, and buyers are certain to secure some great bargains in these heifers.

ALL OF THE FEMALES EXCEPT FOUR IN THIS SALE ARE SIRED BY SIR AAGGIE DE KOL ACME, KING MEAD OF RIVERSIDE, PRINCE GELSCHE WALKER, KING MORCO ALCARTRA, OR SEGIS PONTIAC DE KOL BURKE, EVERY ONE OF WHICH HAS SIRED A WORLD'S RECORD DAUGHTER OR IS OUT OF A DAM THAT HAS BEEN A WORLD RECORD PRODUCER.

THE DAUGHTERS OF SIR AAGGIE DE KOL ACME include some with 305 day records up to over 653 lbs. butter for first calf 2 year olds, and are out of dams with records up to over 30 lbs. butter in 7 days and up to over 1,000 lbs. in one year.

THE DAUGHTERS OF SEGIS PONTIAC DE KOL BURKE include some with records up to over 763 lbs. butter in 365 days for a senior 2 year old, some out of high record dams.

THE DAUGHTERS OF KING MORCO ALCARTRA, KING MEAD OF RIVERSIDE, AND PRINCE GELSCHE WALKER, are practically all 2 and 3 year olds, many out of dams with high 7 day and 365 day records, and a large number of them due to calve this fall and early winter.

BULLS TO WHICH FEMALES IN THIS SALE ARE BRED

All of the best females in this sale are bred to Sir Aaggie De Kol Acme, Sir Aaggie De Kol Mead, Sir Prince Aaggie Mead, or King Aaggie Mead. Calves from any one of them, out of such dams as will be found in this sale, would add value and attractiveness to the best herd in America.

REMEMBER that nineteen of the great young females in this sale are due to calve before December 10 to SIR AAGGIE DE KOL MEAD, whose calves are rated in the Morris herd as perhaps the most promising they have yet secured from any bull.

A detailed list of the great young females in this sale is needless at this time, for the fact that they are sired by the Morris herd sires noted above, mostly out of dams sired by herd sires that have been in use in the Morris herd during the past years, and that they sell mostly bred to the great young sires noted above is evidence enough of the outstanding quality of the offering.

ELEVENTH HOUR ENTRIES

Just before the catalog went to press we received three additional entries, ONE OF THEM A 16 POUND JUNIOR 2 YEAR OLD DAUGHTER OF THE

$12,000.00 BULL KING KORNDYKE PONTIAC 20TH, fresh in July, and an 18.70 lb. junior 2-year-old, and a 19.75 lb. junior 2-year-old daughter of a 30 pound bull, both heavy in calf to Sir Aaggie De Kol Mead, making 21 females in this sale due to calve to his service before December 10.

FIFTEEN YOUNG BULLS IN THE SALE

The bulls in the offering include several that should head purebred herds, and a splendid lot that will introduce the world's most productive blood into grade herds. All of them are sired by Sir Aaggie De Kol Acme, Sir Aaggie De Kol Mead, Sir Aaggie Mead De Kol, or King Aaggie Mead, and out of dams of rich breeding, some with records up to over 35 lbs. butter in 7 days; others with good yearly records.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL TUBERCULIN TESTED AND SOLD SUBJECT TO RETEST BY THE BUYER.

TERMS OF SALE: Responsible parties may arrange for credit on the basis of one-third cash, balance in three, six, and nine months, with approved notes bearing eight per cent interest, if arrangements for credit are made before sale with California Breeders Sales and Pedigree Co.

Headquarters of Sale: Travelers Hotel, Fifth and J Sts., Sacramento, Cal.

— CATALOG OF SALE FREE ON REQUEST TO SALE MANAGERS —

Auctioneers:
Col. Ben A. Rhoades, Los Angeles
Col. John A. Davis, Manteca

MANAGEMENT
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

Sir Prince Aaggie Mead

CONSIDER THE TREMENDOUS PRODUCTION AND DEMONSTRATED ABILITY TO TRANSMIT PRODUCTION ON BOTH SIDES OF HIS PEDIGREE.

His sire, King Aaggie Mead, is a son of the 1,000 lb. foundation cow Aaggie Acme of Riverside, who produced the 1,331 lb. world's strictly official record cow, Aaggie Acme of Riverside, who in turn produced California's only 1,000 lb. junior 2 year old, Miss Aaggie Acme Burke.

His dam, Miss Valley Mead De Kol Walker, with two records above 1,000 lbs. butter in one year, and now making a yearly record that promises to exceed her previous best record of 1,113 lbs., is a daughter of the 1,011 lb. 4 year old De Kol of Valley Mead 2d, who in turn is out of the foundation cow, De Kol of Valley Mead.

HE IS BEING GIVEN HEAVY SERVICE IN BOTH OUR HERDS. KEEP ONE OF HIS SONS IN MIND FOR YOUR HERD SIRE.

OWNED JOINTLY BY
Fred Hartsook, LANKERSHIM, CALIF. and A.W. Morris & Sons Corporation, WOODLAND, CALIF.

DISPERSAL SALE

40 Registered Holsteins
20 Grade Holstein Cows and Heifers

Dr. F. H. Shanks & Sons Herd, Susanville, Cal.

Saturday, October 29
at 10 A.M.

Because two of his sons have taken responsible positions in other lines of agriculture, Dr. Shanks has decided upon a complete dispersal of his high-class dairy herd containing the animals noted above.

The herd contains a splendid lot of heavy producing cows of good breeding, and will be presented on sale day in good physical condition. An exceptional opportunity for buyers in the northeastern counties and in Nevada to buy good Holsteins near home.

EVERY REGISTERED ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OLD TUBERCULIN TESTED AND SOLD SUBJECT TO RETEST BY THE BUYER.

TERMS OF SALE: Responsible parties may arrange for credit on the basis of one-third cash, balance in 3, 6 and 9 months, with approved notes bearing eight per cent interest, if arrangements for credit are made before sale with the sale managers.

CATALOG OF SALE FREE ON REQUEST

Auctioneer: Col. Ben. A. Rhoades, Los Angeles
Managed by California Breeders Sales and Pedigree Co., C. L. Hughes, Sales Manager, Sacramento, Cal.

Tosantos Walker Mead

Born December 9, 1919
Exceptional Yearly Record Backing

His five nearest dams average over 1,000 lbs. butter in a year. He is out of a wonderful daughter of Prince Gelsche Walker and Sir Aaggie Mead De Kol. He is a show bull and is priced for immediate sale.

E. D. BARRY, JR. Workman and Azusa Ave., Covina, Cal.

HOLSTEIN Fred Hartsook RANCH CATTLE

We have assembled an excellent foundation herd of females and will be glad to have breeders call. Fred Hartsook, Lankershim, California.

SANTA MONICA DAIRY COMPANY

HOME OF QUALITY HOLSTEINS

Sons of KING SEGIS PONTIAC JANNEK
From High Producing Dams

Write for Particulars to VENICE, CAL. Visitors Always Welcome

Correspondence with the advertisers in the California Cultivator will convince you that their articles will save you money.

HOGS AND THE ADVANCING PRICE OF FISH MEAL AND TANKAGE

The increasing number of hogs owned in Southern California has been noted from time to time and the turning of the farmers again to this activity has been very gratifying to those who watch the development of diversified production in this part of the state.

It is generally conceded that to secure the most rapid development, and hence to gain the most profitable growth in market hogs, a certain amount of animal meal is indispensable. Ordinarily six to ten per cent in the ration has been found sufficient. The brood sow has also been found to respond, not only in the number of pigs but also in their rapid, even development. As a result there are few stunted pigs where the ration is properly balanced. A supply of high grade animal meal is causing some concern because high grade tankage from the east has practically been taken from the market and the fish canneries apparently intend to do but little packing this year. Comprehensive tests at the university farm have shown that high grade fish tankage is fully equal to the best meat tankage and is superior to the ordinary hog tankage offered for sale.

The reason the eastern product has been taken off the market is explained by the fact that cotton now is quoted at a price where the grower can afford to fertilize his coming crop. Anticipating then a large demand for fertilizer the producers of high grade tankage have decided to take their product off the market.

The scarcity of high grade fish scrap is shown in the rapid rise of fish meal. In a retail way the price has been advanced approximately $20 per ton the past 30 days. Since we must have a supply of animal meal to produce pork most profitably the constantly mounting prices of high grade tankage and fish meals are beginning to create concern among those who wish to see the rapid development of the hog industry in Southern California.

GOATS AT THE RIVERSIDE FAIR

By Jean A. Koethen

Large numbers of goats have been shown at some previous shows, but at no show yet held has quality been as marked. Very few grades were shown at Riverside, the pure breds and high grades (what is known as American pure bred) being in great preponderance. "You may say for us," declared the manager of the show, L. E. Blodgett of Riverside, "that as far as quality is concerned, this is the best show ever held in the southwest. There are 33 pure bred Toggenburgs, 8 pure bred Nubians, 17 pure bred Saanens and about 50 high grades of all breeds. Only four are ungraded."

Mr. Blodgett himself showed a string of 16 sleek coated Nubians of all colors, Mrs. Wm. True of La Verne brought 13. Fred Hartsook of Lankershim, well known as a breeder of fine cattle, exhibited ten pure bred goats.

Mrs. Winthrop Howland of Redlands was there with 27 pure bred and American pure bred Toggenburgs. Mrs. Howland might almost be called the mother of goat culture in Southern California, for it was the Howland family that in September, 1906, imported the first pure bred Toggenburgs. Mr. Howland's mother, in a visit to the continent in 1905, saw the possibilities of goat culture, and the following year three does and a buck were secured from an importation by a Professor Bowman of San Diego. Mr. Howland paid $60 apiece for the does and $75 for the buck. Nearly every heavy milking Toggenburg in this part of the state, Mrs. Howland believes, has some of the blood of this buck, "Prince Bismark."

Among the interesting entries were four Saanen does from Eagle Rock, twins of last year and this, whose mother holds the world's record, having produced 3023.6 pounds of milk in 225 days, an average of six to seven quarts daily. Her biggest day's record was 16.7 pounds, a little less than eight quarts. These tests are being taken under supervision of the University of California and are therefore reliable. Another Saanen doe shown by a Riverside exhibitor gave 3500 pounds of milk in ten months, but this record is apparently not official.

Red Top
GUARANTEED
Steel Fence Posts

THE RED TOP does all you can ask of a fence post. It does not burn, rot, buckle or break. Holds its place and lasts for years. And it's guaranteed.

RED TOP costs less in the fence line than wood or concrete posts, and practically eliminates repairs.

The RED TOP Anchor that holds the post in place

No wonder it's the most popular fence post in America.

Made in angles and tees.

Send for Circular giving all the facts

RED TOP STEEL POST COMPANY
431 Pacific Finance Building
Los Angeles, Cal.

RHOADES

Expert Livestock Auctioneers
1505 So. Main St.
Los Angeles, Cal.
Sales Pavilion
Stock Yards at
Hynes, Cal.

WE CONDUCT SALES OF REG. DAIRY CATTLE GRADE CATTLE GEN. FARM SALES in all parts of Calif. and adjoining States.
Satisfaction guaranteed.
Write for dates and terms.

Mission Herefords

Ultimately
Why Not Now?

We want everyone to see this wonderful herd

Mission Hereford Farm
J. A. Bunting
Phone 6 F 14
Mission San Jose Cal.

DIAMOND G HEREFORDS

A few choice young bulls, big, heavy-boned husky fellows sired by DON PERFECT 2ND, one of the best sires in the West. Priced right and guaranteed.

H. H. Gable Esparto, Cal.

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

Goats were judged by L. A. Bridinger of Santa Rosa, himself a breeder of Guernsey cattle and Saanen goats. "There has been," said Mr. Bridinger, "a slight slump in the price of grade goats, because of their very rapid increase in number south of the Tehachapi, but pure breds are holding their own and will continue to hold it. You can hardly buy a pure bred doe kid under $150, and prices run from that figure to $1000. People thought at first that a goat was a goat, but it isn't. Pure breds are the thing with goats as with cattle and hogs. It is quality that counts, and when we consider how very new the goat industry is in this state we can but wonder at what has been accomplished. There has been almost as much progress in the breeding of goats in 15 years as in the breeding of dairy cattle in four times that period. Everyone is trying to breed up now, and the goat industry has proved that it is no fad, but rests on the substantial basis of supply and demand. There need be no competition between cow and goat. The goat has its own place." Mr. Bridinger was restored to health by goat's milk three years ago after an attack of typhoid and double pneumonia and believes the deplorable infant mortality in our great cities could be reduced 60 per cent by its use.

WESTERN DAIRY PRODUCTS SHOW

Dr. C. L. Roadhouse, professor of dairy industry at the university farm, writes as to the Western Dairy Products Show to be held under the auspices of the Western Dairy Instructors Association in connection with the Pacific International Livestock Exposition at Portland, Oregon, November 5-12: "This dairy products show is second in importance to the National Dairy Products Show." There are to be judging teams from the northern states and British Columbia, and in addition teams are expected to go from California. Prizes will be given for students receiving highest score in judging butter, cheese, market milk and other dairy products.

The management of the Pacific International writes of a special concession made by railways for fares at time of the holding of the International, November 5-12. A fare of a rate and a half is being made which may be secured by simply buying round trip ticket on account of the exposition and the railway makes the rate without requiring the usual one full fare one way and return at reduced rate conditional on a certain number being secured. Attendants should remember and not buy a one way ticket and ask for receipt but pay for round trip at start.

SELLING CATTLE

(Continued from Page 417.)

Furthermore, breeders are not impressed to have such men who perforce have been sitting on the sidelines of the livestock business in this state, offer as supporting evidence articles from an Eastern magazine that made itself the laughing stock of the livestock world by a flamboyant expose of certain sale practices after the Eastern boom had fallen flat—practices that never have and never will be permitted in California as long as our present sound and efficient system of selling is kept in operation.

For one the California Cultivator resents the imputation that California breeders are incapable of attending to their own businessess or the veiled insinuation that our California sales are not conducted on a high level of fairness and honesty.

The board of directors of the San Joaquin County Fair Association has decided that its 1922 fair shall be staged the week preceding the state fair. This is a departure from former exhibitions and the change is made with the idea of securing stock which may be destined for the state fair the following week. They have arranged dates so there is a two day interval between the closing of the San Joaquin County fair and the opening of the state.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Pus Cavity

Please advise through the Cultivator what to do with a young heifer that has a running sore on the side of the head where the horn starts. She is about five months old. When she was very small her owner put something on her head to kill the horns. He says he put on too much and the result is a running sore where the horn would have been. Sometimes there is a swelling just below the ear that goes down when the sore runs out. I am afraid it will eventually kill her and would like to know if you can suggest something that will heal it.—Subscriber, Willows.

There is a pocket inside where the pus gathers and as the opening is at the top it can not drain out completely so it gathers again. The next time that it gathers below the ear open it there and let the pus run out below. Syringe out the cavity with a warm solution of permanganate of potash, using half a teaspoon of the permanganate to the quart of water. If you make the opening large so it can heal right inside before the skin closes that will be the end of your trouble.

Fistula

I have a nine year old mare that started a fistula about two weeks ago. She had two large swellings on her withers so I opened them and drained the pus. What can I do to cure it?—Subscriber, Tulare.

Get your druggist to put up this liniment: One dram corrosive sublimate, one ounce alcohol and enough turpentine to make one pint. Mix and apply as directed. Make the openings so the pus will all drain out if you can. Wash out the cavities with warm water and wipe out all of the water that you can. Make a swab and dip in the liniment and swab out the cavities, touching all parts. Repeat this once a week. Once a day wet the swellings around the openings with the liniment. If you are careful and do not let the openings in the skin close before the inner parts are healed properly that will be the end of it. Do not put a collar on until the parts are good and solid after healing.

Skin Disease

I have a mule that has a breaking out on his body. It seems to itch, for he rubs himself a great deal. What can I do for it? I have washed it with lysol, which gives some relief but does not last long.—Subscriber, Puente.

Probably there are some small mites in the skin. At this time of the year the hair is thick and it is hard to reach the mites unless you first clip the mule. Zenoleum is one of the best remedies for lice. Dissolve a teacup of the zenoleum in two gallons of warm water and after thoroughly grooming him with a stiff brush apply the solution and wet the skin all over, being sure to wet it well under the mane and around the tail. Better repeat the treatment in about a week to get those that may hatch after the first treatment. If this does not bring the desired results get a pint of Fowler's solution of arsenic and give a tablespoon on the feed once a day while it lasts.

Bloody Milk

We have a Jersey cow milking stringy and bloody milk from one teat. She would milk that way for a milking or two and then it would be all right for a few days but lately she has kept it up for several days. What would you advise doing for it?—Subscriber, Ripon.

The trouble may have been caused by a bruise or from too rich feed. Mix three pounds of Epsom salts with two pounds of common salt and give a handful in her feed once a day while it lasts. That will thin the blood and the parts will heal better. Outward applications do little or no good in such cases. When milking her rub that quarter with the hands and be sure to milk it out clean.

HOLSTEI-FRIESIAN SPECIAL

A special meeting of the members of the Holstein-Friesian Association of America is called at St. Paul, Minnesota, for the purpose of acting upon amendments proposed to the constitution and by-laws, also to provide for the changes and manner of government of the association or any other business which may come before the association. Frank O. Lowden, Illinois, is president of the association and, as has been the case for many years, F. L. Houghton, Brattleboro, Vermont, is the secretary. Frank L. Morris of Woodland is the Pacific Coast representative on the board of directors.

First Prize Breeder's Young Herd, 1921 California State Fair

NEVADA HEREFORD RANCH

Owned by J. H. Cazier & Sons Co., Wells, Nev.

WILL SELL AT PUBLIC AUCTION

80 Real Foundation Herefords 80

State Fair Grounds, Sacramento, Cal.

Tuesday, November 1, at 10 A.M.

The present expansion of the Hereford breeding business in California is an outstanding feature of the agricultural development of the state.

This expansion is taking place in the most substantial manner in the hands of a particularly progressive group of men whose breeding herds are being established with cattle of the better sorts to meet the tremendous demand already present for breeding Herefords of superior quality.

California buyers of the better class of Herefords may well consider it to their distinct advantage to have near at hand a herd of such widely acknowledged excellence as that of J. H. Cazier & Sons Co., Wells, Nev., that is able at this time to offer from their herd a large group of young females and a limited number of young bulls of herd heading caliber.

For general excellence, including breeding, breed, type, good health, and the high ideals of its owners, this herd has won a place among the foremost collections of the breed in America, and those wanting to buy real foundation Herefords, or to strengthen an already established herd may buy in this sale with utmost confidence.

This Is a Federal Accredited Herd

Attention is invited to the important fact that the cattle in this sale are of practically the same excellent combination of breeding as the Cazier show herd that has been so successful in our best shows during the past few years, and which has won consistently over winners in some of the best middle west shows.

LIBERAL TERMS OF SALE: Responsible parties may secure credit in this sale on the basis of one-half cash, balance in six months with approved note bearing eight per cent interest, if arrangements are made before sale with CALIFORNIA BREEDERS SALES & PEDIGREE CO.

Write for illustrated circular and catalog of sale

HULL, Auctioneer
BUNTING, in the Ring

Managed by
California Breeders Sales and Pedigree Company
C. L. Hughes, Sales Manager, Sacramento, Cal.

VENTURA FAIR

By Jack Klein

Ventura County, headed by its bunch of live wire supervisors (who, by the way, are all fair directors) and by its fair secretary, L. P. Hathaway, were right in line with all of the other county fairs this year in putting on the biggest and best show they ever had Ventura County fair has the distinction of being very liberally supported by the county supervisors and the county in general with practically unlimited funds. The supervisors were all fair enthusiasts and anything within reason which is asked of them they attempt to do. The fair has grown wonderfully within the past two years and now ranks with any county fair in the state.

The livestock show this year was of exceptional merit with nearly 100 head on the ground. The great Santa Monica Dairy Company bull, King Segis Pontiac Jannek, was senior champion, and the Maxwell senior yearling, Sir Ormsby Skylark Hengerveld, was junior champion. The Maxwell Farms was the largest winner of the blues, being defeated in only two classes in which it had entries. Joy Hengerveld Clothilde, a great aged cow shown by Maxwell, was senior and grand champion, and the wonderful junior calf shown by Hartsook was again junior champion. In the Jerseys Jim Thorp of Lockeford won all honors. In the Guernseys A. B. Humphrey of Escalon won most of the honors excepting grand champion cow which went to Tucker of Ventura. The Ayrshire show brought together the herds of the Elkhorn Ranch, Watsonville, and A. A. McMinn of Phoenix, Arizona. Elkhorn won grand champion cow and McMinn won the rest of the champions.

In the hog show the Poland Chinas were represented by Fred Gatewood of Fresno whose boar, Navy Boy, was again grand champion, and by Buckland and McNeil who took all the rest of the blue ribbons. The Duroc-Jerseys brought together the herds of the Sierra Vista Ranch of Perris, James Thorp of Lockeford and J. C. Craig of Owensmouth. Royal I Am, the Sierra Vista boar, was again grand champion and Jim Thorp won grand champion sow. The Hampshire show was a good one as Ventura County is one of the Hampshire centers of the state. Lonnie Buell of Carpinteria took most of the honors but Carl Meiner of Ojai won grand champion boar. The Berkshires again brought together the herds of the Italian Vineyard Company and A. B. Humphrey. These two herds have shown against each other at practically all of the fairs this year, and the placing in this show was the same as usual, Humphrey taking grand champion boar and the Italian Vineyard Company taking grand champion sow with the undefeated Violet's Festine.

L. W. Wing of Elkhorn Ranch judged the Holsteins while G. E. Gordon of the Los Angeles County farm bureau judged the rest. Prof. E. M. Hughes of Davis was the hog man.

Ventura County turned out in force to attend the fair and the visitors from around Santa Barbara and Los Angeles kept the grounds crowded throughout the week. The fair grounds are ideally located along the sea shore, and with the treatment accorded the breeders by the fair committee everyone came away highly satisfied.

32 Roselawn Shorthorns

At Public Auction

Roselawn Stock Farm

Owned by H. M. ELBERG

Woodland, California

Wednesday, November 16

At 1 P.M.

Village Beauty E

ROSELAWN SHORTHORNS, one of the longest established herds in the west, have for many years been held in the highest esteem by buyers of dependable Shorthorns.

Directed by constructive breeding practice, and by progressive business methods, the herd has consistently merited its high place among the units of the breed in the west.

Since its last public sale in 1919 the herd has multiplied upon itself and has been strengthened by the addition of choice individuals of fashionable pedigree, until the owner is again in position to offer at public sale a class of Shorthorns that will fully maintain the high standard of the herd.

The offering contains both Scotch and Scotch topped cattle, including cows with calves at foot, bred and open heifers, and a limited number of good young bulls.

Guaranteed Breeders—Tuberculin Tested

TERMS OF SALE: Responsible parties may arrange for credit, with the sale managers, on the basis of one-half cash, balance in six months, with approved notes bearing eight per cent interest, all credit arrangements to be made prior to sale.

Catalog of sale free on request.

Sale Managers

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager, Sacramento, Cal.

Twice as Many Blue Ribbons

as any other breeder in the biggest show of the year at Riverside including the coveted

1st Breeders Young Herd

1st Breeders Calf Herd

1st Get of Sire

The Ormsbys Breed Type

Their production records in our herd are equally satisfying. We can supply your needs in either sex.

MAXWELL FARMS

Jack Klein, Manager HOLLYWOOD

Santa Anita Rancho

Pure Bred Registered Percheron, Arabian and Thoroughbred Horses, Holstein-Friesian Cattle, Southdown Sheep, Big Type Poland China Swine, Mammoth Jacks and Jennets.

Young Breeding Stock of All Kinds

Every Animal Guaranteed

Santa Anita Rancho and Anoakia Breeding Farm

SANTA ANITA Anita M. Baldwin, Owner CALIFORNIA

Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins

November 3, A. W. Morris & Sons, Inc., Woodland.

November 9, Palo Alto Stock Farm, Palo Alto.

Herefords

October 27, Pacific Coast Hereford Breeders' Association, California National Livestock Show, San Francisco.

November 1, J. H. Cazier and Sons, Sacramento.

Shorthorns

October 28, California Shorthorn Breeders' Association, California National Livestock Show, San Francisco.

California friends of the Nevada Hereford Ranch, Wells, Nevada, will be interested to learn that at the recent Utah state fair cattle from this herd made almost a clean sweep in the classes in which they were entered. Beside winning the two-junior and grand championships they topped the following classes: Junior yearling bull, senior bull calf, junior yearling heifer, senior heifer calf, young herd, calf herd, get of sire and produce of dam. The senior bull calf, Blanchard 4th, was grand champion and the junior yearling heifer, Standard Eyes 4th, was grand champion female. Many of these winners will appear at San Francisco and later in the Cazier sale to be held at Sacramento.

The animal husbandry division of the university farm at Davis is preparing to send a judging team made up of students specializing in animal husbandry, to the Pacific International Livestock Show to be held at Portland, November 5-12. This will be the first team to represent the California institution at the above show.

At the recent Oregon state fair a junior yearling Shorthorn heifer, sired by the noted California bull, Imp. Caledonia, was junior champion. This heifer was purchased in the Caledonia sale in May, 1920.

Adirondiac Wietske Dairy Maid, the great producer owned by the Bridgeford Holstein Company, Patterson, is again on yearly test and at the end of five months has rolled up a production of 808.8 pounds of butter from 16,870 pounds of milk. Her last record was 1296.43 pounds of butter from 31,899.8 pounds of milk in 365 days.

George M. Rommel, chief of the animal husbandry division of the bureau of animal industry of the United States department of agriculture, who has been with the department for 20 years, has resigned to become editor-in-chief of the American International Publishers. He will be at his office in New York November 1.

Tritoma Pietertje Mercedes, the grand champion Holstein bull at the National and the Waterloo Dairy Congress this year, was formerly owned by D. G. Maxwell of Hollywood and a large number of his calves are in the Maxwell herd. Four of his progeny won get of sire at Riverside in the strongest class shown this year. His get are all of exceptionally uniform type and are good ones.

The junior three year old Holstein cow, Miss Riverside Walker Wase, owned by the Santa Anita Rancho, has recently completed a seven day record of 27.79 pounds butter from 545.4 pounds milk. This record follows one of 19.78 pounds butter from 494 pounds milk as a senior two year old. At present Herdsman Wall says she is milking over 90 pounds per day and will be carried on yearly work. She is a daughter of Prince Riverside Walker.

W. G. Maxfield, King County Cow Testing Association, reports a new use for cow testing association records. He says that two men, partners in a dairy, dissolved partnership and used the association records to divide the herd according to production and age. Seventy head of cows were thus divided in 1½ hours, to the satisfaction of both parties.

The many sales reported of breeding stock indicate increasing interest in swine. John Kincaid of Bakersfield has just sold to C. G. Bartlett of Wasco a Pathfinder boar and four Orion gilts; to L. R. McKibbie 1 gilt; to M. S. Dukes of Wasco four Orion gilts.

WEATHER BUREAU ASSISTS STOCKMEN

The stock growers of the great range states of the West are vitally interested in cold waves, heavy snows, high winds, and the storms known as blizzards. The weather bureau of the United States department of agriculthre issues warnings of these unfavorable conditions which are dangers to farm animals. These warnings are widely distributed by telegraph and telephone to large centers. but the further dissemination must devolve on the people interested. The problem has been largely solved in some states, particularly Missouri, by telegraphing the warning to one central point in each county, where arrangements are made to telephone information of the warnings to each community interested.

When a warning is received the farmers and stockmen on the great western ranges arrange to graze their stock near shelter, or in such a direction from shelter that the stock will drift toward it when the anticipated severe weather comes. A modification of this service consists of sheep shearing and lambing forecasts and warnings. In early shearing and lambing districts shearing is delayed or newly shorn sheep, ewes, and young lambs are kept near suitable shelter, such as coulees, where they will receive protection when wind, snow, or cold rains are expected.

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POULTRY

Continued requests are being received by the California Cultivator for varieties of poultry not advertised in our columns. If any of you, our readers and friends, have any you wish to dispose of, send a small advertisement to this office and you will be doing our readers a service as well as yourselves.

Day Old Pullets—Here is your chance to get day old White Leghorn and Ancona chicks, guaranteed at least 90 per cent pullets. We are taking orders fast for October and November delivery. We also have R. I. Red and Barred Rock chicks but do not separate the sex. All chicks are from strictly thoroughbred laying stock and are hatched right and shipped by Special Delivery Parcel Post. Send for prices and get your orders in at once. Orange County Hatchery, Santa Ana, California.

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It's no wonder so many poultry raisers make a failure of the business. Without any knowledge of raising poultry people will branch out expecting to make a success. By putting in practice the valuable contents of POULTRY FOR PROFIT, $1.00 postpaid, success is assured in the poultry business. Cultivator Publishing Company, Los Angeles, California.

Sly's Single Comb Rhode Island Reds again show their quality, winning at San Fernando and Ventura seven first prizes, two silver cups, many special honors and other ribbons. Am offering a limited number of line-bred cockerels at $7.50, $10.00 and $15.00; excellent breeders. Send for yours today. Albert Sly, 1642 Middleton Place, Los Angeles.

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Baby Chicks: Only a few more hatches this fall. Booking now for 1922 delivery. Order early—White Leghorns, R. I. Reds, Brown Leghorns, Barred Rocks. Write for circular. Stubbe Poultry Ranch & Hatchery, P. O. Box 67-E, Palo Alto, California.

White Leghorn Baby Chicks from heaviest laying (Hoganized) stock. Safe delivery live, vigorous chicks guaranteed. No money in advance; pay on delivery. Prices on request. Established 1898. MUST HATCH INCUBATOR CO., 438 Seventh St., Petaluma, California.

Baby Chicks from 227 egg strain of heavy winter laying S. C. White Leghorns. Book your order now for 1922 delivery of guaranteed chicks and hatching eggs. Pullets and breeding stock. Meyer Poultry Farm, Route A, Box 17-C, Modesto, California.

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Eastman's "Bred-to-Lay" Hoganized, trapnested Barred Rocks. FALL CHICKS. Fairmead Poultry Farm, Fairmead, California.

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CALIFORNIA LIVESTOCK AND HORSE SHOW

(Continued from Page 415.)

Shropshire Sheep

Ratto Stock Farm, San Francisco, 11. T. B. Bishop & Co., San Ramon, 16.

Hampshire Sheep

Cala Grove Farms, Manteca, 9. J. G. Hubbard & Sons, Monroe, Oregon, 12. Straloch Farm, Woodland, 9.

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Cotswold Sheep

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S. C. Starr, Belle Fountain, Oregon, 9.

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Corriedale Sheep

Corriedale Sheep Company, Hollister, 70.

Saanen Goats

Alice M. Brown, Sacramento, 2.

Nubian Goats

H. Irwin Farr & Sons, Los Gatos, 11.

Toggenburg Goats

Capt. E. G. Freeman, Menlo Park, 6. W. D. Woodruff, Paradise, 11. O. H. Freyschlag, San Jose, 12. Carl Yeager, San Francisco, 5. Richard & Wagner, Montara, 9.

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SEAFORD, DELAWARE

Poultry and Pets at the Riverside Show

By Jean A. Koethen

MORE than usually appropriate was the grouping together of chickens, turkeys, rabbits, cavies, pigeons and other winged and furred creatures in the big triple tent at the Riverside fair. Sometimes one wonders just why turkeys and cavies should be classed together, but this time the reason was plain. Bantams were the connecting link, and bantams are both poultry and pets.

A Remarkable Class

Had there been only a few dozen bantams it would have been less noticeable, but there were hundreds. They eclipsed and outclassed all the rest of the show. To put it in cold figures there were 1700 entries all told, and 525, or nearly a third, were bantams. Chickens outside of bantams numbered about 600, and the other third of the show was made up of turkeys, geese, ducks, guineas, rabbits, cavies and pigeons.

The bantams were so beautiful too and of so many breeds and colors and varieties that one wondered whether all the world had suddenly turned to the culture of bantams. There were the old standbys, Black Breasted Red Game and Red Pyle Game, the Sebrights, Golden and Silver with their lovely spangles, the Cochins, Black, White, Buff, Red and Partridge, who filled a whole alley, with Buff, as always, leading in numbers, the Rolish, White Bearded and Buff, and those queer creatures, the Silkies. Then there were rarer varieties, the Silver and Golden Duckwing, with their modest plumage, the dainty White Game and glossy Black Game, and the Brown Red Game. There was the Birchen, a new name, in sober black and gray, the Old English Game, a striking combination of brown and black, the Black and White Rose Combs, the Wheaton, and the White Booted and the Raven. More interesting even than the strictly fancy bantams were what might be called the bantamized larger breeds. Included among these were the Light and Dark Brahma bantams, which together filled a long alley. They are among the most beautiful of bantam breeds, particularly the Dark Brahma, which are newer here than the Light and of a grayish partridge coloring which is most attractive. There were Barred and Partridge Rock bantams, White Leghorn bantams and Black Minorca bantams, the cunning Black Tailed Japanese, the Black and the White Japanese, the Malay and the Mille Fleur. No wonder the passersby lingered long in the bantam tent, loath to tear themselves away from such a fascinating display.

Chickens and Turkeys

The regular classes of chickens were well filled and of excellent quality, without the great preponderance of one breed which is sometimes seen. Rhode Island Reds, Single and Rose Comb, were the large class—they always are—and very fine specimens were seen, one $500 cockerel attracted a great deal of attention. Barred Rocks were a larger class than has been seen at recent shows, and competition was keen. First pullet was a bird of that soft, sheeny purple-green which is so hard to breed and the despair of amateurs. White Wyandottes filled a shorter alley than they did at shows of two years ago, and were balanced by Dark Cornish, which were one of the best classes. There were a few choice Silver Wyandottes.

Light Brahmas have a firm hold on public esteem, but Dark Brahmas have been little shown on the coast, and the string of 18 birds was an interesting surprise. An exhibition pen of quite young birds attracted considerable attention, the beautiful pepper and salt coloring being marked in even half grown pullets, while the gray and black and green of the cockerel marked him as a genuine fancier's delight.

Sicilian Buttercups are steadily working their way into favor, and the 25 birds shown at this show made a worth while exhibit.

A real new breed, shown here for the first time, I believe, is the Jersey Giant. These birds are black with the greenish sheen so marked in the Black Orpington, but much lighter in weight. Just what their virtues are I do not know, nor their pedigree, but they are certainly "different."

Anconas were an interesting alley, as they rarely fail to be, but the class was not large, only 20 birds being shown. Buff Orpingtons have rather dropped out of sight, and their friends were glad to see 20 fine birds, though they were all from the yards of one breeder. The Orpington is too good a bird to be discarded. There were a few Speckled Sussex, half a dozen Black Langshans and as many Golden Campines, a small but choice display of R. I. Whites, another of White Leghorns, and a string of Blue Andalusians. There was also a "One Wing Hen" in a cage by herself, but whether the lack of the second wing was congenital or accidental could not be determined by the casual observer.

Splendid Turkeys

Not for several years has the showing of turkeys been so large as in this show. Mammoth Bronze led in number, but White Hollands and Bourbon Reds were out in most creditable strings. The beauty and size of the Bronze have long since won it a place both as fancier's and as market bird, which can be filled by no other, but the White and the Red have the advantage of smaller size which makes them more fitted for a certain kind of demand. Hotels, restaurants and clubs, it is said, prefer the big birds, but many families like a bird of not over ten pounds, and this demand the White Holland and Bourbon Red fill admirably, though full grown toms reach 20 or 25 pounds.

There were a few Indian Runner and Pekin ducks, the Fawn and White Runners being noticeable for their fine color, a Muscovy or so, a pair of African Guineas, and six very handsome Toulouse geese.

Few But Interesting

The pigeon exhibit was small, but contained some interesting entries, chief among them the beautiful Swiss Mondaines, both Blue and White. The dainty grayish blue and the soft, delicate white of these lovely little birds were first to catch the eye among the yellows and reds and mixed colors of Pigeon Alley. They were not the only beauties, however. There were Miss Carneau and Lady Tumbler and Duchess White, to say nothing of all the Fantails and Runts and Kings and Homers, and a few Russian Trumpeters and the whole Tumbler family, Black and White and Yellow and Blue Muffs. Doubtless there would have been many more if this had been an exclusively pigeon show, but pigeons do not like to take second place and in a mixed show this is inevitable.

Rabbits and Cavies

Nearly 200 rabbits and about 150 cavies were entered. A large part of the rabbit coops bore the card of the Ontario and Upland Rabbit Association which had 57 exhibits and 12 exhibitors. The biggest rabbit in the show was a Flemish doe 8 months old weighing 20 pounds. Among the breeds entered were Gray Flemish, Flemish Giant, Steel Gray, Mottled Gray, Sandy Gray, Black Flemish, American Blue, American Checkered Giant, New Zealand White and Blue, Himalayan, Havana, White Angora, White Flemish, New Zealand Red, and American Blue.

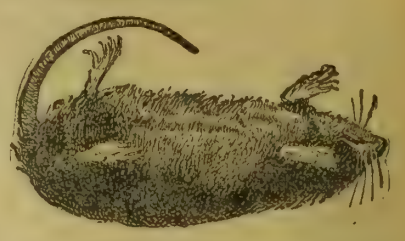
The cavies were about all the colors that a cavy can be, cream, white, mottled, black and gray, and classified as English Black, Cream, Broken Color, White, Red, Golden Agouti, Tortoise and white and Angora, and Silver Agouti, and Broken Abyssinian in buff, white and black. Culture of the cavy, we are told, is increasing steadily in Southern California, and a ready market is found in the laboratories of the County Hospital and other institutions, as well as in private laboratories and at the Presidio in San Francisco.

The executive committee of the Central California Wool Growers Association met at Stockton last week to talk over wages for herders and rates for renting of pasture.

WIPE OUT EVERY RAT AND GOPHER

Amazing New Discovery Quickly Gets Every One. Not a Poison

Don't be satisfied with trapping or poisoning just a few. Exterminate the whole bunch—old, young, big and little. Rats do millions of dollars' damage each year. They kill chickens, destroy grain, damage buildings, merchandise, and are filthy disease carriers.



A wonderful new scientific discovery called Imperial Virus now enables you to clear your place of every rat on it. The amazing feature of it is that it is not a poison and affected rodents such as Rats, Mice, Gophers, Prairie Dogs, Ground Squirrels, etc., only. It is perfectly harmless to humans, stock, poultry, pets. It can, therefore, be spread anywhere knowing it will kill only the pests you want to get. One rat affects the others and in a short time the whole colony is exterminated, root and branch. They die outside, too, hunting air and water.

YOU CAN TRY IT FREE

The manufacturers of this amazing Virus, to get is quickly established and widely used, are making a Special Guaranteed Introductory Offer of two regular, big, full sized (double strength) $1.00 bottles, for the price of one. Use one yourself and sell the other to a neighbor, thus getting yours free. They will also tell you how you can make money telling your friends about it. As this offer may not appear again, you should act at once or clip for future reference.

You need send no money; just your name and address to the Imperial Laboratories, Room 215, 2110 Grand Avenue, Kansas City, Mo., and pay the postman $1.00 and a few cents postage, when the two bottles arrive. It costs you nothing if it does not do the work, as they positively guarantee to refund your $1.00 any time after 30 days if you are not satisfied.

Easy Now to Get Rid of Lice and Mites

Startling New Discovery Eliminates These Pests Without Dusting, Spraying or Dipping

Any poultry raiser can easily and quickly clean out Lice and Mites by using a new Remedy recently discovered by a Kansas City Chemist and called Imperial Lice & Mite Remedy.

All that is necessary is to occasionally put a few drops of this amazing remedy in the fowl's drinking water. It renders them immune from the attack of all blood-sucking parasites, as these pests positively will not stay on a fowl taking this remedy.

It also acts as a splendid Tonic and Blood Purifier, as well as increasing egg production and growth, for with these pests eliminated, hens lay better and young stock grows faster. It is positively guaranteed not to affect the meat or eggs.

The manufacturers of this wonderful remedy are anxious to get it quickly introduced among poultry raisers everywhere, and make this Special Introductory Offer: Send no money, just your name and address to the Imperial Laboratories, Room 522, 2110 Grand Ave., Kansas City, Mo., and they will send you a regular full sized $1.00 bottle and will also send you free a big, full sized (double strength) $1.00 package of Imperial Egg Tonic, the guaranteed egg producer. Pay the postman only $1.00 and a few cents postage when both packages are delivered. If, after 30 days' trial you are not satisfied with results just say so and your money will be cheerfully refunded.

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We supply stock and buy all you raise Laboratories need thousands - big money — easy to raise
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DR. J. A. ROBERTS LABORATORIES
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ADAMS PIPE WORKS
New and second hand pipe and casings. Riveted steel pipe, valves and fittings. Mail orders given prompt attention. Write, phone or call.
2025 Bay St., Los Angeles, Cal.

Extra parts are always available without delay for standard advertised machinery. This class always found in the California Cultivator.

Poultry Queries

(Conducted by Jean A. Koethen.)

Cement Laying House

I wish to build a laying house for 200 hens, and can build more economically with cement. Will it be all right to build back and ends and floor of cement, leaving south side entirely open?—Subscriber, Redlands.

As far as I know, cement houses have not been tried in Southern California, but I do not see why they should not be satisfactory in your dry climate if properly ventilated. You will have to provide for more circulation of air than is required in a wooden house in order to overcome the dampness which gathers so readily in a cement building. Many wooden houses are built with not only the front open but with windows almost or quite the length of the dropping boards between the droppingsboards and the floor. In a cement house it would be well to have the entire space between droppings boards and floor filled with glass or with wire covered with a wooden shutter so that it may be all open when the weather permits. There should also be windows in the ends and the floor should be covered first with a thick layer of dry sand and on top of the sand a layer of straw.

A kicking horse cannot pull and a pulling horse cannot kick. Don't be a kicker. Pull.

Help your Moulters Moult

Moulting time is the time that a hen needs assistance. It is the off-season in the life of the hen.

Think of the amount of a hen's energy, vitality and red blood that's required to reproduce a thousand feathers! (which is only an average plumage).

A moulting hen needs good health, good appetite and digestion. That's just what Poultry Pan-a-ce-a does for a moulting hen—gives her appetite and good digestion, so that she'll eat more and digest more.

Dr. Hess Poultry PAN-A-CE-A

Helps your poultry through the moult. And starts your pullets and moulted hens to laying.

It contains Tonics that produce appetite and good digestion—Tonics that tone up the dormant egg organs—Iron that gives a moulting hen rich, red blood and a red comb. It contains Internal Antiseptics that destroy disease germs that may be lurking in the system.

No disease where Pan-a-ce-a is fed

Pan-a-ce-a helps your poultry to stay at par during the moult. They don't become run-down, pale and thin. That's why a Pan-a-ce-a hen gets back on the egg job quickly instead of sitting around all fall and winter as a bill of expense while regaining her normal vitality.

Always buy Pan-a-ce-a according to the size of your flock. Tell your dealer how many fowls you have. He has a package to suit. Good results guaranteed.

30c, 60c, and $1.25 packages. 25 lb. pail, $3.50. 100 lb. drum, $12.00. Except in Canada.

DR. HESS & CLARK **Ashland, Ohio**

Dr. Hess Stock Tonic keeps hogs healthy, drives out worms.

Dr. Hess Instant Louse Killer Kills Lice

THE BEST IS ALWAYS CHEAPEST
Consolidated PIPE CO.
Products Prove Their Quality

Water and Oil Well Casings
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Remember the Name When You Buy
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Kills Lice and Mites
A.R.M. CARBOLINEUM
For spraying or painting Poultry Houses, Roosts, Nest Boxes, etc., manufactured by
ARTHUR R. MAAS, Chemist
308 E. 8th St., Los Angeles, Calif.—Write for Circular

STORRS EGG LAYING CONTEST

Storrs, Connecticut, September 26, 1921.—Report for week ending September 26. With five weeks to go the hens in the egg race at Storrs have now laid more than 150,000 eggs. They may not smash all previous records but it is reasonably certain that they will beat the average for the last six years. The pen of Leghorns from Hollywood, Washington, that has been in the second place for several months gained another six eggs on the leaders last week which means that they are only 46 eggs from first place. Both the Leghorns and the Wyandottes that are leading them have laid over 2,000 eggs each or an average of 200 eggs per hen.

The weekly scores were close. Three pens of Leghorns owned by Andrew L. Ohr, Wallingford, Connecticut, A. P. Robinson, Calverton, New York, and Hollywood Farm, Hollywood, Washington, tied for first place with 42 eggs each. The total lay for all pens was 2,467 eggs, or a little over 35 per cent.

The four leading pens in each of the principal varieties are as follows:

Plymouth Rocks

W. H. B. Kent, (Barred), 1902; Rock Rose Farm, (Barred), 1625; Jules F. Francais, (Barred), 1603; James F. Macdonald, (White), 1456.

Rhode Island Reds

Charles H. Lane, 1856; The Orchards 1742; Sunnyfield Farm, 1703; Henry P. Walker, 1666.

White Leghorns

Hollywood Farm, 2042; L. E. Ingoldsby, 1973; Burchell & Janson, 1895; Ernest H. Scott, 1888.

Other Varieties

Obed G. Knight, (White Wyandottes), 2093; H. P. Cloyes, (Buff Wyandottes, 1616; A. E. Hampton (Black Leghorns), 1486; Clemens J. Diemand (White Wyandottes), 1409.

CROP CONDITIONS OCTOBER 1

California Cooperative Crop Reporting Service:

The composite condition of all crops in California on October 1 or at time of harvest was about 4.8 per cent below their ten year average condition on that date, compared to 7.7 per cent below average on October 1, 1920.

The condition of the various crops or of total production or average yield per acre on October 1, expressed in percentage of their ten year average (not the normal) on October 1, was:

Oranges	112.8
Lemons	103.6
Grain sorghum	103.4
xPrunes	98.6
Sweet potatoes	97.9
Potatoes	95.2
*Barley	94.6
Sugar beets	93.2
Corn	92.1
*Oats	90.1
Rice	88.3
xPeaches	88.0
Apples	87.2
Pears	84.3
Olives	84.0
Almonds	83.3
*Hops	82.5
Walnuts	82.4
Beans	81.9
Cotton	79.2
Grapes	73.3
Average of all October 1, 1921	92.4
Average of all October 1, 1920	92.3

xProduction.
*Average yield.

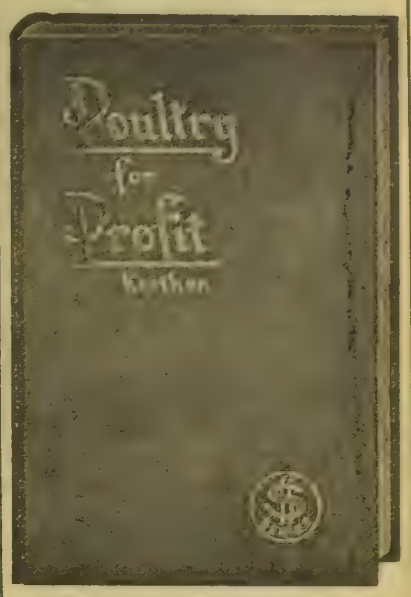
The National Tuberculosis Association announces its Christmas seal sale for 1921 as already well under way. The management writes: "The fight against tuberculosis is clearly moving toward victory. The death rate from this disease has fallen to the remarkably low level of approximately 120 per 100,000 population. This represents a saving of over 75,000 lives a year as compared with the death rate of 15 years ago, when we started the fight.

TOO WELL

Blackstone—Why did you fire that young bookkeeper, couldn't he balance his accounts?

Webster—Yes; but he started to juggle them!—New York Sun.

Poultry Can Be Made Profitable



Making use of information gathered from experienced poultry writers who have been guided by their practical experiences will always result in profit from poultry.

¶ ¶ ¶

"Poultry for Profit"

By Jean A. Koethen

TELLS YOU HOW To Successfully House, Feed and Raise Chickens, Ducks and Turkeys in California

This book is 5½x8 inches and contains 12 chapters, with over 225 pages of text and 18 pages of illustrations, printed on egg-shell book, binding full cloth vellum de luxe.

¶ ¶ ¶

Some of the Valuable Information in this Complete Book

Making a Beginning
Marketing
Housing and Yarding
Sanitation and Hygiene
Incubation
Fixtures and Conveniences
Brooding
Diseases and Vices
Feeding
Ducks and Geese
Breeding
Turkeys

Price $1.00 Postpaid

The Cultivator Publishing Company
115½ N. Broadway,
Los Angeles, Cal.

THE SHARPLES MOTO-MILKER

FOR ALL SIZED DAIRIES

Economical and Efficient, It Takes the Drudgery Out of Dairy Work

The Sharples Moto-Milker for Small and Large Dairies.

THE SHARPLES MOTO-MILKER is a new self-contained milking machine designed for the small as well as large dairies. Large dairies install two or more units. Mounted on wheels, it operates by electricity. The teat cups and suction method of milking are the same as those that have made the Sharples pipe line milker for large dairies famous.

THE SHARPLES MOTO-MILKER milks two cows at a time. With it one man or woman milks 15 cows in about 45 minutes. The cows like the SHARPLES MOTO-MILKER and there are hundreds of records where the cows give more milk when milked with it. No pipe lines, pulsators, tanks, stall cocks, or gauges necessary with THE SHARPLES MOTO-MILKER.

It has been proven by official tests on 108 dairies that the "Compressed Air Squeeze" of the SHARPLES MOTO-MILKER milks one-quarter to one-third faster than any other. Fast milking fosters increased milk flow.

THE SHARPLES MOTO-MILKER WILL SOON PAY FOR ITSELF IN WAGES SAVED AND IN INCREASED MILK. The action is natural—the most natural of any milker and anyone can operate it. WRITE FOR FREE DEMONSTRATION AND BOOKLET. IF YOU DO NOT HAVE ELECTRIC CURRENT WE CAN SUPPLY IT.

THE JOY-REAMS CO., 1908 So. Main St., Los Angeles

Southern California Distributors for the Sharples Moto-Milker and Sharples Cream Separators.

Northern California Dairymen write

JORDAN-HILL CO., 112 Market St., San Francisco

ARE YOU USING

GOPHER-SCENT?

The new method of killing gophers and squirrels.

Now is the time of the year to exterminate them and GOPHER-SCENT will kill them off so quick and sure that it will surprise you.

GOPHER-SCENT is a new method and a common sense, economical method of killing gophers and squirrels, fully demonstrated on this theory:

We all know that if fish is thrown in the yard it would be difficult to keep cats away. Why?

Because they like the taste and the scent attracts them. Gophers and squirrels are animals, too, and they have a taste for certain things.

GOPHER-SCENT is the one and only preparation that carries this scent and taste that gophers and squirrels like and which positively attracts and exterminates them. GOPHER-SCENT has met with instant success wherever sold.

GOPHER-SCENT is prepared in packages from 50 cents up. No mail orders filled. If your dealer doesn't handle GOPHER-SCENT notify us and we will supply him.

C. G. Woods Chemical Co.

Glendale, Cal.

Sold in Los Angeles by AGGELER & MUSSER SEED CO., and throughout other sections of the state by Hardware, Feed and Seed Stores.

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WRITE FOR PRICES

Used for Pumping, Wood Sawing, Spraying, Hoisting, Etc.

The Cushman is the Original and Only Successful Binder Engine

OUR NEW 1½ H.P.

With its distinctive features is well worth your investigation.

We will be pleased to give full information

Cushman Motor Works

E. Main Street Stockton, Cal.

Los Angeles Markets

Los Angeles, October 19, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price 51 cents.

Prices Creamery Extras last week:

Oct.	12	13	14	15	17	18
'21	51	51	..	51	51	51

CHEESE

Brokers prices:
California flats, 21@23.

EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 66; case count, 57; pullets, 44; pewee pullets, 30.

Extras last week:

Oct.	12	13	14	15	17	18
'21	59	60	..	63	64	66

POULTRY

Price to producers: Hens, 27; colored, 32; broilers, 40; roasters, 28; old roosters, 18; fryers, 30; ducks, old, 12; ducklings, Pekin, 3½ up, 25; others, 25; geese, 25; turkeys, live, young tom, 40; dr., 45; old, live, 35; dr., 40; hens, live, 35; dr., 40; squabs, 45@47.

Belgian hares, 17.

LIVESTOCK

Los Angeles, Oct. 18.—Weighed and delivered off cars without food or water:

Hogs (hard grain fed), 125 to 175 lbs., 9.00; 175 to 225 lbs., 9.50.

Cattle (on foot, gross weight): Steers, good, 6.50; medium, 6.00; cows, good, 5.00; medium, 4.50; bulls and stags, 3.00; calves, 125 to 150 lbs., 8.00; 175 to 225 lbs., 7.00.

Sheep: Ewes, 3.50@4.00; lambs, 7.00@7.50.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, October 18, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.

Potatoes: Demand and movement moderate, market steady. Lugs mostly 1.10@1.25. Stocktons: Burbanks, per cwt., best, 2.75@3.00; poorer, 2.00@2.50; special brands, 3.25. Idahos: Russets, 3.00; rurals, 2.50 per cwt. Sweet potatoes: Supplies moderate, movement slow, market steady. Locals: No. 1, 75@80; No. 2, 50@60 per lug.

Onions: Supplies liberal, movement limited, market firm. Locals: Spanish, per cwt., 4.00; per lug, 1.15@1.25. Stocktons: Per cwt., White Globes, 3.75@4.00; Yellows, 3.75@4.00; per lug, Whites, 1.25@1.40; Browns, 1.50.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock, October 18, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Supplies moderate, demand moderate, market steady. Per lb.: Kentucky Wonder, 6@7; Greenpod, 4@6. Limas, 5@7.

Bunch vegetables: Per dozen bunches: Beets, 40@45; carrots, 40@45; radishes, 15; turnips, 40@45; green onions, 10@15.

Cabbage: Supplies moderate, market steady. Per field crate, best, 2.25@2.50.

Cauliflower: Supplies moderate, market steady, 1.75@2.00, according to quality, poorer, 1.25@1.50.

Celery: Supplies moderate, movement moderate, market steady. Per crate, 4.00@4.50; poorer, 3.50.

Cucumbers: Supplies moderate, movement good, market stronger. Local, lug, 75@1.00.

Eggplant: Supplies liberal, demand moderate, market steady, mostly 3@4.

Lettuce: Supplies liberal, movement moderate, market weak. Mostly leafy stock. Locals: Field crates, best, 60@65; poorer, 40@50.

Okra: Supplies light, market steady, fancy, small, 9@12 per lb.; poorer, 7@8.

Peas: Supplies light, market firm, mostly 7@10; fy. Telephone, 12@13.

Peppers: Supplies heavy, market steady. Locals: Bells, green, 50@60 lug; ripe, 40@45 lug; Chili, 35@40; Red Pimiento, 70@80.

Pumpkins: Supplies liberal, market steady, 1@1½ lb.

Squash: Supplies moderate, market steady, summer mostly 35@40 lug; Hubbard, 1½ lb.

Tomatoes: Supplies moderate, demand and movement moderate, market stronger. Locals: No. 1, per lug; Pinks and Ripes, mostly 1.25@1.50; poorer, 75@90.

Turnips: Supplies moderate, market firm. Per dozen bunches, 40@45.

FRESH FRUITS

Apples: Supplies very heavy, demand and movement slow, market weaker. Locals: 2@4; few fancy Yucaipa Section, 5@6 lb. Watsonville: Fancy 4 tier Bellflowers, 1.40@1.50, mostly 1.40; poorer, 1.25@1.35; 4½ tier, 1.20@1.25, poorer 1.00; B grade 4 tier, 1.00@1.10. Utahs: Jonathans, 5@6 lb. Washingtons: Jonathans, extra fancy, medium size, 3.00; fancy, 2.75.

Cranberries: Supplies limited, market steady. Early Blacks, 17.00 bbl.; one-third bbl. 4.50@4.75.

Figs: Supplies liberal, demand moderate, market weaker. Locals: Per box, 50@1.25.

Grapes: Supplies heavy, demand moderate, market steady. Per lb.: Muscats mostly 5@6, Cornichons 6@7, Malagas 6@7 per lb., Tokays 7@8, Red Emperors 7@8. Black wine grapes, 100.00; White wine grapes, 70.00@80.00.

Melons: Cantaloupes, small crate, 1.25@1.50, poorer 85@1.00; Honeydews, small crates, 75@90; per lb., 1@1¼; Casabas, 1@1½ lb.. Watermelons, ½@¾ lb.

Peaches: Demand moderate, market firm. Wide range in quality and condition, mostly ordinary. Freestones mostly 1.00@1.50 per lug; best 2.00. Clings mostly 1.00@1.50, according to quality, all varieties 5; few, 6½; poorer, 3@4.

Pears: Demand and movement moderate, market weak. Bartletts mostly 5; few 6; poorer, 3@4 per lb.

Pomegranates: Supplies moderate, lb., 7@9.

CITRUS FRUITS

Grapefruit: Supplies moderate, movement moderate, market firm. Local: market pack mostly 3.50@4.00; small, 2.50@3.00; special packed, 4.50@5.00.

Lemons: Supplies liberal. Demand moderate, market weak. Locals: special pack mostly 5.00@5.25; market pack, best, 3.50@4.00; poorer, 3.00@3.25; loose box, 2.00@2.50; lugs, 90@1.00.

Oranges: Supplies light, demand good, market firm. Special brands mostly 6.25@6.50; market pack, 3.50@4.25; small sizes, 2.75@3.00; loose boxes, 75@1.00, mostly 1.00@1.25.

HONEY

Supplies throughout California are becoming lighter, especially of sage and orange honeys. Most sage and orange stock is in producers' hands in small lots of less than 100 cases. Supplies of alfalfa, although still moderate, are declining. Demand moderate but steady. Market strong with prices advancing slightly. The small crop of fruit in the East, and the high prices of jams now on the market due partly to the high sugar level last year, are considered to be in part responsible for the increased eastern interest in honey. Carloads f. o. b. usual terms: White Orange 11½@12; White Sage 11½@12; Light Amber Sage 8@8½; Light Amber Alfalfa 6@6½, mostly 6½. Several cars of the 1920 crop of California sage, alfalfa and mesquite recently offered, but the supplies of the old crop have become very light.

Beeswax supplies liberal. Growers receiving 20@22 per pound for crude wax.

NUTS

Cal. Walnut Growers Assoc.:
Opening prices to wholesalers:

No. 1 Softshell	27
No. 2 Softshell	20
Standard Budded	31

GRAIN AND FEEDS

Grain Exch. price bid Oct. 18:
Barley: 100 ton lots, Dec. del. 1.26.
Milo: 100 ton lots, Dec. del. 1.45.

HAY

Alfalfa Growers of California report:

The market for alfalfa hay continued firm throughout the week under a good healthy demand in practically all parts of the state, which readily absorbed the offerings listed by growers for sale at current prices. Prices remained firm and unchanged in the central markets; in some of the local marketing districts sales were made at an advance of one and two dollars a ton. Damage from the last rains in Southern California turned about 2,000 tons of marketing hay of dairy quality into fertilizer quality. San Joaquin Valley growers report yield per acre for the season is below the usual average.

There were 1,070 tons of grain and alfalfa hay received on the Los Angeles tracks the week ending October 15, with 140 tons held over.

Prevailing prices, delivered in vicinity of Los Angeles:

Choice Rabbit Alfalfa	$28.00
Choice Dairy	25.00
No. 1 Dairy	22.00
Standard	17.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats	20.00@26.00
Barley	16.00@24.00
Alfalfa, Rabbit	24.00@28.00
Alfalfa, No. 1 Dairy	19.00@21.00
Standard	16.00@18.00
Straw	12.00

San Francisco Markets

San Francisco, Oct. 18, 1921.

BUTTER

Extras 48½.
Prime Firsts 42.

CHEESE

Dairy Exchange quotations:

Cal. Flats	24
Cal. Y. A.	26

Oct.	12	13	14	15	17	18
'21	50	48½	50	50	50	48½

EGGS

Dairy Exchange quotations:

Extra	67½
Extra firsts	62
Extra pullets	46
Undersized pullets, No. 1	37

Oct.	12	13	14	15	17	18
'21	57	57	64½	64½	65	67½

POULTRY

Wholesale prices are:

Hens: Colored, per lb., 30@32; White Leghorns, fancy, 27@28; do, medium, 23@26; do, small, 22@24; young roosters, colored, 30@32; old roosters, 18@22; broilers, 45@50; fryers, 30@32; geese, 28@30; ducks, consigned, 20@25.

Pigeons: Old, 2.50 per doz.; squabs., 45@50 per lb.; do, fancy, 50; do, common, 3.50 per doz.

Turkeys: Per lb., 35; small spring turkeys, 40@45; dressed, 40@50.

Belgian Hares: Live, 16@18 per lb.; do, dressed, 25@28 per lb.

LIVESTOCK

Western Meat Co. quotes:

Weighed off cars at our yards in South San Francisco:

Cattle—No. 1 steers, 5½@6; do, second quality, 4¼; cows and heifers, No. 1 quality, 4¼@4¾; do, second quality, 3½@4¼; bulls and stags, 2½@3.

Calves: Light weight, 7@8; heavy, 5½@6.

Sheep: Wethers, 3½@4; ewes, 2½@3.

Lambs—6@6½.

Hogs—Hard, fat, grain-fed, weighing 125 to 200 lbs., 10; 200 to 250 lbs., 9; 250 to 300 lbs., 8; light sows, 8; heavy, 7.

California Farm Bureau Marketing Association reports:

No. Hogs	Ave. Wt.	Dock	Price
Tulare, October 11			
95	167	...	9.95
94	185	...	9.95
90	161	...	9.85
81	195	...	9.75
71	217	70	9.65
12	118	...	9.60
50	172	...	9.50
18	267	...	8.50
19	331	260	7.50
6 cars, 39 consignors, $9,450.17.			
Visalia, October 12			
33	187	...	10.05
57	160	...	10.05
4 feedrs	132	...	10.00
9	251	...	8.55
9	282	...	7.55
1	460	...	7.00
2 cars, 12 consignors, $2,947.82.			
Hanford, October 13			
84	193	...	10.60
17	174	...	10.30
32	163	...	10.00
19	225	...	9.00
2	350	...	8.35
16	585	100	7.00
3 cars, 17 consignors, $3,648.08.			
Corcoran, October 14			
89	195	...	10.00
76	186	...	9.90
2 cars, 7 consignors, $3,146.80.			
Bakersfield, October 15			
93	188	...	10.00
49	182	...	9.85
24	149	...	9.35
19	349	...	8.85
30 feedrs	134	...	8.75
2 cars, 12 consignors, $3,761.93.			

Total for the week, 15 cars, 87 consignors, $22,954.80.

These prices are f. o. b. shipping point, to the farmer, while the prices quoted by the newspapers are off cars at their packing houses.

POTATOES AND ONIONS

Street prices:

Potatoes: Street prices: River, 2.50@2.75; second grade, 2.00@2.25; Oregon Burbanks, 2.65@2.75; Salinas. 3.50@3.75; netted gems, 3.00. Sweets, 2½@3½ per lb.; Turlock Nancy Hall, 2½@3½ per lb.

Onions: New crop Yellow, 3.25; Brown, 3.75@4.00; Green, 1.50@2.00 per box.

Garlic: 3@5 per lb.

VEGETABLES

Wholesale selling price:

Artichokes: 6.00@10.00 case .

Beans: String, 3@5 lb.; Lima, 3@5.

Brussel Sprouts: 6½@8 per lb.

Carrots: Sk., 1.00.

Celery: 3.00@4.00 cr., bunch 30@40; bleached 4.00@4.50 cr.

Corn: Alameda, 2.00@3.00 sack; 2.00@2.75 cr.

Cucumbers: Bay, 40@50; fy. River, 75@1.00 lug.

Eggplant: 1.00@1.25 lug.

Lettuce: Crate, 75@1.00.

Okra: 1.00@1.50 per box of about 10 lbs.

Peas: 5@8 lb; fy., 8@10.

Peppers: Bells, 3@4 lb.; 50@75 lug; Chili, 3@5.

Spinach: 4 per lb.

Squash: Bay, 50@75 per 40 lb. lug; Italian Peninsula, 1.00@1.25 lug; cream, 75@1.00.

Tomatoes: Sacramento and Peninsula, 1.00@1.75, some 1.50@1.75.

FRESH FRUITS

Apples: Bellflower, 3½ and 4-tier, 1.50@1.65; 4½-tier, 1.15@1.25; B grade, 1.10@1.25; Alexanders, 3½ and 4-tier, 1.25@1.50; 4½-tier, 1.00@1.25; Rhode Island Greenings, 3½ and 4-tier, 1.50@1.75; 4½-tier, 1.00@1.25; Banana, 3½-tier, 2.25@2.50; 4-tier, 2.00@2.25; 4½-tier, 1.50@1.75; Red Cheek Pippins, 3½-tier, 1.60@1.75; 4-tier, 1.40@1.60; 4½-tier, 1.10@1.25; Jonathans, 3½ and 4-tier, 2.50; 4½-tier, 1.50@1.75; B grade, 1.50@1.75; Kings, 3½ and 4-tier, 2.00@2.25; 4½-tier, 1.50@1.75; B grade, 1.25@1.50; yellow Newtown Pippins, 3 and 4-tier, 2.00@2.25; 4½-tier, 1.75; B grade, 1.50; Spitzenburg, 3½ and 4-tier, 2.25@2.50; 4½-tier, 2.00.

Avocados: California, doz., large, 3.00@5.00; small, 1.00@2.00; Fla., 3.00@5.00.

Bananas: Eastern, 6@7; Hawaiian, 7@8.

Blackberries: 35@50 per drawer.

Cantaloupes: Flesh tinted, 2.00@3.50 cr.; River, 1.00@1.25 lug. Persian, 1.00@1.25 per small cr., 1.50 large; Honeydew, 75@1.00 per standard crate; Casabas, 50@75 per dozen.

Chestnuts: 25 per lb.

Cranberries: Bx., 4.50@5.50; Cope Cod, 15.00@16.00 bbl.

Figs: Black, double layer, 1.25@1.50; single layer, 75@1.25; do, white, single, 75@1.00.

Grapes: Per crate: Seedless, 2.00@2.50; Tokay, 1.50@1.75; black, 1.25@1.75; Malaga, 1.25@1.50; seedless, 3.50@4.00; black, 2.25@3.00; Tokay, 2.00@2.50; Muscat, 2.50@3.00 per lug; wine grapes, 115.00@145.00 per ton; white, 65.00@90.00.

Huckleberries: 8@11 lb.; fy., 15@18.

Melons: Persian, 1.00@1.25 per small cr., 1.50 large; Honeydew, 75@1.00 per standard crate; Casabas, 50@75 per dozen. Watermelons, 1.00@2.50 doz.

Peaches: Oregon packers, 1.50@1.75; per small box. Placer County, 1.00@1.15.

Pears: Bartletts, No. 1. wrapped, 2.75@4.00 box; Forelle, lug 75@1.50.

Persimmons: 2.50@3.00 bx.

Pineapples: 4.00@4.50 dozen.

Pomegranates: 85@1.25.

Quinces: 1.25@1.50 lug.

Raspberries: 50@80 per drawer.

Strawberries: Cr., 1.40@1.50; dr., 60@85.

Watermelons: 1.00@2.50 doz.

CITRUS FRUITS

Oranges: Valencias, 4.00@6.50 box. Lemons: Fancy, 5.00@6.25 box; do, choice, 4.50@5.00 per box. Lemonettes: Choice, 2.00@2.50; fancy, 2.50@3.50 per box. Grapefruit: Choice, 4.00@4.50; fancy, 5.00@5.50. Limes, Mexican, 2.50 bx.

BEANS

Below California Bean Growers Association shippers prices choice recleaned:

Large Whites	4.95
Small Whites	4.70
Pinks	4.75
Mexican Reds	4.90
Red Kidney	7.25
Henderson Bush	5.15
Cranberries	5.75
Bayos	5.40
Blackeyes	3.50

HAY AND FEED

Alfalfa Growers of California, Inc. report:

Prevailing prices last week f. o. b. San Francisco:

Choice Dairy Alfalfa	16.00
Standard	15.00

A. W. Scott Co. says:

Receipts of hay during the week were 1,399 tons as compared with 911 tons of the previous week. Although receipts were much heavier the firmness of last week has continued and values have tended better. Several large shipments have been reported moving from one portion of the interior to another and somewhat of demand has increased from the southern part of the state. Alfalfa has been moving in increased quantity and demand from all over the state has been much better. Quite a bit has been shipped lately and the surplus has been taken care of comfortably as it was ready for market.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the markets in San Francisco (for prices to consumers, charges of switching, cartage, commission and handling expenses must be added, according to conditions).

Wheat Hay No. 1	16.00@18.00
Wheat Hay, fair grade	13.00@16.00
Tame Oat Hay	13.00@15.00
Wild Oat Hay	10.00@12.00
Alfalfa Hay	12.00@15.00
Stock Hay	8.00@10.00
Straw	10.00@12.00
Rolled Barley	29.00@30.00
Ground Barley	31.00@33.00
Oats, Rolled Feed	34.00@36.00
Bran and Millrun	24.00@27.00
Middlings	40.00@44.00
Coconut Meal	22.00@25.00
Alfalfa Meal	21.00@23.00
Cottonseed Meal	38.00@40.00
Sugar Beet Pulp	29.00@30.00
Molasses Tanks	21.00 Barr. 25.00
Milo Maize, Corn Meal and Cracked Corn	38.00@41.00
Scratch Feed	44.00@46.00

GRAIN

Sales on Grain Exchange:

Wheat: Milling, 1.95@2.00; feed, 1.90@2.00.

Barley: Feed, 1.17@1.22½; shipping, 1.25@1.30.

Oats: Red Feed, 1.40@1.60; Seed. 1.65@2.00.

Corn: California yellow, 1.50@1.55; eastern yellow No. 2, 1.40@1.42; No. 3, 1.66@1.75; No. 3 Kaffir, in bulk, nominal; White Egyptian, 1.70@1.75; California red milo, 1.65@1.70.

Citrus Markets

Los Angeles, Oct. 19, 1921.

Summer fruits less in evidence. Valencias are commanding more attention and very satisfactory prices are being received. California grapes are still going forward rapidly but a shortage of refrigeration cars is holding back much which should be going forward. Valencias are commanding between $5 and $6 f. o. b. and some sales are being made in auctions approaching the $10 mark.

Lemons are meeting with good demand though some sales of indifferent stock are not at very satisfactory prices. First class stock is commanding around 4.00@4.50 f. o. b.

Shipments

Shipments of citrus fruits to date since November 1, 1920, Southern California: Oranges, 40,205 cars; lemons, 11,299; total, 51,504. To same date last season: Oranges, 29,729; lemons, 8,266; total, 37,995. From Central California to date this season: Oranges, 6,658; lemons, 212; total, 6,870. To same date last season: Oranges, 5,383; lemons, 288; total 5,671. From Northern California to date this season: Oranges, 305; lemons, 5; total, 310. To same date last season: Oranges, 261, lemons, 23; total 284.

AT THE AUCTIONS

October 12

Philadelphia: 4 or., 1 lem. Val. 4.35-6.70, lem. 2.15-3.85.

St. Louis: 2 or., 1 mixed. Val. 4.65-6.60, lem. 4.10-4.50.

October 13

New York: 26 or., 7 lem. Val. 4.20-8.70, lem. 3.35-6.55.

Boston: 9 or., 2 lem. Val. 5.90-8.50, lem. 5.70-6.40.

St. Louis: 2 Val. 5.40-5.75.

October 17

New York: 36 or., 6 lem. Val. 3.80-9.65, lem. 3.50-6.35.

Boston: 15 or., 3 lem. Val. 3.00-7.40, lem. 4.10-7.20.

Cleveland: 6 or., 1 lem. Val. 4.05-6.85, lem. 4.25-4.75.

Pittsburg: 8 or., 2 lem. Val. 4.20-6.05, lem. 1.65-5.45.

St. Louis: 4 Val. 3.80-6.35.

October 18

New York: 23 or., 1 lem. Val. 3.15-8.90, lem. 4.40-4.55.

Boston: 3 or., 2 lem. Val. 4.50-7.95, lem. 5.10-6.95.

Philadelphia: 7 or., 2 lem. Val. 4.30-9.25, lem. 1.50-3.85.

Pittsburg: 2 Val. 3.75-6.15.

THE FESTIVAL OF DATES

By Carl Downing

IN a display such as has never before been attempted in the United States Coachella Valley will, October 21, 22 and 23, tell the world that the most profitable fruit in all the world, the finest and most costly fruit grown, may be commercially produced there. For then it is that the International Festival of Dates will be held at Indio, and every grower in Coachella Valley, every business man and every land owner whatever he grows is behind this fair with his pocketbook and his enthusiasm. The people of Coachella Valley, which once upon a time was called the "desert," will show that the sagebrush has been displaced by gardens that will make California known better than it has ever been known before. After 17 years of toil and experiment the date is established as a commercial fact.

There are in Coachella Valley some 55,000 acres suitable for dates of which about 1,200 acres have been planted. There are more than 600 acres of seedlings, but the seedling holds the same relation to the date that the seedling orange does to the fine varieties. While many like the taste of the seedling as well as that of the higher priced varieties, it does not keep so well. Growers this year, however, have been selling fresh seedling dates at 40 cents per pound and have been making big money. There is no doubt an acre of good seedling dates is as valuable as an acre of Valencia oranges.

AYRSHIRE BREEDERS

The Ayrshire breeders of California will meet at Hotel Bellveu in San Francisco at 8 p. m. on the evening of October 26 for the purpose of forming a state organization.

CATTLEMEN'S ASSOCIATION REPORT

October 17, 1921: During the first week of this month packing companies at Los Angeles bought cattle in the Kansas City market, paying $4 for several cars of grass fed cows and $5.20 for about 20 cars of grass fed steers. Taking into account freight rate, shrinkage, and loss due to bruises, this price is equivalent to at least $7 in California. Due to our shortage of prime beef as well as feeders and stock cattle in California, packers will undoubtedly find it necessary to occasionally buy outside the state. The association feels, however, that California cattlemen should receive first consideration and should be paid an equal price. Sales have been reported from San Francisco Bay counties, averaging 6½c for steers f. o. b. ranch. One or two loads have sold for 7c. These cattle can be put on the market for one-quarter cent freight rate. Sales in Tulare County of prime steers now on good stubble are reported for November and December delivery. November deliveries will bring 7c and December deliveries 7½c. They will be weighed on the ranch and will average about 1,100 pounds. These are for local delivery. Reports reach us that local banks need considerable education regarding the War Finance Corporation money to cattlemen. Most local banks are cooperating 100 per cent. The California. Cattlemen's Association stands ready to assist wherever any local bank is reported to appear unwilling to help secure War Finance Corporation funds on cattle. Report all such cases. Do not ship on consignment. Sell only f. o. b. ranch. Offer only prime cattle for sale. Beware of the speculative buyer who does not buy directly for a packing company. He is most active on a rising market. His profit belongs to you.—R. M. Hagen, Secretary.

Mutual Husbandry Club

NOW BEING FORMED TO DEVELOP A

New Irrigation District in Fresno County

Let us tell you all the details of the Mutual Husbandry Club. There are thousands of acres of land in Fresno County with unlimited agricultural possibilities when put under irrigation.

We want 500 members to vote the district — more than 250 have already joined. Members of the Club can obtain land at dry land prices of $50.00 per acre. Big profits can be made when district is voted.

MAIL THIS COUPON TODAY

Howard & Butterbaugh Land Co., Trustees For Mutual Husbandry Club, 302 New Pantages Bldg., Los Angeles, Calif.

I am interested in the Mutual Husbandry Club and would appreciate full particulars.

Name .....

Address .....

Howard & Butterbaugh Land Co.

Trustees for Mutual Husbandry Club

302 New Pantages Bldg.

Los Angeles Calif.

Montague Pipe and Steel Company

RIVETED WATER PIPE

Riveted Steel Pipe, Oil and Water Tanks, Steel Flumes, Siphons, Stacks, MONTAGUE WELL CASING.

WRITE FOR PRICES

Montague Pipe and Steel Co.

Office:
804 Hobart Bldg., San Francisco
Phone Kearny 698 and 699
Works: 17th and Kentucky Sts., San Francisco Phone Market 6909

Plant Winter Rhubarb FOR PROFIT

Growers netted this year $1000 per acre. This is the best time to plant for full crop next winter and spring. We can supply plants—all sorts for large fields. Write for price list.

J. B. WAGNER

Rhubarb and Berry Specialist. Pasadena, California.

Turn Your Stump Land into Dollars

A "K" Horse Power or Hand Power Stump Puller *will make your stump land worth six times its present value. Used by U. S. Government. Guaranteed* for five years—works on side hills, marshes, anywhere—pulls any stump a 1-in. cable will hold. *Write now* for *free book* explaining Special Offer and how you can *Increase the Value of Your Land Through Pulling Stumps.* Address me *personally.* You deal direct with me.

W. J. FITZPATRICK 241 Tenth Street Box 16 San Francisco

Land Clearing Easy—big stumps pulled clean with the wonderful *K* puller.

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We have the Fruit Trees that will please you. You benefit by ordering early.

L. E. WALTER, S. B. THOMPSON: Proprietors. MOUNTAIN VIEW, CALIFORNIA

WARR IMPLEMENT COMPANY

Manufacturers and Distributors of

Farm Machinery

110 N. Los Angeles St., Los Angeles

Bdwy. 5038

88 REGISTERED HOLSTEINS 88
AT PUBLIC AUCTION

Palo Alto Stock Farm
Palo Alto, Calif.
Wednesday, November 9
at 10 A.M.

This offering, the first individual public sale from this well known herd; is composed very largely of young cows and heifers of famous blood lines, many with excellent short or long time records, or both, and includes a large number of daughters of

KING PONTIAC SEGIS KORNDYKE, who now has 31 A. R. O. daughters. He is a 30-pound son of King Segis De Kol Korndyke, full brother to King Segis Pontiac.

FINDERNE KORNDYKE NETHERLAND, a son of King Pontiac Segis Korndyke, out of a 31-lb. daughter of Gordon Glen Pontiac.

CARNATION SEGIS WALKER, a son of Johanna McKinley Segis, out of a paternal sister to Segis Pietertje Prospect, the world's record milk cow.

RAG APPLE IMPERIAL KORNDYKE, proven son of Rag Apple Korndyke, and whose daughters are now making some excellent long time records.

This sale affords a great opportunity for selection of young females bred in some of the greatest producing lines of the breed.

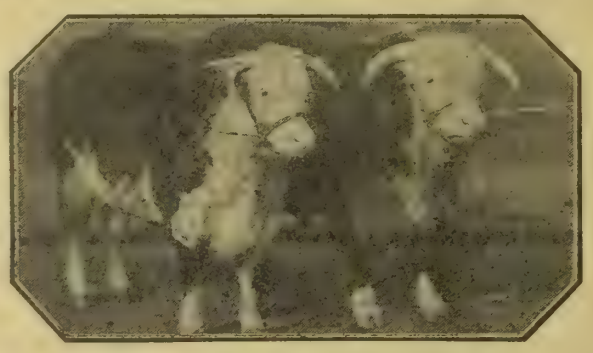
EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OLD TUBERCULIN TESTED AND SOLD SUBJECT TO RETEST BY THE BUYER.

CATALOG OF SALE FREE ON REQUEST

Management

California Breeders Sales and Pedigree Co.

C. L. Hughes, Sales Manager, Sacramento, Cal.



35 TOP NOTCH HEREFORDS
— AT PUBLIC AUCTION —
California National Livestock Show Grounds

SAN FRANCISCO
Wednesday, October 26, at 1 P.M.

Providing an opportunity right at home to buy Herefords of most approved character and breeding. The cattle for this sale will be seleeted largely from the show herds of leading breeders in Nevada, Oregon and California, by a committee representing

Pacific Coast Hereford Cattle Breeders Association

J. I. Cazier, President — J. A. Bunting, Secretary

The wonderful exhibit of young Herefords at this year's California State Fair was a revelation of the amazing progress the breed has made in California during the past few years, a progress that is right now only at its beginning.

Why not lay your foundation in this sale for one of the most useful, most profitable agricultural activities—the breeding of registered Herefords.

Write for circular and catalog of sale

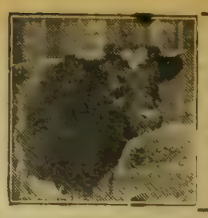
HULL, Auctioneer — BUNTING, In the Ring

MANAGED BY

CALIFORNIA BREEDERS' SALES AND PEDIGREE CO.

J. M. HENDERSON, President — C. L. HUGHES, Sales Manager

211-212 OCHSNER BLDG. — SACRAMENTO, CALIFORNIA



Topped Market Every Time

Geo. H. Darrington, Honey Creek, Ia., has topped the Omaha market four times this year—every time he shipped—with Shorthorns of his own raising, twice with steers, once with heifers and once with cows that were twelve years old when marketed. They were purebreds.

It pays to grow Shorthorn beef.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION
13 Dexter Park Ave., Chicago, Ill.

Straloch Farm
Davis, Cal.
(2½ Miles West on Highway)

Shorthorns
Herd Sires:
California Model 635776
Imp. Braywood Collynie 951409

Poland China Swine
Big—Prolific—Easy Feeders—
The Farmers' Kind.
Prices Reasonable

Hampshire Sheep
The top and the high average at the 1921 Davis sale. The kind that sire early market topping lambs. We have what you want at prices you can afford to pay.

Visit the farm at any time.

J. I. Thompson, Manager — C. Harold Hopkins, Owner

A. M. Easton — Wm. A. Ward

Blackhawk Ranch Shorthorn Cattle

One of the most select herds in America. Only Scotch females of the best families headed by

ROAN RADIUM
COLLYNIE PRINCE LAVENDER
Imported direct from the famous Duthie herd.

SHIRE HORSES
A great opportunity for interested parties to buy a stallion at the San Francisco show. For prices and particulars see E. LOVELL, Mgr.

Diablo, Contra Costa Co., California

Rosebud Shorthorns

A Choice Herd of Fifty Females Headed by Milmar Stamp a Cruickshank Secret

We can now offer a few extra good young bulls that we do not hesitate to recommend. They are well grown and correct in type and quality. We invite you to visit our herd or to write us your needs.

Edinger-Johnston Company
Hood, California
(Just south of Sacramento.)

IMPORTED
Corston Masher

Senior Champion at 1921 California State Fair heads our selected herd of
SHORTHORNS
and we can offer some rare bargains in Scotch and Scotch topped cows and heifers, some with calves at foot, and rebred to the above bull. Most of the heifers are by Double Callant, a grandson of Avondale. Write us for prices and particulars.

Warm Creek Land and Livestock Co.
J. Selby Badt, Pres. & Mgr., Wells, Nevada

Sale Cancelled

Owing to a number of heavy private sales I will be unable to hold my public sale of Shorthorns as advertised for November 2d. I will therefore offer a number of young bulls, cows and heifers that are suitable for foundation material.

W. M. CARRUTHERS
Live Oak — Cal.

THE SIXTH SALE OF
SHORTHORNS
Under Auspices of California Shorthorn Breeders Association
Will be held at

San Francisco, Thursday, October 27, 1921

CONSIGNORS:

Caledonia Farms	Ormondale Ranch
Blackhawk Ranch	Pacheco Cattle Company
Jack London Ranch	Straloch Farm
William Bond	T. S. Glide
Rancho San Julian	Howard Vaughn

These animals have been selected as representative, and worthy to be sold during such an important event as the California National Livestock Show.

Auctioneer: H. L. Hull, Des Moines, Iowa
Reduced Passenger Rates on all Railroads.
For Catalog of This Sale Apply to
California Shorthorn Breeders Association
222 Sharon Building — San Francisco, Calif.

Herd Bulls
Harris Standard 2d
Beau Blanchard 76

Nevada Hereford Ranch
J. H. Cazier & Sons
Wells, Nevada

A government accredited herd. No reactor in 16 years. A herd whose record in the show and sale ring is only surpassed by the esteem accorded its productions by cattlemen. We can furnish bulls or females to fill any need—and at sound prices. Visit our herd or write for information.

GUASTI BERKSHIRES

We are breeding some awfully good Berkshires and are having very good success in the shows this fall.
We can supply your demand for
Big Modern Type Berkshires
in any class at reasonable prices.
Inquire about our bred gilts and young boars.

ITALIAN VINEYARD COMPANY
Alex. M. Wilson, Supt. — Guasti, Cal.
P. S.—Farmers and pig club boys given special attention.

UNIVERSITY OF ILLINOIS

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LVII — October 29, 1921 — No. 18

California Nurserymen and Avocado Growers in Annual Banquet

The Nurserymen's Eleventh Annual Convention was held in Los Angeles this year in connection with the First California Flower Show and Horticultural Exposition. The closing event was added to by participation on the part of the Avocado Association, and avocados were features on the menu from soup to nuts. Photo by M. F. Weaver

Established 1877 Forty-fourth Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877

Combined with California Cultivator 1914 Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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Copy for change of advertisement must be in the office on Saturday preceding date of issue. New advertising copy must be in the office Tuesday preceding date of issue to insure insertion.

Advertising rates furnished on application.

The Sacramento office is Room 210 Ochsner Building. All mail pertaining to livestock should be addressed to our Sacramento office.

The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

Member

Eastern Offices:
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S. E. Leith, Fifth Avenue Building, New York.
C. A. Cour. Globe Bldg., St. Louis, Mo.

Member Audit Bureau of Circulations.

Entered as second-class matter February 12, 1900, at the post office at Los Angeles, California, under the Act of March 3, 1879.

Saturday October 29, 1921

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

If among the more than 40,000 Cultivator's weekly circulation any fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

EDITORIALETTES

The banquet tables shown on the cover are loaded down with 500 pounds of California's finest avocados. The load is soon lifted, however, in gratification of the appetites of the several hundred people shown gathered about the tables. That banquet is abundant evidence of the interest of Californians in this newest of the old-time fruits.

* * *

R. N. Wilson, scretary of the agricultural legislative committee, on the convention floor in Los Angeles this week reviewed some of the accomplishments of the committee, or, rather, some of the steps necessary to take to secure recognition in the state legislature of the California farmer. Heretofore, the lobby has been largely dominated by "The Interests," and "lobby" is not even yet considered as entitled to admission to the best society. But this committee went squarely after what it wanted, and it let the fact be known that California farmers to the number of 60,000 were squarely behind the committee and were going to know the reason why if the more important legislation requested was not granted. This attitude and the cut of Wilson's jaw was sufficient, and the farmer got what he went after—at least in part. He is going after more, which he will get, and at the same time insist on quick justice to all other classes. The legislative committee which was appointed two years ago at Chico is still in existence, and unanimous action at the Los Angeles convention continues the same membership.

* * *

Will the fruit growers secure an all inclusive, nation wide organization which shall market, or at least aid in marketing, fruits of the United States? The question was brought up in the recent convention when it was announced that two California delegates had been selected to represent the farm bureaus of this state at the meeting of the American Farm Bureau Federation. California's delegates are Sheridan W. Baker of Santa Rosa and Mr. Edwards of Redlands. Delegates from other states of the Union bring the total membership of this committee up to 21, and it is anticipated that it will discuss the general fruit situation of the United States from a producer's standpoint and possibly may secure the organization of the fruit growers somewhat along the line of that of the U. S. Grain Growers, Inc., which already has under contract from American farmers over 30,000,000 bushels of wheat.

* * *

So far as any expression was made on the floor of the convention Californians will welcome an organization somewhat along the line of the Citrus Protective League which pays no attention whatever to marketing, leaving that to the individual shippers or associations but taking cognizance of national legislation, transportation and others of the larger problems affecting all interests alike. But to make this new force a marketing organization to supervise cooperative marketing associations as now formed, expressions of California fruit growers are almost unanimous as opposed to such a movement. As Mr. McKevitt remarked: "The difference between California and Eastern fruits in nature or character and in location and the problems which come because of these differences are so great that it is impossible to handle these two great producing sections from one central office."

* * *

Wherein there may be closer affiliation, however, between Eastern and Coast fruit growers is for both, working through, perhaps, the bureau of marketing and crop reporting, to give to each other more definite information as to markets to which fruit is being shipped, the earliness or lateness of the season, quantities as compared with other years, consumers purchasing power and numberless other items which would aid materially in placing fruit where needed and with much lower percentage of losses than is all too common.

THE CULTIVATOR MOVES

After a third of a century within stone's throw of First and Broadway, Los Angeles, the California Cultivator has moved. The new location is at 317 Publishers Trade Building, Third and Central Avenue. This move has been made necessary through the increase in the business of the Cultivator. The larger space in the new quarters makes for effective work in the entire publication department. New presses and more linotype machines demanded have nessitated more room; the mailing facilities have been increased; and elevators and modern equipment generally will make for a better Cultivator than ever before.

With the Cultivator a number of other publications are centered in the new location. It is a bit removed from the Cultivator's beaten path, but a most cordial welcome will always be extended to friends of the California Cultivator.

Remember the new location, 317 Publishers Trade Building, near Third and Central Avenue. It is but a short distance from the Southern Pacific Station.

SHIP BY WATER

Some fruit growers are rather hard hearted as to the sorrows of the higher officials in our big transportation companies. But there are others who may be influenced by burning eloquence and smooth logic, and these had an opportunity to feel genuine sorrow for these officials in the fruit growers convention.

The losses to fruit growers and to vegetable shippers and others have been recounted, and the excessive freight charges referred to, but after eloquent and logical presentation of the case of the railroads it appeared that the difficulties confronting the railroads are so infinitely greater than are those of the fruit producers that they, the fruit producers, may yet come with the suggestion that their present rates be raised. More seriously, there are two sides to the transportation problem, but the injustice suffered these many years by the fruit shippers has put the grower into an attitude of everlasting antagonism so that it is hard to give simple justice to an institution which has, at times at least, been more or less shifty.

A case in point: The recent offer to reduce freight rates on citrus fruits if citrus growers would discontinue water shipments. Another: Offer by the Western roads to make material reduction providing Eastern roads would participate in the reduction. This passing of the buck resulted, as anticipated, in failure to get any reduction. All of which is very enlightening but darned unsatisfactory.

Meantime the citrus fruit shippers have committees at work formulating plans for a line of ships all their own. Shippers the country over are holding their breaths and wondering, "Dare they do it." Establishing a line of a half dozen or more ships to ply between Atlantic and Pacific ports involves vastly more than the layman at first imagines. Not only must millions be raised to purchase or guarantee leases on ships, but arrangements must be made for dockage and initial transportation, and then at the consumer's end, other dockage or opportunity for disposal of the fruits to dealers. At present practically all available pier space for auctions or other fruit disposal is under control of the railways. The railways, naturally, are not particularly solicitous as to the success of the movement, hence are not offering material accommodations to any new line of ships.

Some exceptionally long thoughts are required before California fruit growers will have their line of ships established. But California fruit growers have handled some big things, and their present effort is well worth watching, and a great number of us are saying: "God speed you."

OPEN THE DOOR

At the Fresno convention of the state nurserymen there was one open meeting which gave to the people of Fresno a fund of information as to the importance of the nursery industry to California. That meeting was in a large assembly hall decorated with a vast quantity of products of California nurseries and flower gardens. Hundreds of Fresno people listened to addresses on the industry, and we believe the meeting resulted in much of good and of publicity for the industry.

The Los Angeles meeting just ended was conducted along materially different lines. The assembly hall was in the basement of the Armory Building and notwithstanding liberal decoration with palms lacked the cheer and brightness so necessary to fullest enjoyment. We do not think that at any session there were more than two or three dozen people present. Of course those who attended were vitally interested in the industry and so far as business sessions were concerned perhaps as much was accomplished as was desired but the fact still remains that opportunity for a great amount of publicity and for creating good-will and giving information as to the magnitude of the business represented by attendants from all parts of the state was lost, this in part because it was necessary for many who would attend to do so only through the gates of the flower show, which called for a 50 cent admission fee.

California Cultivator

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A Great Convention Week for the Big Four

THE NURSERYMEN'S CONVENTION

By Ernest Braunton

THE eleventh annual convention of The California Association of Nurserymen opened at Armory Hall, Exposition Park, Los Angeles, October 20, at 1:30 P. M., the entire forenoon's program, as printed, being waived to give the members a chance to first see the mammoth flower show staged on the same dates as the convention. Even after luncheon the attendance was light, but the program was carried out as printed.

The first number was "The Bergtholdt Plan: What It Means To Nurserymen," by Past President J. E. Bertholdt of Newcastle.

The next was a paper on The Nursery Industry and Taxation, by E. D. Moore, followed by one on Nurserymen's Bud Selection Association: Its Progress, which will appear in a future issue. A most valuable paper was then read on Quarantine No. 37 and the Plant Industry, by Dr. R. Kent Beattie, pathological inspector federal quarantine board, of Washington, D. C. This paper will appear in full in our early issue.

Walter B. Clarke of San Jose then read a comprehensive paper on the possibilities of California supplying American markets with nursery products heretofore imported. Bulbs were first dealt with and Mr. Clarke showed that nearly all the leading ones can be successfully produced here but some sorts are still imported at such low prices as to prohibit commercial culture in California. In shrubs the outlook is very promising and the amount of such stock is rapidly increasing. In kentia palms an unusual activity is reported. A firm at Sierra Madre, Los Angeles County, has a growing stock of more than a million plants, while nearby Montebello has 300,000, Santa Barbara reports 30,000, and there are many smaller lots. California is at present producing annually more than 3,000,000 rose bushes.

The other papers read and speeches made the Cultivator will give in full or notes of mention in future issues. Owing to lack of time or conflicting attractions some were not given, reports of committees were not read or filed, but all will eventually reach the secretary.

On Friday afternoon a considerable number of delegates were lured from the flower show to visit the plant growing establishments of Wilcox & Co. and Howard & Smith, Montebello; Bassett & Washburn, Sierra Madre, and the large gardens of H. E. Huntington at San Marino. On Saturday afternoon a similar trip was made to the plants of the Beverly Hills Nurseries and Armacost & Co., Sawtelle.

Saturday forenoon officers for the year 1922 were elected as follows: President, J. W. Barnicott, Newcastle; vice-president, Donald MacLaren, San Francisco; secretary-treasurer, H. W. Kruckeberg, Los Angeles.

NEWS FROM THE CONVENTIONS

By C. B. Messenger

IT has been a lively convention week. The nurserymen were first to open their sessions on Thursday afternoon. So many of them were busy with the installation of exhibits that the attendance was not so large as anticipated. Reports of various committees, including legislation, transportation, etc., were deferred, and the afternoon program began with discussion by J. E. Bergtholdt of Newcastle. Mr. Bergtholdt outlined his plan in effect that it included two features. The first was to educate the housewives of America in the necessity of greater consumption of California fruit, this to be accomplished through cooperation of all the housewives and distribution of millions of copies of a book which should have value in educating as to healthfulness of California fruit, the book to be edited by one who could make it a classic or a publication which would be so sought that it would reach practicaly all the country's hundred million inhabitants. California's fruit industry aggregating 250 million dollars per year, together with several thousands of millions of investment, is amply able to finance such a publication. The second part of his program has to do with an educational and selling campaign with the trade of the country, this to be taken up especially with retailers with the general plan that they shall be induced, so far as possible, to specialize on California products. Mr. Bergtholdt does not expect a half, nor a fourth, nor perhaps a tenth of the grocers to unite in this campaign but he feels sure there are some who will in every community.

California is growing more and more fruit and has lands capable of producing manifold more than at present, and as that industry grows and prospers California's prosperity will increase.

Saturday afternoon's session was devoted entirely to the avocado. Addresses were made by Robert W. Hodgson, Los Angeles County farm adviser, Dr. J. Eliot Coit, Director Hecke and others. Dr. Coit touched upon the avocado, the tree, the fruit, the industry. Mr. Hodgson enlarged upon its food qualities, its healthfulness, and the desirability of extending use among all the people. Director Hecke brought greetings from the state department of agriculture and urged that the avocado growers use the department, which stands ready to serve at all times and in every way possible. The officers of the association are W. L. Hardin, president; A. F. Yaggy, vice-president; J. M. Elliott, treasurer; R. Agnes McNally, secretary.

The nurseymen's annual banquet was combined with the banquet of the Avocado Association and was held at the Ambassador Hotel. The best comment on attendance is given on cover page of this issue.

A Group of Nurserymen and Members of the Ladies' Auxiliary.

George H. Hecke, director of state department of agriculture, is in the center foreground. At his left is Henry Kruckeberg, secretary-treasurer of the California Association of Nurserymen. Next to the right is J. W. Barnicott, president of the association. At his left is Roy F. Wilcox, past president of the association.

President Hardin of the Avocado Association acted as toastmaster and held both speakers and audience well in hand. He expressly requested all speakers to make their remarks as short and to the point as possible, this for two reasons, first, many wished to break away to attend the flower show and besides, as he suggested, a good speech is like a woman's dress, it must be long enough to cover the subject and short enough to be interesting. The speakers to a man obeyed his request.

Former President Wilcox gave a short review in which he touched upon the magnitude of the nursery industry and especially referred to the promise of that comparatively new fruit, the avocado.

J. M. Elliott, who has large avocado interests in the North Whittier section, gave a few notes from its history since the days when the Spaniards first landed on the New World shores and saw the fruit which, as nearly as they could learn its pronunciation, was called the avocado. He touched especially upon the efforts of the government to introduce new varieties by sending explorers to practically all semi-tropical and tropical countries. But in all the world there are no finer avocados grown than may be produced by proper selection and tilth in California. We must propagate, disseminate, standardize.

Mr. Barnicott, new president of the Nurserymen's Association, appreciated the opportunity of commending nurserymen and avocado growers for their ability to get together in a sociable, friendly way.

Secretary Kruckeberg gave some figures which show the magnitude of the nursery and seed industry of California. From recent estimates it appears that the annual turnover in the nursery trade of this state is in excess of $10,000,000. This is thought to put California in the front rank of the nursery trade of the country. New York is the nearest competitor and produces very nearly the same amount as does this state, but in seed production California easily stands first with an annual value of more than $17,000,000.

The state fruit growers convention opened on Monday morning with good attendance and a program which brought attendants from practically every county in the state. The representation from the north was exceptionally strong, and there were many representatives of the U. S. department of agriculture. The program is being followed as given in the California Cultivator, the most interesting features being those having to do with transportation. The transportation committee's report and addresses made brought out very warm support of the railroads from officials of the Santa Fe and the Southern Pacific. These addresses are causing comeback on the part of California fruit growers and shippers which is giving real pep and punch to the program. Particulars in next issue.

FARMER COOPERATORS NO TRUST

The right of farmers to unite and employ business methods in the disposal of their products is being recognized and even demanded. There is deep resentment of the treatment which has been given them, and the following resolutions presented on the floor of the state fruit growers convention by Col. Weinstock met with rousing and unanimous approval:

Whereas, the farmers of this country in their endeavors to organize and maintain cooperative marketing associations which have for their end the establishing of high product standards, the elimination of waste in the cost of distribution, the broadening of markets and the stabilizing of prices, all in the common interest of producer and consumer; and

Whereas, the opponents to such activities, confined as a rule to speculative buyers and great vested interests, have left nothing undone to hamper, to harrass and to destroy such associations; and

Whereas, in such endeavors farmers and their associations have at various times been indicted for alleged violations of the Sherman anti-trust law, and despite the fact that no convictions have been secured because of the baseless character of the indictments, the farmers have, nevertheless, been subjected to humiliating imprisonment pending trial, to costs in defending themselves in excess of $100,000, and the scorn of the public for the time being as alleged profiteers and exploiters; and

Whereas, the claim made by opponents that such cooperative marketing associations tend to create possible

(Continued on Page 442.)

Agricultural News Notes of the Pacific Coast

Northern California

Sonoma County's grape harvest is practically over.

Forty sacks of paddy to the acre is reported by a rice grower east of Arbuckle.

The Lodi Sentinel reports this year's grape crop already 4,000 cars ahead of last season.

The Farmers Protective Association meets at Pleasanton, Alameda County, today, October 22.

Shortage of refrigerator cars has seriously embarrassed San Joaquin County grape shippers.

The Lodi district of San Joaquin County had up to October 13 more than 11,000 carloads of grapes.

The California Bean Growers Association has planned a series of meetings to enlarge its membership.

Grape growers of Sonoma County are now assured of 40 refrigerator cars daily for shipment of their grapes.

The Pacific Fruit Exchange reports sale in one day last week of 32 carloads of Tokays and Zinfandels for $63,226.

Yuba County supervisors have asked the state highway commission to locate the Ukiah-Tahoe highway on the north side of the Yuba River.

There have been so many thefts from vineyards near Lodi, San Joaquin County, that growers estimate at least $20,000 worth have been stolen this season.

A tractor school will be held in Sonoma County, December 11-24, location yet to be determined. The farm adviser's office at Santa Rosa will furnish information.

Secretary Ross of the Lodi Growers and Shippers League says that close to 95 per cent of the district's Zinfandel grapes have been shipped and 50 per cent of other varieties handled.

Horticultural Commissioner Stabler of Sutter County reports that there are now 27,326 acres of trees and vines in Sutter County with 14,657 acres in bearing. Peaches, mostly the canning varieties, lead with 5,220 in bearing.

Hearings to establish a basis for rate adjustments of the principal electric power companies of Northern California are scheduled by the state railroad commission for the three months beginning October 25. Commissioner Chester H. Rowell will preside at the investigations.

Methods and practice of graftage, as well as actual practice in grafting, will form an important part of the Deciduous Fruits Short Course to be given by the University of California at Davis, November 28 to December 10. Members of the course will be furnished with the proper tools and will actually perform the operations of graftage under the direction of skilled instructors.

California Fruit Growers and Shippers Protective League has been organized to work for reduction in freight rates. The officers are: President, F. H. Buck, San Francisco; vice-president, George H. Cutler, Sacramento; second vice-president, Scott F. Ennis, Sacramento; secretary-treasurer, F. B. McKevitt, Sacramento; executive committee, F. H. Buck, George H. Cutler, Scott F. Ennis F. B. McKevitt, J. E. Bergtholdt of Newcastle and Frank T. Swett of San Francisco.

Central California

Fresno County has one automobile for every four persons.

Prune growers of Richgrove, Tulare County, have sold their dried fruit at $140 per ton.

The Inyo County fair held at Bishop October 4-5 showed an exceedingly fine lot of poultry.

The Ceres center of the Stanislaus County farm bureau met October 27 to discuss sanitation.

Nine boys from Tulare County pig clubs attended the annual convention at Davis last week.

Sequoia and General Grant national parks showed an attendance last season of nearly 60,000.

A carload of strawberries was shipped from Watsonville to New York the last of September.

Oakdale, Stanislaus County, shipped out six carloads of almonds last week, four going from the association plant.

W. V. Shear of the state department of agriculture has been giving demonstrations in potato grading in Inyo County.

Dr. Boncquet of Tulare County claims that the orange standardization worked out last year was entirely unscientific.

The almond crop in the Richgrove district of Tulare County has proven very spotted, some sections having heavy crops, others giving poor yield.

Farm Adviser Mayhew of Monterey recently gave field demonstrations in eradicating morning glory by use of carbon bisulphide.

Hog auction sales will be held in Kern County at McFarland, November 25; Wasco, December 3; Bakersfield, 17; McFarland, 23.

The Libby, McNeil & Libby cannery at Selma, Fresno County, employs from 300 to 700 workers during the year, a large proportion of whom are women.

President Walker of the State Farm Bureau Federation addressed Monterey County farmers at Lockwood last week on bulk handling of grain and cooperative marketing.

Waterford's annual harvest festival and community fair brought out a very large attendance. It was held under the auspices of several improvement societies of that section.

The second crop of Muscats in Kings County shows well over the required content of sugar, having more favorable weather than the first crop

Tulare County will ship about 125 carloads of pomegranates. The Tulare County Lemon and Grapefruit Growers Association reports return to growers of from five to nine cents net from these shipments.

Prof. W. V. Cruess of the state university is telling olive growers that they can ship olives more satisfactorily to Eastern points in brine than in lug boxes. He believes that a considerable market may be developed for these brined olives for home pickling.

The appointment of J. O. McKinney, formerly deputy commissioner of Monterey County, as horticultural commission of San Benito County has just been announced. Mr. McKinney succeeds Donald L. Currier who resiged to accept a position with the San Jose Spray Manufacturing Company.

Southern California

Date Festival at Indio, October 21-23.

A fair was held at El Centro, October 22-28.

More than 60 fumigation crews are operating in Los Angeles County.

Santa Barbara County now has a farm bureau marketing exchange.

Farmers and Fruit Growers Convention at Los Angeles last week.

Estimate for the walnut output of Ventura County is 60 per cent of normal.

Membership dues of the Los Angeles County farm bureau will remain at $2.50.

Avocado Day at the Farmers and Fruit Growers Convention at Los Angeles, October 29.

The Santa Ana Walnut Growers' Association expects to ship 2,000 tons of nuts this season.

A new high school district will be formed of the Simi and Susana districts of Ventura County.

Heavy morning dews have retarded cotton picking in the Palo Verde Valley of Riverside County.

M. A. Schofield gave daily lectures on poultry feeding and care during the El Centro fair, October 24-28.

Farm Adviser Garthwaite of Imperial County is working on a plan to establish vineyards in various sections of the valley.

Riverside County has just expended $10,000 on repairs to the Palm Springs road putting it in good traveling condition before the Date Festival.

The agricultural extension service has made arrangements for a school of beekeeping to be held at Exposition Park, Los Angeles, December 5-10.

Manager Liebert of the farm bureau exchange has called upon alfalfa and milo growers of the Imperial Valley to sell only through the exchange.

Manager Liebert of the farm bureau exchange of Imperial County says that all preliminary arrangements have been made for marketing quality birds.

The U. S. biological survey has sent E. R. Kalmbach to the Imperial Valley to study blackbird control. He has established headquarters near Wiest.

Representatives of Orange, Riverside and San Bernardino Counties recently made a tour of check dams used in flood protection work in Los Angeles County.

The California Prune and Apricot Growers Association has been advanced a million and a quarter dollars by the War Finance Corporation for loans to grower members.

Local farm bureau meetings will be held in Los Angeles County at Pomona and Tierra Bonita, November 2; Zelzah, 2; Alhambra and Lankershim, 3; Whittier and San Fernando, 4.

A conference of the registered fertilizer manufacturers and dealers of California was called by the director of the state department of agriculture at Los Angeles on Wednesday, October 26.

The annual stockholders' meeting of Imperial Valley Vegetable and Melon Growers' Association was held at Calipatria last week. J. E. O'Neil was elected president and S. B. Folds secretary. It is expected that branch offices will be opened in other sections of the valley when the season opens.

The Coast and General

The potato crop in Northern Arizona is unusually good.

A large number of feeder cattle are being brought into Arizona from Mexico.

The Western Washington fair held at Puyallup brought out an attendance of 20,000.

Owing to severe trimming of palms for scale the date crop of Arizona is rather short.

The Western Royal Livestock Show is now being held at Spokane and will close November 2.

One of the strongest features at the state fair at Yakima in Washington was the poultry show.

The Southern California Edison Company has filed applications for water rights on the Colorado River totaling 4,500,000 horsepower.

An unusually fine exhibit of honey was shown at the recent interstate fair at Spokane. Sweepstakes premium was won by an Idaho firm.

The Washington Farmer says that "Never before in the history of Washington have the small local livestock shows and fairs been so successful."

Heavy losses to alfalfa seed growers resulted from the recent flood in the Salt River Valley and Yuma districts of Arizona; loss to cotton growers not heavy.

Cotton picking is in full swing in both the Salt River valley and the Yuma districts of Arizona though some shortage of help is reported in the last named.

Recent dry weather in Arizona has been very favorable to cotton picking but many fields in both Salt River and Yuma Valleys have not yet been touched.

Large numbers of cattle are being shipped from the northeastern plateau and from the Seligman district of Arizona, many of which are ready for slaughter.

The Montana Farmer reports a New Yorker visiting the state fair this year and asking where the summer fallows were exhibited. It seems he thought they were vegetables.

At the meeting of the Oregon Holstein Cattle Club held during state fair week at Salem it was decided to have a booth at the Pacific International at Portland, November 5-12.

The quarantine order relating to alfalfa weevil was amended on September 30 to include the counties of Storey and Ormsby, Nevada. Washoe and White Pine were already under quarantine.

The annual meeting of the Oregon Cattle Club was held during state fair week at Salem. G. G. Hewitt of Independence was elected president and Ivan Loughery of Mommouth secretary.

In effort to control aphis the Cawthorn Institute of Nelson, New Zealand, has requested and received from the California department of agriculture a shipment of Hippodamia convergens.

The cost of making the St. Lawrence River between Lake Ontario and Montreal navigable to deep sea vessels is estimated at something over a quarter of a billion dollars by United States and Canadian government engineers.

California's Water and Power Resources

By Wm. J. Locke in Pacific Municipalities

IN June 10, 1920, the president signed the so-called Federal Power Act, a measure which is destined to be of tremendous importance to the country as a whole and especially to the Pacific Coast.

The act is intended to stimulate the conservation of our water resources for the acomplishment of three purposes, to-wit: the development and use of hydro-electric power, its subsequent utilization for irrigation and finally for protection against floods.

The act by express language gives a preferred right to the states, municipalities and other political subdivisions as against the private corporations, providing that licenses for the development of power by states or municipalities shall be issued and enjoyed without charge to the extent that such power is sold to the public without profit or is used for state or municipal purposes.

Importancc of Irrigation

Of all the states in the Union California is able to derive the greatest benefit from this act. From the Oregon line southward for two-thirds the state's length and running parallel thereto are two great ranges of mountains, the Sierra Nevada and the Coast Range, while lying between are two of the largest valleys in the world. On account of our peculiar climatic conditions and lack of rain during the summer months irrigation on an elaborate scale is necessary in order to bring these valleys up to their highest state of productivity.

The country around Turlock and Modesto is an example of the wonderful possibilities of irrigation. On the west side of the same valley ranging from Tracy all the way down to Coalinga are lands capable of the same high development and the same possibilities. All that is lacking is that life giving fluid, water, in order to transform these lands into fertile gardens of wealth and beauty.

Flood Control

As to a sufficiency of water for the whole state there is no question. All that is required is its proper conservation and distribution. Millions of gallons are now carried to sea annually during the freshet season which frequently after a heavy winter is followed by disastrous floods over large areas of the low lands, resulting in many thousands of dollars in damage.

Restraining dams in the mountains would prevent a recurrence of these periodic floods and resultant loss. Hence it will be seen that the benefits to be derived from a conservation of our water resources are not limited to irrigation and the development of power.

Power from White Coal

During the past decade worldwide attention has been called to the advantages of utilizing the power of falling water. This has been stimulated by recent improvements in the transmission of electricity whereby the losses which resulted from transmission in its early development have been greatly reduced. However, the most important stimulus was undoubtedly due to the great increase in the use of machinery, followed by the ever increasing supply of fuel and a constantly rising cost. During the past few years fuel oil has advanced in price over 100 per cent, and it is universally conceded that sooner or later the supply of oil will be exhausted. Furthermore, oil and coal, when once consumed are gone forever, whereas nature brings "white coal" back to the mountains every year so that it may be used over and over again. Therefore it will be readily seen that the development of our water and power resources is the most important matter now confronting this great commonwealth.

California as a state must compete against other states for population and industry. In order to win it must offer to its citizens more than other states.

Two things are necessary for success. They are land and energy.

In California land must have water. The state has no coal, and its oil supply will fail. But it has 15 per cent of the potential hydro-electric resources of the United States. Hence, the two factors for success are water and power.

There are about 8,000,000 acres of land in California which may be irrigated, and there is water enough runnig to waste to irrigate this land, supply domestic and industrial needs and develop supplies of power sufficient to meet all possible demands.

These resources can be developed by the people and distributed to users on a cost basis. This will mean millions of new acres under cultivation, great industrial and manufacturing development, low rates for farmers, householders and manufacturers, and a tremendous and continuing increase in population and wealth.

Public vs Private Development

Water, like light and air, has always been regarded as one commodity that should never be subject to private ownership or control. The human mind repels the very thought of such a thing. Without these three elements—air, light and water—life would be impossible. They have been given to man by God Almighty himself and are the common heritage of all. Therefore, it is most repugnant to think of water or the use of water becoming the property of an individual or private corporation.

The business of generating hydro-electric power in California to a very large extent is now in the hands of four large private corporations founded by the consolidation of many small companies. There is talk of further consolidation so that ultimately the light and power business of the state will be entirely in the hands of two or perhaps only one large private corporation which will be able to exact a profit from every lamp that's burned and every wheel that's turned in this great state.

There is every argument in favor of development by the state. In the first place the state can obtain the funds required much cheaper than the private corporations. The state will have no difficulty in floating its bonds on a 5½ per cent basis, whereas the private companies would have to pay at least two per cent more. At the present writing it is reported that the six per cent bonds of one of the largest privately owned utility companies in the state are on sale for $78 per share, or $22 below par. This is something to think about.

The private companies are repeatedly declaring that public ownership and operation is a failure, that it is inefficient and wasteful.

In California today there are 119 cases of municipally owned water works, 24 electric light and gas plants, and in practically every case they have maintained lower rates and have given better service than the others which are privately owned.

There is evidence that the power companies and allied financial interests will base their campaign against the measure on an effort to align the north against the south and the city against the country. "Keep the state divided" is to be their campaign slogan.

The committee that assisted in preparing the new act includes men and women from the north and the south, the city and the country, and all have been zealous champions of the rights of their respective communities for years. It is sufficient to cite the public records of these men and women as final and absolute disproof of the charge that any one of them could or would participate in a plan designed to give one section an advantage over another.

The only advantage sought by the originators of this measure is the advantage of California. The one most imperative duty of all the citizens of California today is to unite on a program of California development—not of San Francisco or Los Angeles or San Joaquin or Sacramento Valley development, but of the whole State of California from one end to the other.

How to Make and Use a Rain Gauge

By Dr. Ford A. Carpenter, Consulting Meteorologist

THE rain gauge is one of the oldest weather instruments. Tradition has it that Korea boasted a rain gauge of stone which was in use over a thousand years, and the early records at Jerusalem contain accurate rainfall measurements over a much longer period. Of the two important meteorological elements of temperature and rainfall the latter is the more easily measured. The variation in rainfall is fully as great as that of temperature so that every ranch owner should have a rain gauge and keep careful records.

Making a Rain Gauge

A standard rain gauge may be purchased of any dealer in scientific instruments for about $10, but any person handy with tinsmith shears and a soldering iron may readily make one at a cost of not over $2 for material.

The accompanying photograph shows a standard rain gauge, weather bureau pattern. The man in the photograph is holding the receiver which is funnel shaped and has a diameter of 8 inches. In his left hand he displays the measuring tube which is 2.53 inches in diameter and 20 inches long. In the center of the picture, in an upright position, is the overflow receptacle into which the other two parts of the rain gauge are placed.

The overflow receptacle is 8 inches in diameter and about 24 inches long. It, as well as the other parts of the gauge, may be made of zinc or galvanized iron. The measuring tube is 20 inches long and exactly 2.53 inches in diameter and is generally made of calibrated brass tubing. As brass tubing of this size is difficult to purchase satisfactory results may be obtained by making a tube of the requisite dimensions in this fashion: Cut a strip of zinc or galvanized iron 20 inches long and 7 15-16 inches wide, roll it in the form of a tube with edges flush (not overlapping) and solder a one-half inch strip of the same metal the entire length of the tube. This strip being on the outside does not affect the accuracy of the tube; it also strengthens it. Complete the job by soldering a base to the tube. The funnel will be a more difficult undertaking, but by cutting a paper pattern (which procedure should be followed in all of this work) and being governed by the dimensions given and the shape shown in the illustration, there should be no reason why the work should not be satisfactory.

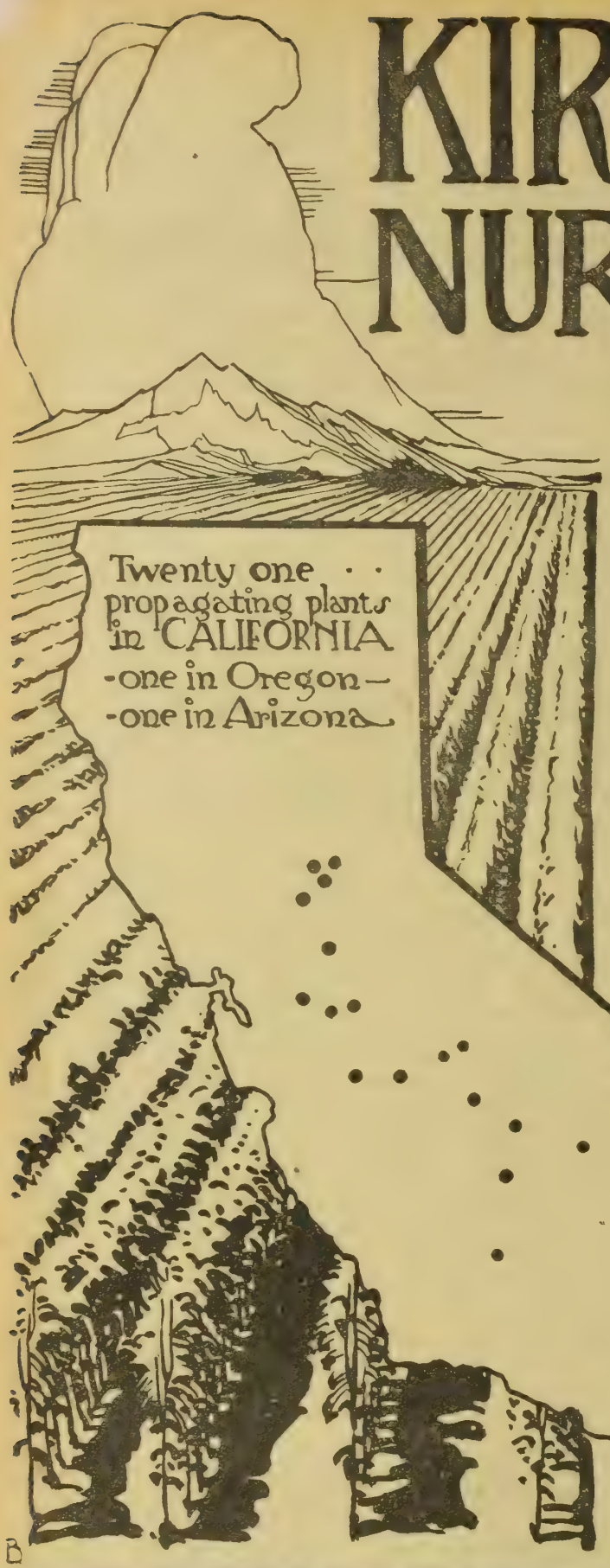
The measuring stick is a thin strip of cedar or other soft wood, three-quarters of an inch wide and one-eighth of an inch thick graduated into inches and tenths of inches. To measure the rain put this stick into the inner tube and note the depth of water. Owing to the ratio of the inner tube to the receiving funnel a tenth of an inch on the measuring stick represents one one-hundredth inch of rain. The measuring tube, being 20 inches long, will hold exactly 2.00 inches of rain. Rainfall is always recorded in inches and hundredths.

In case the rainfall exceeds two inches the surplus will drain out of the loosely fitted top into the overflow can

(Continued on Page 444.)

A Rain Gauge

The man in the picture is holding the "receiver" of the rain gauge in his right hand and the "measuring tube" in his left. These fit together and are placed inside of the large cylinder which may be seen in the foreground. Photograph by Dr. Ford A. Carpenter.



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Our experience has been gained by 32 years of progression in the nursery and orchard business in California.

Reservations are now being made for future deliveries.

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Why not have an easy riding tractor? No Re-Bound. A seat adjustable to the man's weight who rides it.

You ride on air; a perfect cushion. No jarring to the spinal column; no soreness in the shoulders.

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Deliver a remarkably large quantity of water from wells of comparative small bore. Thoroughly lubricated. All parts readily accessible. Shaft protected from water, thus eliminating danger of bearings being cut or worn by sand and grit. All sizes. Send coupon.

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Send me your new Pump Catalog.
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FARMER COOPERATORS

(Continued from Page 439.)

monopolies which are against public interest; and

Whereas, it has been clearly shown at the hearing of the sub-committee of the committee on the judiciary of the United States senate, held in Washington, D. C., June 2 to 20, 1921, that there is no foundation for the charge of possible monopoly on the part of the farmers;

Be it, therefore, resolved: That the farmers and fruit growers of California assembled in the state convention at Los Angeles this 24th day of October, in response to a call issued by State Director of Agriculture Hecke, do hereby endorse Bill H. R. 2373, now before congress, which was prepared for the express purpose of protecting the cooperative marketing associations from future malicious attacks and persecutions at the hands of unfair opponents, and that copies of this resolution be placed in the hands of the California delegation at Washington, D. C., the members of the committee on judiciary of the United States senate, the secretary of agriculture, and the representatives at Washington, D. C., of the various farmers national associations.

ANOTHER PARASITE OF BLACK SCALE

Following on the heels of the successful introduction by the state department of agriculture of the aphycus, the parasite of the black scale which has done such wonderful work in the control of this pest in Ventura and parts of Orange and Los Angeles Counties, the department has recently made another introduction of a new parasite not yet named which looks very promising. Harry S. Smith, chief of the pest control bureau of the department, who made the aphycus introduction, is now in Southern California superintending the work with the new parasite, which is being carried on at the laboratory at Whittier. This parasite, so far as laboratory observations have gone, seems to be more prolific than the aphycus and works on the smaller size scales. Just how it will adapt itself to California climatic conditions is of course not known, but it came from South Africa where climatic conditions are similar to California.

The state department has other new parasites with which it is experimenting at the present time. Two foreign collectors are maintained in the field, one in Australia and one in the Orient, searching particularly for parasites of the red scale.

Director Hecke is also negotiating with the United States department of agriculture with the object in mind of extending the foreign search for beneficial insects through joint expeditions with the federal department. Dr. L. O. Howard, chief of the U. S. bureau of entomology, has asked that Mr. Smith, the department specialist on this type of work, be sent to Washington for a conference having as its object the extension of the foreign parasite collecting work.

FUTURE OF DEHYDRATION

An enthusiastic dehydrator has suggested that dehydration will benefit everybody concerned. It will make a far bigger market for all kinds of farm and garden and orchard produce, with a fairer, more stable level of prices. It will tend to prevent the glutting of markets at certain seasons, which results in very low prices. It will enable the grower himself to dehydrate and preserve his surplus crops instead of leaving them to rot on the ground. At the same time, averaging summer and winter, it will mean a lower food cost to the consuming public, both through the equalization of prices and the vast saving in transportation. Dehydrated foods may be stored anywhere. They may be put in a dry attic or dry cellar. They may be kept in tin or glass or wood or cardboard containers. Because of their light weight and small bulk they can be stored in very much smaller space than canned foods and can be moved from one place to another without danger of breakage.

All of which is true and we believe the next few years will show a wonderful increase in this method of preserving and aiding in more economical transportation of some of our finest food products.

The Thread-Rubber trade-mark tells you that the plates in your battery are *insulated*—not merely *separated*. Willard Threaded Rubber Batteries are selected by the best brains in the automobile business as standard equipment for 187 makes of cars and trucks.

IT LASTS!

Don't go out and buy a battery by guesswork! Rather, fix your mind on this KEY-FACT and let nothing swerve you from it.

When you find the battery with the longest-lasting INSULATION you have found the longest-lasting BATTERY.

Long-lived insulation is the secret of the long life of Willard Threaded Rubber Batteries. Willard Threaded Rubber Insulation is durable. It resists wear. It lasts as long as the plates. It saves reinsulation expense.

Builders of 187 makes of cars and trucks pay more for Willard Threaded Rubber Batteries in order that your interests may be protected. When *you* buy a battery, why not follow their experienced judgment?

You can buy the Willard Threaded Rubber Battery of any of the dealers in your territory listed below. They all give authorized Willard Service:

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Anaheim..Anaheim Ign. Depot
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Auburn....Duryea's Serv. Sta.
Bakersfield, Auto Elect. & Batt. Co., Inc.
Berkley, Auto Elect. Serv. Co.
Bishop.....Griffith Bros.
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Chico.....Vaughan & Fordyce
Coalinga....Coalinga Batt. Co.
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Concord....Ward's Service Sta.
Corona..Corona Auto Elec. Co.
Covina...Covina Sto. Batt. Co.
Dinuba.....Elam & Call
Dunsmuir, Callisch Elect. Sta.
ElCentro.....Valley Auto Elect. Co.
Eureka.....Eureka Batt. Co.
Exeter, Weaser Bros. Serv. Sta.
Fillmore....C. C. Elkins, Jr.
Fort Bragg.....Dahl & Nelson
Fresno.....L. A. Bobo
Ralph E. Jost
Fullerton...Orange Ign. Works, Inc.
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Gilroy.....Oscar F. Lamb
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Hayward...Hayward Batt. Co.
Healdsburg, Healdsburg Batt. & Ign. Co.
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King City, King City Batt. Co.
Kingsburg, Kingsburg Batt. & Tire Co.
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Lindsay.....E. M. M. Service
Livermore, Auto Elec. Serv. Co.
Lodi.....J. W. Blair
Lompoc.....King Serv. Sta.
Los Banos, Los Banos Batt. & Tire Co.
Long Beach.....A. C. Walker
Los Angeles, Acme Auto Elec. Wks.
Hollywood Auto Elect. Co.
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Los Gatos, Gem City Serv. Sta.
Madera, Valley Batt. & Vulc. Wks.
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Newman....West Side Battery & Ign. Co.
Oakland....Auto El. Serv. Co. (2 stations)
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Orange, Orange Co. Ign. Wks. Inc.
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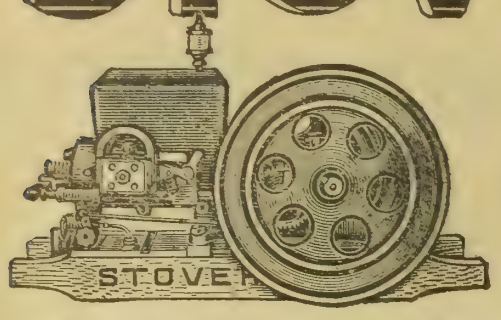

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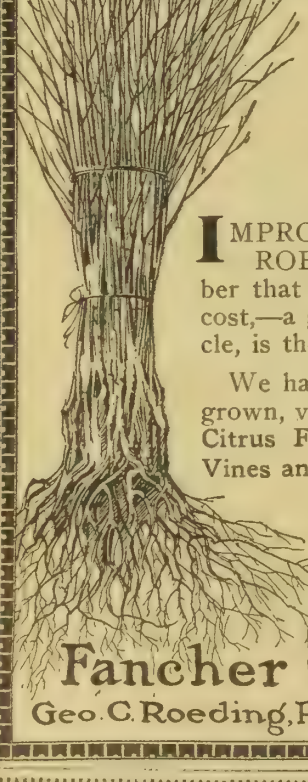
Roeding's True Trees



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IMPROVE your vacant land by planting ROEDING'S TRUE TREES. Remember that the cost of a tree is not the only cost,—a good tree, like any other good article, is the cheapest in the long run.

We have a magnificent stock of properly grown, vigorous, well rooted Deciduous and Citrus Fruit Bearing Trees, Ornamentals, Vines and Roses.

Let us have your name and address and we will mail you new price list when printed.

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Allwork Tractors
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AT COST

$1500.00 $1500.00 $1500.00

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Never in the history of tractors has there been such an offer as this. I am offering the celebrated "AllWork Tractors" for a limited time, at cost, for the purpose of raising money for use in my business. If you contemplate purchasing a tractor you cannot afford to delay for a moment investigating this greatest of all opportunities to purchase at cost, one of these high grade tractors.

J. F. RICHARDSON

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When Writing Advertisers Mention California Cultivator

Persimmons

By G. W. Sherwood

THE persimmon is rapidly coming into favor as an orchard crop. The fact that it is an easily grown deciduous tree not more susceptible to frost damage than the walnut, makes it available for planting on lands too cold for the citrus fruits.

Persimmons have no scale pests or diseases that affect either the tree or the fruit, except that an occasional tree dies from a form of root trouble similar to that which affects the walnut and other deciduous trees, the exact cause of which is at present unknown.

The tree properly grown on the right stock is a thrifty grower and bears at an early age. Last, but not least, the fruit is very beautiful, sufficiently firm to ship to Eastern markets or to hold in cold storage and brings a high price on the market. The local market last year absorbed nearly all the supply at an average price of nine to ten cents per pound, packed loosely in lugs. The fruit held in storage for the holiday trade brought a much higher price.

The writer has been growing persimmons for nearly 25 years and is preparing this article with the view of giving prospective growers the results of his experience, with the understanding that it is mainly confined to a particular locality.

Varieties

The only variety, at present introduced from Japan, worth propagating is the Hachiya, the familiar acorn shaped fruit, deep red in color when ripe and nearly seedless. It is highly astringent when hard, which is of small moment, as the astringency completely disappears when the fruit becomes soft enough to eat.

The persimmon is picked when the pinkish color reaches the stem cap. At this stage it is sufficiently mature and can be handled without injury either for packing or storage. The consumer should buy while it is still hard and keep on a plate, stem down, until it resembles jelly. In this state it is one of the most handsome and delicious fruits that we have.

I have in bearing some ten varieties, including the Hyakume, Tane Nashi, Goshio, Tamopan and a delicious very small variety. None of these is commercially desirable, not only because the fruit is not as large or showy as that of the Hachiya, but because the trees are mostly dwarfed or even shrublike in growth. They are all later in ripening than the Hachiya, which is an added disadvantage.

The exception may be the Tamopan, which is the latest to ripen and grows a good sized tree. The fruit, while of excellent flavor, is ugly in appearance and hard to ripen. It also appears to be a shy bearer.

The Hachiya appears to be almost a perfect variety, and as its period can be extended by storage no other variety is needed. It is a regular and heavy bearer, but there is one fault. There is sometimes an excessive dropping of the fruit during the growing season. All persimmons blossom excessively and drop perhaps two-thirds of the set in the early stages of growth. This dropping continues during the summer to a greater or less extent, resulting sometimes in curtailing possible production, as during this present season; but usually the natural self thinning process on thrifty trees is carried out very judiciously and the trees retain all that they should.

I have tried in every way I could think of to correct or minimize this fault, without any success. Like the "June drop" of oranges, it appears to be chargeable to the weather conditions.

There are several strains of the Hachiya, and care should be taken to propagate only from trees bearing fruit of the best character.

Soil and Climate

The persimmon will do well on any soil suitable for walnuts, and probably on any good orange land. The most thrifty trees are on very heavy land, verging to adobe. My trees are largely interset between grapefruit 24 feet apart and receive the same care as the citrus. The irrigation required is the same as for oranges except that at the ripening period they should receive an excess. The fruit grows very rapidly during the last month and plenty of moisture should be given.

The persimmon, being deciduous, can be planted on lands too cold for citrus, but what degree of cold they will endure without injury has not been definitely determined. It is no doubt safe to follow the walnut.

One of the prime requisites is to choose a sheltered location, as the trees are intolerant of wind and being very brittle are likely to be wrecked in a windstorm when heavy with fruit. My practice is when the trees are six or eight years old to wire the main branches to a 2 by 3 set upright in the tree, protecting the limbs where the wire encircles them with a piece of old hose or leather. Temporary props are required in addition.

Rootstock and Propagation

The greater part of the trees now growing here were imported from Japan. They came in the shape of whiplike plants two to four feet long with very poor roots, having few or no fibrous branches. Many died or did not grow, and all were hard to get started. To get 50 per cent to grow was a good showing, and very likely many of these would be off varieties. The importation of trees has now been forbidden to prevent the introduction of diseases and we shall in future have to depend on native grown trees. The rootstock now most favored is from the seeds of the diospyros lotus, which are obtained from Manchuria, a province of China. These produce plants with abundant fibrous roots, which grow with marvelous rapidity. I am now budding plants the seeds of which were received in March of the present year and which are 18 inches or more in height and caliper one-fourth inch. The seed is very small, resembling in size and appearance that of the Pasadena watermelon. Each pound should produce about 1,500 plants. Trees on this stock have borne a good crop at three years. Other stocks may be quite as good, however, except from the nurseryman's point of view. I have excellent trees on other stocks and some of my best trees are on the native Eastern stock.

Propagation is mostly by grafting, as the plants are not usually large enough to bud in September when this work must be done, but acquire sufficient growth to permit grafting in the spring.

Care of Trees

The nursery trees are set out like other deciduous trees, 22 feet apart is sufficient. The young trees should have the trunk shaded loosely or wrapped with newspaper. Mulching is desirable, but hoeing after each irrigation is perhaps better. It is my practice, as with all young deciduous trees, to cut back excessive growth twice during the season to a point where the limb should branch. This throws the growth into the trunk of the trees for a time and prevents useless growth that must be cut off anyhow. The persimmon tends to a sprawling, spindling growth, and this propensity must be vigorously combated if a strong tree is to be grown.

Marketing

It is very desirable that some sort of marketing agency be formed to take care of small lots of fruit and to establish standards of packing and grading. One of the purposes of this article is to suggest the desirability of forming a persimmon association on the lines of that of the avocado growers.

HOW TO MAKE AND USE A RAIN GAUGE

(Continued from Page 441.)

which is afterwards poured into the measuring tube and measured with the stick.

Planting the Rain Gauge

The rain gauge should be located on the ground (or on top of a fence post) in a place uninfluenced by either trees or buildings. Do not place the rain

gauge in the mouth of a canyon or on the lee of a moutain or your rainfall measurements will not be dependable. If a location on the ground is selected it is best to dig a hole deep enough to hold the gauge securely and put rocks about it to keep it from tipping over in a storm. In a snowy country it is necessary to have the gauge brought in during times of freezing weather. Snow is measured by using the funnel to collect samples of freshly fallen snow and slowly melting it and afterwards measuring and recording it as rainfall, remembering that the technical and accepted name for rain and melted snow is precipitation.

Recording Rainfall

Rainfall or precipitation entries should be made at a regular hour, preferably in the morning, thus showing the amount falling in the preceding 24 hours. It is best to rule a daily sheet into columns showing the following items: Date; Rain or Snow; Beginning; Ending; Amount; Accumulated, Month, Season, Last Season. The owner of a rain gauge will confer a benefit upon his community if he will furnish rainfall data to the local paper. While the weather bureau is glad to have the data it is not always possible to publish it or to designate the location as a cooperative station.

A word of caution: Do not be misled into using cans, buckets or other inaccurate receptacles to measure rainfall. Neither purchase from dealers rain gauges which have a receiving surface less than 8 inches in diameter. Rain gauges are often made larger than 8 inches, but with no improvement in accuracy; if rain gauges are less than 8 inches in diameter the results are not dependable. At the beginning of the rainy season test the rain gauge. See that the rain gauge does not leak and that it is located in a position where it can not be tampered with.

ARSENATE OF CALCIUM

Tests have been made by the United States department of agriculture on the effects of arsenate of calcium in combination with lime-sulphur. The arsenate of calcium was used at the rate of two pounds to each 50 gallons of water. In all the experiments the arsenate of calcium gave very satisfactory results in killing the larvae without burning the foliage. In a number of cases its killing action was somewhat slow. Since it can be produced cheaply it would appear to have distinct value, although it has not been sufficiently tested to permit recommending it unreservedly for general use. Where arsenate of calcium was combined with lime-sulphur it was, as a rule, even more effective as a poisoning agent than when used alone and did not lessen the value of the latter as a fungicide. When these compounds are combined the amount of foliage consumed by the larvae is less than where the arsenate of calcium is used alone. In tests in 1914 a commercial arsenate of calcium (paste), arsenate oxide 18.82 per cent, with lime-sulphur solution gave very excellent control of the codling moth. Where arsenate of calcium was used 98.79 per cent of the apples were sound.

REPLACING PEACH TREES

Replying to a query in a recent Cultivator as to replacing trees in a bearing peach orchard, Thomas M. Wells of Fresno calls attention to his experience with replanting in old orchards. He pulls out old stumps with tractors, then digs holes some two and a half feet square, puts in a blast, then plants the new tree, filling in around the roots with top soil. The young trees which he is setting are largely Santa Rosa and Climax plums which have made a growth of five feet the first season. As to his methods of blasting and work Mr. Wells continues:

"First I pull the stumps out to get as much of the roots as possible, which are more or less diseased. Use a one inch auger to bore a hole into the hardpan two-thirds through it, then use one-half stick or one-fourth pound of dynamite. Tamp it in solid and light. Next dig hole two and one-half feet around in order to get the roots all away from the young trees to be planted and do not allow any dirt that has been taken out to fall back in. Fill with top dirt from middle of row. I have never tried powder to blow out stumps as the tractor does it much cheaper. The best time or season is in the winter after the ground is thoroughly soaked with rain. I never observed any injurious effects from doing this in wet weather. My land is a very heavy red soil, what we call hardpan, although in some places there is six feet to it.

"PACKERS DECREE"

By R. G. Spencer

As a matter of justice we ask an opportunity to briefly present a few reasons why we believe the so-called "Packers Consent Decree" should be modified to permit the five Chicago packing companies to resume the distribution of such products as our California fruits. The California Cooperative Canneries are not alone in the protest against the operations of this decree. The National Canner, official organ of the National Canners Association, the Western Canners Association, and many of the leading fruit and vegetable canners of the East and Middle West have expressed themselves officially and by letters protesting against the decree and asking its modification. The National Livestock Association, Eastern consumers and producers organizations, labor unions and many individuals have been filing their protests on the matter, objecting to this decree method of eliminating a useful institution from the service of the country.

We contend that it is not the private interests of any one corporation, association or group of organizations, whether commercial in character or cooperative, that should be considered but the broader interests of the entire nation. We believe that the greatest economic problem we have to solve is that of efficient distribution of our food products at lowest possible costs. We do not believe that the limitation of this distribution to one set of interests such as the National Wholesale Grocers Association is the way to bring about such efficiency of lower cost. We believe that the methods of distribution of the packers in connection with the marketing of their meats, meat products, butter, eggs, etc., was the best and most efficient system yet devised, and that such a system should not be destroyed but allowed to operate under proper public control to insure its use for the benefit of all the people.

CANNING CIDER

Sweet cider may be canned so as to keep its natural flavor and aroma indefinitely by a method worked out at the horticultural products laboratory of the Oregon agricultural college experiment station. The cooked jelly taste is entirely absent.

The apples are collected, sorted to all sound ones, and then cleaned and piled up to sweat, which develops an exquisite aroma in the skins. The sound fruits only are then ground up with a grater. Spoiled fruits spoil the flavor and render the juice watery.

With hydraulic presses an average of three gallons from each bushel of fruit is obtained. The juice is pumped direct from the press into a receiving tank and strained through a coarse cloth or burlap to remove pulp. It is then run through a centrifuge of the type used in clarifying milk.

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A & M Hairy Peruvian Alfalfa Seed

They'll tell you it's pure, satisfactory and gives maximum results.

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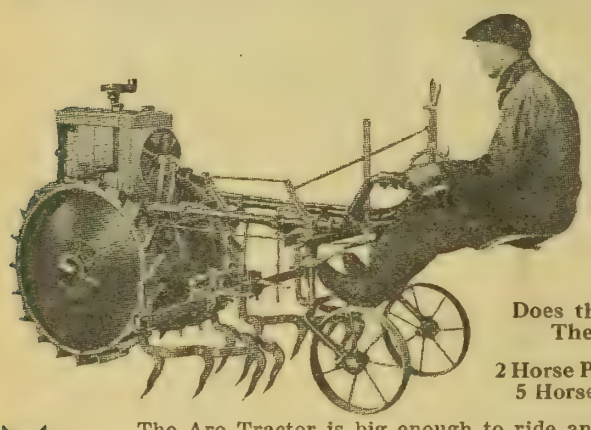

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Does the One-Horse Jobs The Operator Rides

2 Horse Power at the Draw Bar 5 Horse Power at the Belt

The Aro Tractor is big enough to ride and do real farm work, and is small enough to be economical and adaptable to small farms and orchards. It is powerful enough to handle a 10-inch plow, prepares seed bed, seeds four rows, cultivates one to four rows, does belt work, and light hauling from the field.

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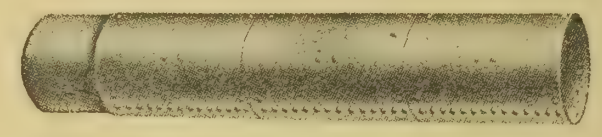

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The juice is then put into the sterilizer, which may be a black tin or copper coil in a tank of water which is to be held at an even temperature of 160, Fahrenheit. Good thermometers and careful watching are essential.

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If sterilizing the juice causes too much air in it, the cans are run through an exhaust box at 160 for about five minutes.

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Keeping Cider Sweet

Can you give me a recipe for keeping cider fresh?

My father used to put ground mustard seed and other ingredients in a barrel of cider and it would keep fresh indefinitely but I do not know the proportions and what else he put in it.—Suscriber, Kenwood.

The best way of preserving cider is to pasteurize and bottle. Full instructions in this procedure are given in the columns of the California Cultivator of August 20, 1921, page 173 in an article written by Prof. W. V. Cruess. If, however, it is necessary to preserve in barrel, the barrel must be thoroughly cleansed and sterilized and the cider filtered through charcoal to remove any pulp or impurities which induce fermentation. You may then use ground mustard, ½ pound; salt, 2 ounces; pulverized chalk, 2 ounces. Mix with small quantity of cider, pour into the barrel and mix thoroughly by rolling or rocking the barrel.

Another preservative recommended is calcium sulphide ¼ ounce to every gallon of the cider. As in the preceding case sterilization and filtration are necessary.

Threshing Clover

I have 20 acres of clover seed. Can you tell me how to get the seed threshed ready for market? Where can I find sale for it?—Subscriber, Angiola.

The only suggestion we would have would be to get in touch with one in your own community who has a clover huller.

Riddance to the Ants

We have a home acre infested by ants, rather small ones and dark colored. Can you tell me how to get rid of them? Wherever we irrigate there is an ant's nest. They have killed bulbs and other plants and flowers, so I cannot raise hardly anything. Fruit trees do not seem to be hurt by them. They will run up the limbs of the tree, a thick mass of them sometimes as wide as a person's hand. In the path I can pour kerosene on the nest and set it on fire. That gets them but have to use ant paste or powder in the house all the time nearly.—Subscriber, Ceres.

This seems to be an exceptional year for pests of Argentine ants and all other varieties. Your procedure in the matter of burning kerosene is good. More deadly, however, is cyanide of sodium in solution poured down the hills. If this is persisted in all over the place and say a tablespoon of the strong solution, at least 10 per cent, poured into the entrance of the hole, it will be but a short time before the pest in controlled or perhaps eradicated. Boiling water or gasoline are good if used in this way. There are also ant poisons sold at drug stores both in the form of pastes and of syrups. An excellent control is formula 23 in the Cultivator pest fighting special of September 24, page 314. It must be borne in mind that these solutions, especially the cyanide referred to above, are deadly to humans as well as to ants.

Sugar Beets Dying

Scattered through my beet field this year are patches where the beets have dried and rotted. Had a good stand to start with. They did not begin to die until sometime in July. It is not from lack of cultivation or water. If this is a soil condition or disease what would be a good crop to follow up the beets? Most of the land is light loam. A few spots have some alkali.—Subscriber, Compton.

This may be nematodes or it is barely possible it may be a fungus, Sclerotinia. If the latter, it will be indicated by a slimy, offensive rot. We think it would be well to mail some of the dying beets which will be submitted to experts.

Keeping Cider Sweet

Is there any method by which cider or apple juice may be kept sweet other than by heating?—Subscriber, Arroyo Grande.

See answer to similar query on this page.

Farm Loan

I would like to get full information concerning the farm loan bill. I desire to get loan if possible.—Subscriber, Monrovia.

You should get in touch with the local farm loan association. There are several in Southern California. One has offices in the Bradbury Building, Los Angeles. Write E. S. Gardner, Secretary, 304 S. Broadway, Los Angeles.

Awards of Poultry

A subscriber has written stating we made error in the list of winnings in the Dark Cornish exhibited at the San Fernando fair, but as we did not print the awards at that fair we think subscriber read instead awards at the California state fair. These awards were printed on the same page with the account of the San Fernando fair. However, as the inquirer did not give correct address our letter of explanation has been returned to us.

Young Prune Orchard

I have a small orchard of young prune trees which have had a considerable setback as a result of the unseasonable weather in the spring. Many of the trees are weak and unhealthy. The soil is gravelly and the orchard is about four years old. Economy being

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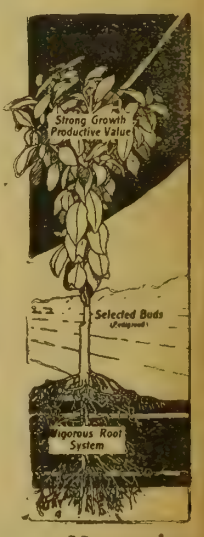

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strictly a consideration what treatment would best help the situation?—Subscriber, Ukiah.

We fear these trees may have received a setback which may prevent the orchard ever being put into best commercial producing condition. In any case it would be a matter of slow upbuilding rather than any one treatment. The matter was referred to Mr. Howard who writes: "The probable cause of the setback is not stated, and as the cause should be the first consideration in determining the best care for the trees to promote rapid recovery, it is difficult to make a recommendation. If the trees have made a good growth for their age up to the time the setback, whatever its nature, occurred, there is a possible chance of saving them, if no disease is present. Would suggest calling in your horticultural commissioner or farm adviser to examine the trees with particular reference to the roots and if no disease is found plan for the best possible care this year with the addition of barnyard manure or other fertilizers. If the trees have always lacked vigor and have apparently reached the point where they fail to do well the greatest economy would be to remove the orchard and try something else."

Corn Husks for Tamales

A subscriber wishes information as to securing supply of corn husks for making tamales. California husks have been largely used in the manufacture of tamales. The question was referred to the Sperry Flour Company and we have from George R. McLeod the following:

"A large proportion of the corn husks used by tamale manufacturers of California is produced in California. It would be hard to arrive at the total amount used for the reason that a large proportion of husks is distributed direct from the producer to the consumer. Medium sized tamale factories in such towns as Stockton and Sacramento use practically five tons of tamale husks a year. The best husks are taken off yellow corn as they are stronger in texture than the husks from the white corn and command a slightly higher price from the tamale people. People who make a business of curing and baling corn husks for sale generally try to secure a crop of corn that matures early so that the husks dry and bleach out well and are not damaged. The husks of corn that matures later in the season would be apt to be damaged or discolored by mildew. Care is also taken to secure husks entirely free from damage by cut-worms which completely destroy the value of the husk. The corn is generally picked from the stalks and let dry in the sun until husks reach a moisture content low enough to keep. The husks are then removed and baled in a primitive baling machine, each bale weighing from 75 to 100 pounds. The price on last year's corn husks, which have been carried over, varies from 10 to 18 cents a pound. There is no new crop of corn husks on the market out of the 1921 crop. It has been the custom in California for many years, particularly on the Merced river, and at some other points, to give the husks to husking contractors in payment for the picking, husking and putting of the corn in the cribs."

Cure for Garget

Please permit me to answer the Ferndale subscriber as to a cure for garget in a cow's udder. As soon as swelling and inflammation is noticed give her a teaspoon of fluid extract of poke root. Keep this up three days running, and then follow up the fourth day with a pound of Epsom salts, both given as a drench in luke-warm water. —Santa Ana Subscriber.

Veterinary

Answers in this column by Dr. Wm Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

An Extreme Case

I have a large horse that was in fine condition but about three or four months ago his hind legs began to swell and gradually grew worse, then the front legs began to swell also. Now there are lumps from the size of the end of one's thumb to the size of a hen's egg on the neck, body and legs and the head is swollen so the shape of the halter shows where the pressure comes. The skin is cracking in the hock and above the ankles. The inside of the nostrils is very much inflamed. I had a veterinarian examine him and he said his blood was bad and gave him some medicine, but it did him no good. I also gave him iodide of potash in teaspoon doses twice a day with no results. He is gradually growing worse and sometimes cramps when stepping over a doorsill and has trouble getting his hind leg down again. Several horses have been destroyed for glanders in our neighborhood but the same veterinarian who condemned them treated mine and says this is not glanders. What is it and what can be done for him?—Subscriber, Hughson.

We should surely think it was glanders if your veterination had not examined him and said it was not. Sometimes when the virus is scattered all through the system they refuse to react when tested and confuse a veterinarian. Better let him test the horse again. If you wish to treat the horse get one ounce of aloin, four ounces of turpentine and enough raw linseed oil to make three pints. Mix it well and divide into four doses. Give one dose every three days while it lasts unless it physics him very strong, then make the doses smaller or farther apart. Also give a teaspoon of crushed saltpeter in the feed twice a day for ten days. Change the feed and give some carrots. Give a little green feed as long as you can get it.

Sheep Ailing

I have a year old Romney Marsh ewe that has been ailing for two months. For some time it could not stand up but for a week can walk a short distance, then gets weak and sits down. Has had range feed and alfalfa hay and some bran, oats and a little oil cake mixed. It is regaining its appetite but is humped up in the back with the hind legs stiff and drawn under the body. Also a number of lambs died on the range. Their lungs were spotted or the liver seemed rotten or both. They appeared healthy and had a good growth of wool. I have seen such cases in wet countries where the sheep were exposed to cold rains and without shelter but these have never seen wet weather. Please advise what to do for them.—Subscriber, Hopland.

The trouble you are having with your sheep may be common but I must confess I am not familiar with it. It sounds like poison of some kind and may be a weed that they got on the range or possibly in the hay. There are several poison plants in California that grow near wet places. You can get a good description of them and their antidotes from Bulletin 249 of the college of agriculture, Berkeley. It is free. A laxative will often relieve if given in time. Use a teacup of raw linseed oil and a tablespoon of turpentine. Give it at one dose. The antidote for most of the poison weeds is five to ten grains of permanganate of potash with an equal amount of the sulphate of aluminum dissolved in a pint of water. Try the turpentine and oil with a little aloes mixed in it for the year old sheep.

Rheumatism of the Joints

I have a cow four months with calf the second time. For two months she has not been eating as she should and has been falling off in her milk. She gets all the alfalfa she wants and plenty of good clean water. She does not look poor but is getting stiff. She has difficulty in getting up and can hardly walk. We have another heifer calf that is getting the same way. What can we do for them?—Subscriber, Modesto.

There must be moisture about the stable or in the yard where they are kept. You must provide dry quarters for them. Keep them in the sunshine during the day and keep them dry and warm during the night even if you have to blanket them. Get your drug-

(Continued on Page 459.)

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750	18	5 9	4 11	580	30.75
1,000	24	6 6	4 11	655	35.25
1,500	36	7 1	5 11	830	45.00
2,000	48	8 1½	5 11	975	52.50
2,500	60	8 4	6 11	1,145	60.75
3,000	71	9 1½	6 11	1,270	69.00
3,000	71	8 5	7 11	1,290	69.00
4,000	95	9 10½	7 11	1,555	87.00
4,000	95	9 2½	8 11	1,580	87.00
5,000	119	10 11	7 11	1,745	98.25
5,000	119	10 3½	8 11	1,790	98.25
6,000	143	11 4	8 11	2,010	111.00
7,000	166	12 1½	8 11	2,160	118.50
8,000	190	12 3	9 11	2,375	130.50
10,000	238	13 7½	9 11	2,770	150.00

Made from 3-Inch Clear Air-dried Redwood

Capacity		Outside Dimensions		Shipping Wt. Lbs.	Price
Gals.	Bbls. 42 Gals.	Diameter ft. in.	Height ft. in.		
10,000	238	13 10½	9 11	4,660	$ 225.00
12,000	285	13 10½	11 11	5,370	258.75
15,000	357	15 6	11 11	6,080	303.75
20,000	476	17 10	11 11	7,280	352.50
25,000	593	18 4	13 11	8,510	412.50
30,000	714	20 2½	13 11	9,800	465.00
40,000	952	23 0	13 11	11,300	557.25
50,000	1190	24 0	15 11	13,400	675.00
60,000	1428	26 3	15 11	15,100	742.50
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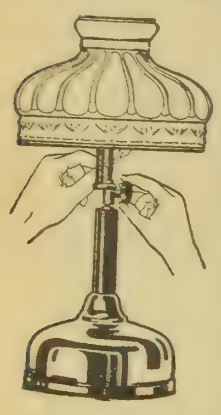
Wonderful Home Light

New Gasoline Lamp Gives 300 Candle Power Brilliance at Low Cost

A gasoline lamp that gives more light than 20 old style oil lamps at about one-tenth the cost is the leading product of the Coleman Lamp Co., Wichita, Kans.

This remarkable lamp is known as the Quick-Lite. It generates its own gas from common motor gasoline and is so simple in construction that even a child can operate it.



The Coleman "Quick-Lite" is safe, dependable and economical. Unlike other gasoline lamps, the Quick-Lite lights with ordinary matches. Nearly a million are in use in American homes. Thousands more are used to light stores, halls, churches, etc. The Quick-Lite is gaining wide favor in cities, too. Many claim it is superior to electricity because the light is soft and restful to the eyes.

The above picture shows one of several models. More than 30,000 dealers sell "Quick-Lites." Any one interested in better light may see this lamp lighted at a nearby hardware or general store. Full information together with an interesting booklet may be had free by addressing the Coleman Lamp Co., Desk A-4, Wichita, Kansas.

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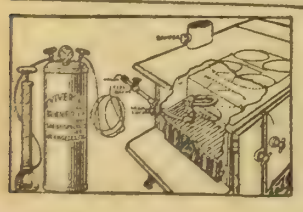

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Household Department

THE SAILOR'S LASS

I set a lighted candle to call my sailor home.
Afar upon the high seas my storm-tossed thoughts still roam;
Perhaps he hears my heart call above the ocean roar;
Oh change your course, my sailor lad, come back to port once more!.

I set a lighted candle to call my sailor home.
Oh would I were a seagull to drift across the foam—
The white wake of his vessel, perchance I'd hover o'er—
Oh change your course, my sailor lad, come back to port once more!

I set a lighted candle to call my sailor home.
Be still, my heart, and listen—perchance you'll hear him come!
What is it that the waves bring, awash upon the shore?
Oh change your course, my sailor lad, come back to port once more!

I set a lighted candle to call my sailor home.
'Twas I who planned to greet him when he set his sail to come.
Why should he drop his anchor near that uncharted shore?
Oh change your course, my sailor lad, come back to port once more!

—Eleanor Elliott.

HINTS FROM HOUSEKEEPERS

More Jerky Recipes

Jerky Gravy.—1 cup finely ground or pounded jerky. Put in frying pan with 2 heaping tablespoons lard, stirring until brown. Add 2 tablespoons flour, brown slightly and add enough water or milk to make a thick gravy. Season with salt and pepper. This is delicious served with boiled potatoes.

Jerky and Beans.—Cook a pint of pink beans one hour and add 1 red pepper and 1 onion sliced and a small piece of garlic, several strips of jerky and a piece of bacon. Keep covered with water. Cook till juice is thick, and salt.

Jerky Stew.—Peel and slice five or six potatoes into a kettle with enough boiling water to cover. Add a green pepper and 2 onions and a small piece of garlic. Season with salt and pepper. Add to this 1 cup ground or pounded jerky and a strip of salt pork or fat bacon cut in small pieces, or a heaping tablespoon lard. This may be thickened with a little flour if desired.—Subscriber, Oakdale.

Jerky on Toast.—Soak jerky in cold water until soft enough to put through the meat grinder. Make milk gravy, using butter, milk and flour. When about done add the ground jerky. Serve either plain or on toast. You will find this delicious.—Subscriber, Wasco.

With Gravy and Onions—I have had the use of jerky in season for a number of years. Besides eating in the dried state, which so many like to do, it is good cooked. Either pound or cut in very small bits, put into butter or other fat, fry and stir till as brown as it will stand without burning, put in a little flour, cook and stir a few moments, then add milk. There should be flour and fat enough to make enough gravy to cover jerky.

Another way I prefer is to slice fine a good sized onion to several handsful of jerky after it is prepared for cooking, then cook together in butter till onion is done. It is best to cook onion a little first, afterwards proceed with gravy as above. Chili pepper is good if one likes it added.—Manzanar.

Good Tamales

I think your correspondent will find following tamale recipe very much superior to those you gave her:

Chop ends of husks, wash thoroughly, soak in clean water at least one hour, two is better. I grind my own corn, but if one cannot do that, take about 3 cups finest ground package hominy to 5 cups corn meal. Take 1 pound lean beef—I prefer neck meat—1 pound fresh pork free from bones, cover with 4 quarts cold water, add 5 to 8 cloves of garlic (depending on size), 2 onions, salt to taste. Bring slowly to boil, boil till perfectly tender. Strain meat from broth and chop to paste. Heat ½ pound fine ground suet in large iron frying pan till particles are all clear, add about 3 cloves garlic and 1 onion minced fine. When turning yellow, not brown, add meat and fry about five to ten minutes, adding slowly 4 or 5 tablespoons chili powder. If wanted very hot about ½ tablespoon cayenne also, or one can grind peppers and add with onion and garlic when starting to fry. One chili pepper, 1 bell and 3 pimientos, all red, makes a good combination. Add 1 cup broth, salt to taste and let simmer while preparing dough.

Pour your 8 cups meal into remainder broth. If too thick, thin with water or more broth. It should be thick enough so spoon will stand up in it. Add salt to taste, ½ pound fine ground suet and two or more tablespoons chili powder. If you use ground peppers they should be fried till tender but not colored in a little suet before adding to broth. Cook at least ten minutes.

Take corn husks, wipe dry, make layer of dough about ⅛ inch thick. In center put about 1½ tablespoons prepared meat, 1 olive and 2 Muscat raisins and roll, tie ends with husks torn in strips. Put in steamer and steam at least four hours. If left 24 hours after steaming and then steamed another hour they are still better, and if you don't think they are the best you ever tasted my labor in writing this is all wasted. If one wishes, can add strained tomato to broth.—M. F. Marsh, Monrovia.

HOUSEHOLD QUERIES

Making Dry Yeast Cakes

I am one of the readers of your paper and like it very much, especially the household department. I would appreciate it very much if you would send me a recipe for making dry yeast cake. Also, I have been wishing to see some good soup recipes, as it is getting almost winter.

A number of recipes for dry yeast cakes were given in the Cultivator last spring. Here is one sent in by Mrs. Carl Muller, Reedley:

To get a starter I boil one medium sized potato. Mash fine. Mix in enough corn meal to make stiff batter, then when cool, not cold, mix large spoonful of bread batter in and let rise, then knead in enough corn meal to make a stiff dough and let rise again. Now I form little patties like small biscuits, place on a plate or platter and dry in airy place. These may be kept in any dry place. I would advise making not more than 6 to 10 at one time.

Almond Paste

I would like to know if any of our subscribers know how to make almond paste used in cooking, that will keep.—Subscriber, Corning.

Have our readers any help to give this inquirer? The only suggestion we can make is to grind the almonds into meal, using the pulverizer knife in the ordinary food chopper. Almonds, of course, do not contain as much oil as peanuts which when ground in this way make nut butter. We think it would be quite practicable to grind small quantities as needed. This meal may then be used in cake, confections, bread, vegetarian dishes, etc.

Sweet Pickle Recipe

Can you send me a recipe for sweet pickle like those you buy from the store? I will be very grateful to get one as I have tried many but none taste like those.—Subscriber, Elk Grove.

For recipes in answer to this and other similar requests the Cultivator will be glad to extend subscription credit, that is, for all which space allows us to publish. Those received first have best chance of being published.

Spanish Rice, etc.

I would like to obtain recipes for cooking rice in different ways, such as Spanish and so on.—Subscriber, Artois.

Spanish Rice.—3 medium sized onions, ½ cup drippings, ½ cup uncooked rice, 3 cups fresh or canned

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3747. Ladies' Wrap.—Cut in four sizes: Small, 34-36; medium, 38-40; large, 42-44; extra large, 46-48 inches bust measure. A 38 inch size will require 3½ yards of 54 inch material without nap. Price 10 cents.

3774. Girl's Dress.—Cut in four sizes: 8, 10, 12 and 14 years. A 10 year size requires 2½ yards of 44 inch material for the dress and 1⅛ yards for the overblouse and collar. Of one material 5 yards of 27 inch material will be required. Price 10 cents.

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3378. Boy's Suits.—Cut in 5 sizes: 2, 4, 5, 6 and 8 years. A 4 year size will require 3½ yards of 27 inch material. Price 10 cents.

3779. Ladies' Gown.—Cut in seven sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size will require 5½ yards of 40 inch material. Price 10 cents.

3753. Junior's Dress.—Cut in three sizes: 12, 14 and 16 years. A 14 year size requires 2¾ yards of 36 inch material for the dress, and 2¼ yards of 32 inch material for the guimpe. Price 10 cents.

3591. Ladies' Dress.—Cut in seven sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size will require 3⅝ yards of 54 inch material. The width of the skirt at the foot is 2 yards. Price 10 cents.

3783. Girl's Dress.—Cut in 5 sizes: 2, 4, 6, 8 and 10 years. A 6 year size requires 3 yards of 36 inch material. Price 10 cents.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH

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CATALOGUE NOTICE

Send 15c in silver or stamps for our Up To Date Fall and Winter 1921 Catalogue, containing over 500 designs of Ladies', Misses' and Children's Patterns, a concise and comprehensive article on dressmaking, also some points for the needle (illustrating 30 of the various simple stitches) all valuable to the home dressmaker.

PATTERN DEPARTMENT
California Cultivator **Los Angeles**

tomatoes, 3 green peppers cut into strips, 2 teaspoons salt. Slice onions and cook till tender and slightly brown in melted fat. Remove from fat, add rice which has been carefully washed and dried, and brown it. Then add cooked onions, the tomatoes, green peppers and salt, turn mixture into baking dish and bake until rice and peppers are tender. This will serve 6 or 8.

Another.—One cup well washed rice cooked soft, about half an hour, in kettle containing 2 cups water and 2 cups strained cooked tomatoes seasoned with salt, cayenne and 2 tablespoons finely minced onions, or clove of garlic, and 2 ounces finely cut or grated cheese. Shake to prevent sticking to bottom of pan. Continue boiling till soft. Set in hot water till served.

Other rice recipes will be given as space permits.

Cake Frostings

I would like to have recipes for cake frostings, not too rich.—Subscriber, Artois.

Here is a chance for our subscribers to pass on their favorite frosting recipes. Subscription credit will be given for those used in this department.

Marshmallow Cookies

Could someone give me a recipe for marshmallow cookies like those the bakers make? They have a marshmallow filling or frosting and the cooky itself is spongy like a marshmallow.—Subscriber, Oakdale.

"It Takes a Lot o' Livin'"

Can you tell me who is the author of "It Takes a Lot o' Livin' in a House to Make It Home," and please print it in the household department.—Subscriber.

HOME

By Edgar A. Guest

It takes a heap o' livin' in a house t' make it home,
A heap o' sun an' shadder, an' ye sometimes have t' roam
Afore ye really 'preciate the tings ye lef' behind,
An' hunger fer 'em somehow, with 'em allus on yer mind.
It don't make any difference how rich ye get t' be,
How much yer chairs an' tables cost, how great yer luxury;
It ain't home t' ye, though it be the palace of a king,
Until somehow yer soul is sort o' wrapped 'round everything.

Home ain't a place that gold can buy or get up in a minute;
Afore it's home there's got t' be a heap o' livin' in it;
Within the walls there's got t' be some babies born, and then
Right there ye've got t' bring 'tm up t' women good, an' men;
An' gradjerly, as time goes on, ye find ye wouldn't part
With anything they ever used—they've grown into yer heart:
The old high chairs, the playthings, too, the little things they wore
Ye hoard; an' if ye could ye'd keep the thumb marks on the door.

Ye've got t' weep t' make it home, ye've got to sit an' sigh,
An' watch beside a loved one's bed, and know that Death is nigh;
An' in the stillness o' the night' see Death's angel come,
An' close the eyes o' her that smiles, an' leave her sweet voice dumb.
Fer these are scenes that grip the heart, an' when yer tears are dried,
Ye find the home is dearer than it was, an' sanctified;
An' tuggin' at ye always are the pleasant memories
O' her that was an' is no more—ye can't escape from these.

Ye've got t' sing an' dance fer years, ye've got t' romp an' play,
An' learn t' love the things ye have by usin' 'em each day;
Even the roses 'round the porch must blossom year by year
Afore they 'come a part o' ye, suggestin' someone dear
Who used t' love 'em long ago, an' trained 'em jes' t' run
The way they do, so's they would get the early mornin' sun;
Ye've got t' love each brick an' stone, from cellar up t' dome:
It takes a heap o' livin' in a house t' make it home.—Edgar A. Guest.

Prune Bread

Would some of the ladies who have contributed such excellent recipes in the past few months kindly send in, through the pages of this fine farm paper, just how to make prune bread? Our town baker makes fine, but I can't get the recipe. The prune recipes recently sent were fine. I enjoy the household department a great deal and always read it first. I keep all of our papers.—Subscriber, Chico.

Here is the recipe vouched for by the California Prune and Apricot Growers. The Cultivator will also be glad to receive from readers other recipes which they have found good:

One cup scalded milk, 1 tablespoon melted shortening, 2 tablespoons sugar, 1 teaspoon salt, ½ cake yeast dissolved in ¼ cup lukewarm water, between 3 and 3½ cups flour and 1 cup cooked Sunsweet prunes drained and cut in quarters. Put shortening, sugar and salt in hot milk, let stand until lukewarm, then add dissolved yeast. Add flour gradually, beating well until too stiff to stir. Turn on molding board and knead in remaining flour until mixture is smooth. Place in well greased bowl, brush dough over with melted shortening, cover and allow to rise in a warm place to twice its original bulk, then turn on board, add prunes, knead and shape into loaves. Place in greased pans, having them about half full. Brush over loaves with melted shortening, let rise again and bake in a hot oven about 45 minutes for a medium sized loaf.

Dates

For what are the following dates noted in history: 684, 757, 813, 981, 1453?—Subscriber, Merced.

680-681—Council of Constantinople (sixth general council).

756—Foundation of the Ommeyade Kingdom (afterward caliphate) of Cordova by Abderrahman.

813—The Bulgarian Khan Krumm menaces Constantinople. Accession of the Caliph Al-Mamoun.

981-982—War of Otho II against the Saracens and Greeks in South Italy. His army was finally overthrown.

1453—Constantinople taken by the Turks.

MANICURING BUTTONS

Don't get discouraged when your expensive pearl buttons lose their luster. Just a little labor will brighten them up as good as new. Soak the buttons in olive oil or a good quality of machine oil. When you take them out rub them hard with powdered pumice, talcum powder, or a good nail polish. The nail polish should always be used to finish them up with, and they will shine like well manicured nails. Cut jet buttons should be scrubbed with a toothbrush and good soapsuds, and steel and other buttons are often improved by this method. It is too much work for the busy housewife on the farm to remove pearl buttons from skirts or other garments when washed, and they are bound to lose their luster eventually, but a little manicuring will renew them completely.

ONE TOO MANY

A winsome little Miss of five years who had made her first visit to a Sunday school was greatly impressed with the things the teacher of the kindergarten class told the pupils.

The child was told that God is everywhere—that no matter where she went He was with her and watching her; so that she must be a very good little girls.

The next day the little lady was walking on Washington Avenue, where she lives with her parents, when she looked around and saw her little black kitten trotting along behind her.

"Kitty," she said angrily, stamping her tiny foot, "you go right back home. It's bad enough to have God tagging along with me all the time I don't need you."

YOUTH, THE RADICAL

Admiral Sims said at a dinner party in New York:

"Youth is always an extremist. Take, for instance, the battleship question. We middle-aged sailors are just now asking ourselves exactly how much the submarine has impaired the value of the battleship, but youth has got the question settled for good and all.

"'What is the value of the battleship today?' I said to a naval cadet, at a luncheon.

"'No value at all,' he answered.

"Then he thought a moment and added:

"'Of course, she's got a very nice deck for dancing.'"—Detroit Free Press.

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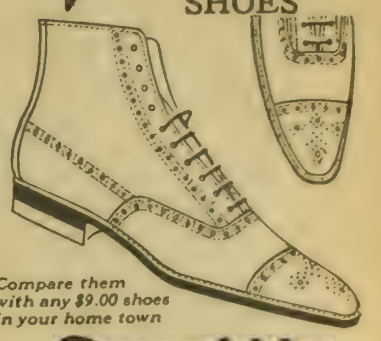

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Simply fill out and mail the coupon at the bottom of this ad. We will deliver the shoes immediately. When you receive them hand $4.68 to the postman. That's all. He will forward the money to us. Try the shoes on, compare them with any $9.00 shoes in your town. If you are not satisfied in every way—with the fit, the style, the workmanship, the finish, the material, return them to us, at our expense. We will refund your money in full at once, without question. After 78 years of "Werner" shoe merchandising we cannot afford to have one dissatisfied customer.

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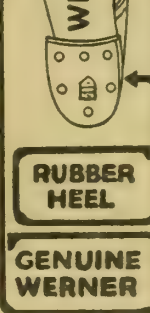

Exactly the same style that well-dressed men are wearing in San Francisco and New York right now. Dark Tan Calfskin finished. Artistically perforated in latest design. Plump Sole leather Outersole. Solid Sole leather Innersole. Strongly stitched. Felt-padded Tongues. Rubber Heels already attached. (An additional saving of 65c.) In every respect a quality shoe. Sizes 5 to 11. Widths B, C, D and E. Be sure to state the size you wear. If possible copy all the numbers and letters in the lining of your best fitting old shoes. Remember—send no money. We pay mailing cost.

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Cattle from this herd have invariably done well for new owners in California, and the present offering will consist of approximately 55 females and 5 bulls, mostly carrying the Harris Standard 2nd—Beau Blanchard 76th cross that has been the outstanding feature of our Hereford shows the past two years.

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Saturday, October 29, 1921

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At the present time herd bulls are from dams averaging 30 pounds butter fat. This is absolutely one of the best herds ever offered at public auction.

Lunch will be served at noon.

Truck delivery may be arranged for at the ranch.

TERMS—Cash or one-third cash, balance approved note 6 months at 8 per cent.

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AUCTIONEERS

MR. FARMER:—

You are contemplating the purchase of a service bull next year. Why not save 50 per cent of the purchase price by buying a registered Holstein bull calf now. Pay for him next year when he is ready for service.

Sons of SIR VEEMAN KORNDYKE PONTIAC, who has 27 A. R. O. daughters, and of BURR WALKER SADIE VALE, whose seven nearest dams average 29 lbs. of butter in 7 days, included in this offer. Call or write at once.

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SWINE AT THE SOUTHERN CALIFORNIA FAIR

Hampshires

Riverside has always been known for the number and quality of Hampshires shown as there are a number of big Hampshire herds in that vicinity. This year herds from that other Hampshire hotbed, Ventura and Santa Barbara Counties, came out for blood, and most of the ribbons went to these latter men.

A. V. Buell of Carpinteria won both grand championships but his old sow, Floreine 2nd, was beaten for the honors by her littermate, Floreine 4th. Buell won the aged and young herds and get of sire and produce of dam. James Marwick of Santa Barbara won both junior championships and breeder's young herd. In the litter contest the Fairbanks Ranch of Redlands was first.

This was the strongest Hampshire show ever held in California and many hogs that would have been winners in times past were not in the money.

Polands

The feature of the Poland show was the grand champion boar, Navy Boy, shown by Gatewood and Stevens of Fresno. The judge was candid enough to remark that this boar could have been the big noise at the National Swine Show this year. He has been unbeaten in California and the Poland men of this state are not far behind the Middle West if the reports of the judges and spectators are to be taken seriously. Practically all of the other ribbons went to Buckland and McNeil of Fresno, who have a fine well balanced herd out this year.

Exhibitors: Buckland & McNeil, Fresno; Gatewood & Stevens, Fresno; N. N. Watts, Arlington; Johnson Bros., San Diego; David H. Kelly, Corona; William Mays, Riverside; Albert Canaham, Riverside; Percy Robinson, ————; Harold Anderson, Riverside; Thurman B. Irwin, Ontario; Glemmill & Son, Ontario.

Aged boar—1, Big Timm, Buckland & McNeil.

Sr. yearling—1, Navy Boy, Gatewood & Stevens; 2, Giant Prospect, Buckland & McNeil.

Jr. yearling—1, Liberty Ladd, Watts.

Sr. pig—1, Giant Checkers, Buckland & McNeil.

Jr. pig—1, The Flash, Buckland & McNeil; 2, The Spark, Buckland & McNeil.

Aged sow—1, Hawkeye Maid, Buckland & McNeil; 2, Polandale Betty, Buckland & McNeil; 3, Model May, Johnson Bros.; 4, Mary Pickford, Watts.

Sr. yearling—1, Prospect Molly, Buckland & McNeil; 2, Molly Prospect, Buckland & McNeil; 3, Model Mary, Johnson Bros.; 4, Model Betty II, Kelly.

Jr. yearling—1, Orange Ideal, Buckland & McNeil; 2, Lady Model, Johnson Bros.; 3, Model Queen, Johnson; 4, Perfection 4th, Watts.

Sr. pig—1, Twin Lady, Irwin; 2, Model Betty III, Kelly; 3, Lady Timm, Glemmill & Son; 4, Model Beauty, Johnson Bros.

Jr. pig—1, Miss King Cole. Buckland & McNeil; 2, Lady Beautiful, Buckland & McNeil; 3, Mays; 4, Mays.

Aged herd—1. Buckland & McNeil; 2, Buckland & McNeil.

Young herd—1-2, Buckland & McNeil; 3, Mays.

Young herd bred by exhibitor—1, Buckland & McNeil; 2, Mays.

Get of sire—1, Buckland & McNeil; 2, Mays; 3, Robinson; 4, Canaham.

Produce of sow—1, Buckland & McNeil; 2, Mays; 3, Johnson Bros; 4, Robinson.

Barrows—1, Anderson; 2, Buckland & McNeil; 3, Anderson.

Three fat barrows under 1 year—1, Anderson.

Sr. and grand champion boar—Navy Boy.

Jr. champion boar—The Flash.

Sr. and grand champion sow—Hawkeye Maid.

Jr. champion sow—Miss King Cole.

Poland China promotion pig show special for litter 4 Poland China pigs farrewed on or after Mar. 1, 1921—1, Mays; 2, Robinson; 3. Babcock; 4, Watts; 5, Canaham; 6, Kelly; 7, Porter.

Durocs

The big surprise of the Duroc show was the defeat of Mong's state fair grand champion sow by Thorp's senior sow pig. This pig has been getting better right along and the honor was rightly hers.

In the boars Royal I Am walked up to the top without strenuous opposition. As has been said many times before this boar stands alone in the annals of Durocdom of California as a show hog and he is entitled to all he gets.

Mong made a strong showing again and another of his boar pigs was made junior champion, which gives him three junior championships on three boars out of one litter this season. Mong's senior yearling sow, who was grand champion at San Fernando, was suckling a fine litter at Riverside and was pulled down in flesh, which put her out of the running and also worked hardship on his aged herd. His litter was first in the futurity get of sire

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For Profitable Durocs

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and produce of dam, however. Craig was in the money in nearly all classes and won a number of blues. Besides the purple on the boar Sierra Vista won a number of classes and was runner up in others.

Exhibitors — J. E. Thorp, Lockeford; Wm. V. Mong, Whittier; Frank Morales, Highgrove; Sierra Vista Stock Ranch, Perris; Charnock Ranch, Hemet; Frank Curtis, ————; J. C. Craig, Owensmouth; A. Goodell, ————; W. B. Wilson, Atwater.

Aged boar—1, You'll Do Prince, Thorp; 2, My Partner, Mong; 3, Victor Defender, Morales.

Sr. yearling—1, Royal I Am, Sierra Vista; 2, Royal Pathfinder, Charnock; 3, Uneeda Pathfinder, Atwater.

Jr. yearling—1, Ace of Pathfinders 2nd, Curtis; 2, Pathfinder Jr., Geo. Jr. Republic; 3, Charnock King Orion, Charnock; 4, Orion High Pathfinder, Craig.

Sr. pig—1, Prince of Pathfinders, Craig; 2, Pride of Pathfinders, Sierra Vista.

Jr. pig—1, Aint I Sensation, Mong; 2, Sensation Bank Roll, Mong; 3, Hilong Sensation, Mong; 4, Pioneer Sensation, Goodell.

Aged sow—1, Royal Critic 2d, Craig; 2, May Rose Blossom, Craig; 3, Allie G 2nd, Charnock.

Sr. yearling—1, Fancy Sensation Maid, Charnock; 2, Mabel Sensation Lady 1st, Craig; 3, Classy Sensation. Sierra Vista; 4, Tattletale. Craig.

Jr. yearling—1, Pathfinder's Highlady, Mong; 2, Lady Pathfinder, Mong; 3, Sensation Queen. Sierra Vista; 4, Sensation Fairy Queen, Charnock.

Sr. pig—1, Diamond Sensation Lady, Thorp; 2, Lena Sensation, Sierra Vista; 3, Lucy Sensation, Sierra Vista; 4, Wanda 1st, Craig.

Jr. pig—1, Sensation Ellen. Mong; 2, Sunset Lady, Goodell; 3, Cherrie's Cake, Goodell; 4, Sunkist Lady, Goodell.

Breeder's aged herd—1, Sierra Vista; 2, Mong; 3, Thorp; 4, Craig.

Breeder's young herd—1, Sierra Vista; 2, Wilson; 3, Goodell; 4, Craig.

Aged herd—1, Craig.

Young herd—1, Craig; 2, Wilson; 3, Craig; 4, Charnock.

Get of sire—1, Mong; 2, Goodell; 3, Wilson; 4, Craig.

Produce of dam—1, Mong; 2, Goodell; 3, Wilson; 4, Craig.

Sr. and grand champion boar—Royal I Am.

Jr. champion boar—Ain't I Sensation.

Sr. champion sow—Pathfinder High Lady.

Jr. and grand champion sow—Diamond Sensation Lady.

Berkshires

With over a hundred Berks present and with the barn beautifully decorated the Berkshire men rather hogged the hog show. The Southwestern Berkshire Congress is made up of a live bunch and the Riverside show is sort of home for them, so they have been behind it strong. With Humphrey from the North against the big bunch of Southerners it was nip and tuck from the start and the judge pronounced it the best display of pug noses he has seen this year. Escalon Artful Leader successfully defended his honors against all comers, but Stella MacDillard, a pig club girl, slipped in and garnered the junior championship. Violet's Festine, owned by the Italian Vineyard, closed her season unbeaten for grand champion female, an honor which she has held six times this year. In the juniors the senior sow pig entered by Humphrey was made junior champion.

The special litter show fostered by the American Berkshire Congress brought out considerable competition and first place was won by Humphrey.

Exhibitors: A. B. Humphrey, Escalon; D. J. Bastanchury, La Habra; Italian Vineyard, Guasti; F. L. Hall, Perris; Chester T. Johns, Ontario; Chaffey Union High School, Ontario; R. S. Jones, Etiwanda; Stella McDillard, Etiwanda; Wm. Beard, Cucamonga.

Aged boar—1, Escalon Artful Leader, Humphrey; 2, Escalon May Star, Bastanchury; 3, Model Leader 32nd, Italian Vineyard; 4, Symboleer Real Type, Italian Vineyard.

Senior yearling—1, Grape Wild Leader 4th, Humphrey; 2, Royal Type 3rd, Italian Vineyard; 3, Rose Crest Rival 10, Hall; 4, Baron Duke Natomas, Italian Vineyard.

Jr. yearling—1, Master Type, Johns; 2, Del Rio 2nd, Italian Vineyard; 3, LaHabra May Star, Bastanchury; 4, Grape Wild Champion, Humphrey.

Sr. pig—1, Laurel Achievement, Hall; 2, Riverby Rival 2nd, Nelson; 3, Guasti's Leader Champion, Italian Vineyard; 4, Grape Wild Duke, Humphrey.

Jr. pig—1, Etiwanda Duke, Stella McDillard; 2, Belles Winona Leader, Johns; 3, Escalon Artful Leader 10th, Humphrey; 4, Belles Winona Leader 2nd, Johns.

Aged sow—1, Violet's Festine, Italian Vineyard; 2, Grape Wild Rose 6th, Humphrey; 3, Grape Wild Rose 9th, Humphrey; 4, Escalon Belle 4th, Johns.

Sr. yearling—1, Castle View Royal Duchess, Italian Vineyard; 2, Real Type Belle 4th, Italian Vineyard; 3, Lassie Rose, Hall; 4, Escalon Princess 8th, Humphrey.

Jr. yearling—1, Real Type's Lassie 1st, Johns; 2, Peerless Royal Lady, Italian Vineyard; 3, Real Type's Lassie 2nd, Johns; 4, Matchless Lady Type, Italian Vineyard.

Sr. pig—1, Grape Wild Bernice 13th, Humphreys; 2, Grape Wild Laurel 2nd, Humphreys; 3, Champion Lassie, Johns; 4, Escalon Ruby, Humphreys.

Jr. pig—1, Escalon Artful Princess 1st, Humphreys; 2, Guasti Wondress, Italian Vineyard; 3, Lady Winona Pride, Italian Vineyard; 4, Winona Belle 7th, Johns.

Aged herd—1, Humphreys; 2, Johns; 3, Italian Vineyard; 4, Italian Vineyard.

Young herd—1, Humphreys; 2, Italian Vineyard; 3, Johns; 4, Italian Vineyard.

Aged herd—1, Humphreys; 2, Hall.

Young herd—1, Humphreys; 2, Italian Vineyard; 3, Italian Vineyard.

Get of sire—1, Italian Vineyard; 2, Humphreys; 3, Italian Vineyard; 4, Humphreys.

Produce of dam—1, Johns; 2, Italian Vineyard; 3, Humphrey; 4, Johns.

Barrow—1, Johns; 2, Italian Vineyard; 3, Beard.

Three barrows under 1—1, Beard; 2, Italian Vineyard; 3, Italian Vineyard.

American Berkshire Association Special Litter show—1, Humphreys; 2, Johns; 3, Chaffey Union high school; 4, Italian Vineyard; 5. Johns.

Sr. and grand champion boar—Escalon Artful Leader.

Jr. champion boar — Etiwanda Duke.

Sr. and grand champion sow—Violets Festine.

Jr. champion sow — Escalon Artful Princess.

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We have issued a convenient little book for the keeping of breeding dates of cattle, hoping to aid the breeder and cattle owner in maintaining accurate records. We will gladly mail you a copy free if you request it. A postal will do.
CALIFORNIA BREEDERS SALES AND PEDIGREE CO.
C. L. Hughes, Sales Manager
Sacramento Cal.

USE SHIRE HORSES
Breed your mares to Shire Stallions, good Shire Geldings are in demand. Get some registered Shire Mares.
Shire owners, record colts young, fees are double after one year old. Prepare Shires for fall shows, premiums are very liberal this year. For information on Shires write
W. G. Lynch, Secretary, American Shire Horse Association, Tonica, Illinois.

32 Roselawn Shorthorns
At Public Auction
Roselawn Stock Farm
Owned by H. M. ELBERG
Woodland, California
Wednesday, November 16
At 1 P.M.

Village Beauty E

ROSELAWN SHORTHORNS, one of the longest established herds in the west, have for many years been held in the highest esteem by buyers of dependable Shorthorns.
Directed by constructive breeding practice, and by progressive business methods, the herd has consistently merited its high place among the units of the breed in the west.
Since its last public sale in 1919 the herd has multiplied upon itself and has been strengthened by the addition of choice individuals of fashionable pedigree, until the owner is again in position to offer at public sale a class of Shorthorns that will fully maintain the high standard of the herd.
The offering contains both Scotch and Scotch topped cattle, including cows with calves at foot, bred and open heifers, and a limited number of good young bulls.
Guaranteed Breeders—Tuberculin Tested
TERMS OF SALE: Responsible parties may arrange for credit, with the sale managers, on the basis of one-half cash, balance in six months, with approved notes bearing eight per cent interest, all credit arrangements to be made prior to sale.
Catalog of sale free on request.
Sale Managers
California Breeders Sales and Pedigree Company
C. L. Hughes, Sales Manager, Sacramento, Cal.

At the Big San Francisco Show
we held our own, winning
8 Firsts, 7 Seconds, 1 Champion
and 4 Reserve Champions
AT HOME two heifers require a retest for the sixth time this year
TYPE PLUS PRODUCTION
Tell Us Your Needs in Either Sex
All Animals Tuberculin Tested and Guaranteed Clean
MAXWELL FARMS
Jack Klein, Manager HOLLYWOOD

HOLSTEIN Fred Hartsook RANCH CATTLE
We have assembled an excellent foundation herd of females and will be glad to have breeders call. Fred Hartsook, Lankershim, California.

Tosantos Walker Mead
Born December 9, 1919
Exceptional Yearly Record Backing
His five nearest dams average over 1,000 lbs. butter in a year. He is out of a wonderful daughter of Prince Gelsche Walker and Sir Aaggie Mead De Kol. He is a show bull and is priced for immediate sale.
E. D. BARRY, JR. Workman and Azusa Ave., Covina, Cal.

ARM
Prevents Hog Cholera—Cresy-lol
A standardized Disinfectant. Dilute 1 part with 50 parts of water and use as spray or dip. Manufactured by
ARTHUR R. MAAS, Chemist
308 E. 8th St., Los Angeles, Calif. Write for circular

88 REGISTERED HOLSTEINS 88
AT PUBLIC AUCTION

Palo Alto Stock Farm
Palo Alto, Calif.
Wednesday, November 9
at 10 A.M.

This offering, the first individual public sale from this well known herd, is composed very largely of young cows and heifers of famous blood lines, many with excellent short or long time records, or both, and includes a large number of daughters of

KING PONTIAC SEGIS KORNDYKE, who now has 31 A. R. O. daughters. He is a 30-pound son of King Segis De Kol Korndyke, full brother to King Segis Pontiac.

FINDERNE KORNDYKE NETHERLAND, a son of King Pontiac Segis Korndyke, out of a 31-lb. daughter of Gordon Glen Pontiac.

CARNATION SEGIS WALKER, a son of Johanna McKinley Segis, out of a paternal sister to Segis Pietertje Prospect, the world's record milk cow.

RAG APPLE IMPERIAL KORNDYKE, proven son of Rag Apple Korndyke, and whose daughters are now making some excellent long time records.

This sale affords a great opportunity for selection of young females bred in some of the greatest producing lines of the breed.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OLD TUBERCULIN TESTED AND SOLD SUBJECT TO RETEST BY THE BUYER.

CATALOG OF SALE FREE ON REQUEST

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

San Joaquin County Holstein Breeders

WILL SELL

55 REGISTERED HOLSTEINS 55
AT PUBLIC AUCTION

Fair Grounds, Stockton, Cal.
Tuesday, November 15, 1921

This offering will include some of the very top animals in some of the best San Joaquin County herds, and includes the entire herd owned by J. C. Ramsey, Modesto, excepting four head.

COWS WITH RECORDS UP TO OVER 32 POUNDS BUTTER and over 700 POUNDS MILK IN 7 DAYS!

DAUGHTERS OF HIGH RECORD COWS!

BRED TO BULLS OF HIGH RECORD AND POPULAR BREEDING!

CONTRIBUTORS TO SALE:

J. M. CAMPBELL, Escalon
R. STEVENS, Stockton
J. C. RAMSEY, Modesto
M. J. & B. A. EDWARDS, Escalon
SALFIELD & CONDON, Escalon
AND OTHERS

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OLD TUBERCULIN TESTED AND SOLD SUBJECT TO RETEST BY THE BUYER.

Catalog of Sale Free on Request

Auctioneers:
Col. Ben A Rhoades
Col. John A. Davis

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

Nate Hauck of Humboldt County Wins Cultivator Prize

By Prof. F. W. Woll

Five grade cows owned by Nate Hauck of Alton had the highest average production of butter fat of similar groups in herds entered in the state dairy cow competition during the month of September, viz., 59.16 pounds and the California Cultivator prize for that month was accordingly awarded to him. The production of the individual grades for the month was as follows:

	Age, Years	Days in Milk	Milk Lbs.	Butter Per ct.	Fat Lbs.
Chub	5	78	1386	4.9	67.91
Lily	4	84	1116	5.9	65.84
Bird	6	117	1047	5.3	55.49
Bally	12	168	1602	3.4	54.47
Slow	4	183	930	5.6	52.08
Average	6	126	1216	4.86	59.16

All are grade Jerseys except Bally, a grade Holstein.

This is the second time that this prize has been awarded to Mr. Hauck as he also won it last June for the production of five other grades in his herd. It will be seen that the production of the prize winning grades for September ranged from 67.91 pounds to 52.08 pounds of butter fat, the average production of milk being 1216 pounds, with an average fat content of 4.86 per cent (average distance from calving at beginning of month, 126 days).

These cows stood first among similar groups of five grades in 21 dairy herds in different parts of the state that competed for the Cultivator prize the past month. The average production of butter fat for nine of the groups came above 50 pounds, the lowest producing grades averaging 27.60 pounds. Five grades owned by the following dairy farmers produced an average of over 50 pounds of fat during the month, viz., N. Hauck, Alton, 59.16 pounds; Earl Graham, Compton, 56.23 pounds; P. Iverson, Grizzly Bluff, 55.13 pounds; M. Pontoni, Arcata, 54.86 pounds; Leo Christen, Waddington, 53.73 pounds; University Dairy, Berkeley, 52.53 pounds; J. A. Herbers, Waddington, 51.27 pounds; J. A. Genzoli, Loleta, 51.07 pounds; and W. D. Early, Grizzly Bluff, 50.01 pounds.

This is the sixth mouth in succession that the Cultivator prize has gone to a Humboldt County farmer, and honors are now even between this and Los Angeles County in connection with this prize, both counties having secured it six times to date. As the cows in the northern county freshened in the spring, some as late as April and May, they have a great advantage over cows in other herds that were entered early in the competition and are now about to finish their record periods. An average production of nearly 60 pounds of butter fat by the prize winning grades at more than four months from frehening is, however, most creditable and reflects great credit both on the owner, the cows and the section they represent.

Famous Jersey Cow

When Sphie 19th of Hood Farm made the world's Jersey record of 999 pounds of butter fat a few years ago there were many who thought that this great animal had been pushed to the limit and would never again make a great record. When she finished that record she was eight years and eleven months of age, and her latest record is the fifth she has made since that time.

Sophie 19th has been the dam of many registered calves, among which is Pogis 99th of Hood Farm, without a doubt one of the greatest production sires of the dairy world. Pogis 99th has been the sire of such cows as Sophie's Agnes, Sophie's Adora and Sophie's Bertha.

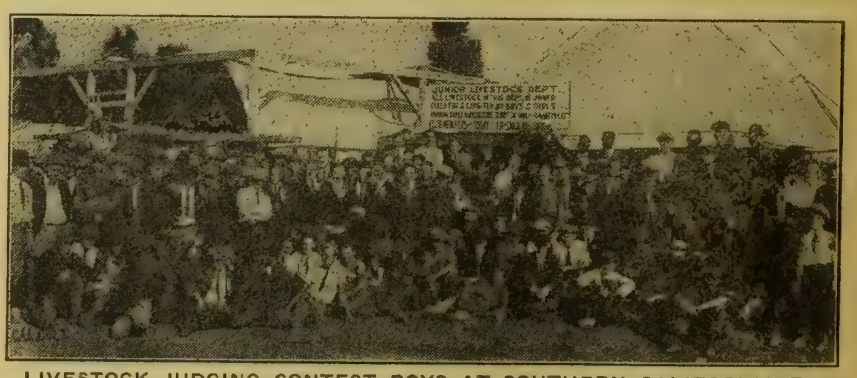
A summary of the ten year's records made by Sophie 19th follows: 12,185 pounds milk, 683.20 pounds fat, at 15 years, 8 months; 10,360.9 pounds milk, 566.56 pounds fat, at 14 years, 6 months; 8,688.2 pounds milk, 507.26 pounds fat, at 13 years; 15,948.2 pounds milk, 847.87 pounds fat, at 11 years, 9 months; 11,915.4 pounds milk, 680.49 pounds fat, at 9 years, 7 months; 17,557.8 pounds milk, 999.10 pounds fat, at 7 years, 11 months; 15,099.4 pounds milk, 931.90 pounds fat, at 6 years, 7 months; 14,373.2 pounds milk, 854.90 pounds fat, at 4 years, 11 months; 9,924.8 pounds milk, 570.80 pounds fat, at 3 years, 8 months; 7,050.2 pounds milk, 395.90 pounds fat, at 2 years, 2 months.

Some of the interesting sidelights to this phenomenal cow's life work are that Sophie has held two class championships, has never been passed as a producer of butter fat since her fifth record for long distance production, is a record holder for cows beginning test at such advanced age as on her last record; has had granddaughters that exceeded her production at the same ages and that have also been breed champions. She is still in good health with good prospects of stretching her record even further.

She has given enough milk to supply 20 children each with a quart of milk daily for ten years. Sophie has also contributed enough to the farm business to register $10,000 in the cash sale of her products either way you figure it—milk or butter, and she has also contributed several times this amount in the value of her progeny. She has been shown at several of the biggest dairy cattle shows in America, and when traveling has been insured for as much as $50,000.

POISONOUS MILKWEEO

All milkweeds (asclepias) are poisonous to livestock, though freely eaten by sheep only. When range conditions are good it is thought not even sheep will eat these plants. But they persist in dry tracts when all other vegetation has dried up, hence the danger. Asclepias Mexicana is one poisonous species found in all parts of California, north to southern Washington, east to western Nevada, and a small area in western Arizona. It is the narrowest leaved of all milkweeds, grows two to five feet high generally, but may range from one to ten feet. Not only should the plants be cut down in pastures, but the roots should be dug out.



LIVESTOCK JUDGING CONTEST BOYS AT SOUTHERN CALIFORNIA FAIR

This was the greatest judging contest ever held in California. From this bunch two are chosen to be sent as a part of California's team which will compete at the Chicago International. John F. Osborn, farm adviser for Riverside County, is standing at reader's extreme left. R. A. Condee of California Junior Republic is on extreme right. J. B. Lillard, state supervisor of agricultural education, Prof. Hughes, Prof. Tomson and J. I. Thompson are kneeling near center of picture.

Southern California Fair

COMING at the end of the fair season the Southern California fair at Riverside acted as a sort of clean-up show and brought together the largest classes of all breeds of dairy stock and hogs that were shown during the season of 1920. Beef cattle and horses were not so numerous but practically all breeds were represented by at least one herd of good ones.

Mr. Standish of Ohio, who judged the dairy cattle, and Carl P. Thompson of Oklahoma, who handled the hogs, were high in their praises of the quality and quantity of stock shown.

DAIRY CATTLE

Holsteins

Exhibitors: E. R. Stalder, Wineville; Robt. Clapp, Nuevo; Bost & Johnstone, Corona; Sierra Vista Ranch, Perris; Carl Ray, Lankershim; Maxwell Farms, Hollywood; E. G. Stinson, Orange; Berylwood Stock Farms, Hueneme; Perle R. Penrose, Pomona; Chaffey Union High School, Ontario.

Aged bull—1, King Segis Pontiac Jannek, Santa Monica; 2, Prince Aralia, Clapp; 3, Prince Clothilde De Kol Nomstead, Bost & Johnstone; 4, K. P. Neth. Segis 3rd, Stalder.

2 year old—1, Sir Ormsby Skylark Rauwerd, Sierra Vista; 2, K. S. P. Count, Clapp; 3, Prince Julianna Fayne, Ray; 4, Republic Tuebie Korndyke, Penrose.

Sr. yearling—1, Sir Ormsby Heng. Sky., Maxwell; 2, King Segis Pontiac Acro. Clapp.

Jr. yearling—1, Dichter Spofford Korndyke Vale, Stinson.

Sr. calf—1, Nuevo De Kol Ormsby, Stalder; 2, Berylwood Fobes Korndyke, Berylwood; 3, S. V. Ormsby Pontiac Goldrop, Sierra Vista; 4, Tritomia Orms. Piet. Fayne, Maxwell.

Jr. calf—1, Prince Alcartra Walker Segis, Berylwood; 2, Sir Orms. Aralia Skylark, Sierra Vista; 3, Lady Pansy J. Ormsby, Maxwell; 4, Col. Netherland Segis, Clapp.

Aged cow—1, Segis Walker Gelsche, Clapp; 2, Joy Heng. Clothilde, Maxwell; 3, Nancy Calamo Korndyke, Clapp; 4, Beauty de Kol Reka Ormsby, Hartsook.

2 year old—1, Queen Orms. Netherland Parthenia, Maxwell; 2, K. S. P. Joy May Beets, Clapp; 3, Dorothy Aralia de Kol, Bost & Johnstone; 4, K. S. P. Clothilde Lady, Clapp.

Sr. yearling—1, Lily McKinley Ormsby Skylark, Maxwell; 2, Korndyke Segis Pont. Jannek, Hartsook; 3, Wadnah Ormsby Skylark, Maxwell; 4, K. L. B. D. K. Airplane Belle, Ray.

Jr. yearling—1, Juliana Pont. Nancy, Sierra Vista; 2, Miss Aaggie Mead de Kol Veeman, Santa Monica; 3, Burbank Witkop Rodnick, Santa Monica; 4, Burbank Roxanna Alcartra, Hartsook.

Sr. calf—1, Nuevo Aralia Rowena Ormsby, Stalder; 2, Pearl Walker Gelsche, Clapp; 3, Julianna Repeater Marco Alcartra, Hartsook; 4, Pansy Sky Tritomia Ormsby, Maxwell.

Jr. calf—1, Carolyn Wayne Fayne, Hartsook; 2, Nuevo Zozo Ormsby, Stalder; 3, Nuevo Vinito Ormsby, Stalder; 4, Flush Ormsby Tritomia, Maxwell.

Aged herd—1, Santa Monica; 2, Clapp.

Breeders young herd—1, Maxwell; 2, Hartsook.

Calf herd—1, Maxwell; 2, Hartsook; 3, Sierra Vista; 4, Stalder.

Dairy herd—1, Clapp; 2, Hartsook; 3, Maxwell; 4, Bost & Johnstone.

Get of sire—1, Maxwell; 2, Sierra Vista; 3, Stalder; 4, Maxwell.

Produce of dam—1, Sierra Vista; 2, Hartsook; 3, Maxwell; 4, Clapp.

Sr. and grand champion bull, King Segis Pontiac Jannek.

Jr. champion bull, Prince Alcartra Walker Segis.

Sr. and grand champion cow, Segis Walker Gelsche.

Jr. champion cow, Caroline Wayne Fayne.

Jerseys by Jack Klein

For the first time this season Jim Thorp of Lockeford ran into a Jersey show where he had to extend himself to the utmost to win, and even then he lost a number of classes. Cook's Jersey Dairy of Chino entered a strong herd and together with J. E. Wherrell and George Thomas of Riverside cut into Thorp's usual winnings, but Jim was successful in winning senior and grand championships in both sexes. Fortini's young bull was again junior champion and Thorp won junior champion female. Wherrell and Thomas took most of the group prizes excepting aged herd and dairy herd, which went to Thorp. It was an extremely strong show and no one was beaten until the ribbons were tied.

Exhibitors: J. E. Thorp, Lockeford; Geo. W. Thomas & Sons, Riverside; Cooks Jersey Dairy, Chino; C. McLouth, Clearwater; Gaines, Clearwater; McMinn & Ralson, Corona; M. Fortini, Orland; J. E. Wherrell, Riverside.

Aged bull—1, Jolly Senator Raleigh, Thorp; 2, Nobles Raleigh's Major, Thomas; 3, Lilys Lowland Fern, Cooks; 4, Mascots Raleigh, Louth.

2 year old—1, Sans Aloio Brightness, Cooks; 2, Biddys Kings of Mossdale, Thorp.

Sr. yearling—1, Fairy Boy of Mossdale, Thorp; 2, Jacobs Raleigh, Gaines.

Jr. yearling—1, Gypsy King Raleigh, McMinn & Ralson; 2, Spring Jack, Thorp; 3, Mks Raleigh, Thomas; 4, K. F. Buttercup King, Thorp.

Sr. calf—1, Orla of Tintagel, Fortini; 2, Solid Golden's You'll Do, Wherrell; 3, Snowdrop Oxford Prince, Wherrell; 4, Biddy's King of Mossdale, Jr., Thorp.

Jr. calf—1, King Tip of Mossdale, Jr., Thorp; 2, Fern's Beyy's Champion, Cook; 3, Unnamed, McClouth.

Aged cow — 1, Salome of Mossdale, Thorp; 2, Naomi of Mossdale, Thorp; 3, Dame Vilda, Thomas; 4, Goldie Nehalem Cowslip, Thorp.

2 yrs.—1, Imp. Bertha, Cooks; 2, Oxfords Noras Daisy, Thorp; 3, Nobles Jewel Girl, Thomas; 4, Rowenas Eminent Jewel, Cook.

Sr. yearling — 1, Shylocks Countess, Cook; 2, Jolly Ementa of Mossdale, Thorp; 3, Nobles Vilda, Thomas; 4, Watkins Vilda, Thomas.

Jr. yearling—1, Coraline of Golden Glenn, Thomas; 2, Ramona of Mossdale, Thorp; 3, Elodine's Oakhurst Star, Cook; 4, Raleighs Areto, McClouth.

St. calf—1, Watersus Mossdale, Thorp; 2, Goldie of Mossdale, Thorp; Priscilla Prince Ardelle, Wherrell; 4, Town Lass Dottie Dell, Wherrell.

Jr. calf—1, Kings Miss of Mossdale, Thorp; 2, Priscilla Prince Daisy, Wherrell; 3, Ferns Interested Violet, Cooks; 4, Priscilla Prince Bessie, Wherrell.

Aged herd—1, Thorp; 2, Thomas; 3, Cook; 4, McClouth.

Young herd—1, Thomas; 2, Thorp; 3, Cook.

Calf herd—1, Wherrell; 2, Wherrell; 3, Cook.

Dairy herd—1, Thorp; 2, Thomas; 3, Cook.

Get of sire—1, Thomas, 2, Wherrell; 3, Thorp; 4, McClouth.

Produce of dam—1, Wherrell; 2, Thorp; 3, McClouth.

Senior and grand champion bull— Jolly Senator Raleigh.

Junior champion bull—Orland Tintagel.

Senior and grand champion cow—Salome of Mossdale.

Junior champion cow—Kings Miss of Mossdale.

Guernseys

In the Guernseys a number of herds which have had considerable success during the season came together, and it was a hot fight from the start. Humphrey's aged bull, who was grand champion at the state fair, was alone in his class but was beaten by the great two year old owned by Adohr Stock Farms for senior champion. This bull was beaten in turn by the junior champion owned by the Windmere Ranch of Chino for the grand championship. There was considerable hesitation on the part of the judge before he placed the young bull first but the decision was well merited.

In the females Imp. Lulu's Pride of the Salines, a noted English show cow now owned by the Windmere Ranch, was outstanding. This cow was bought by Chas L. Hill, Guernsey importer for Walter Dupee a couple of years ago, and was later sold to Dr. Wessels of San Diego, who owns the Windmere Ranch. Humphrey won junior champion female and a number of firsts. Russell S. Cox of San Marcos and A. A. Cook of Brawley were newcomers at the show but were in the money a number of times.

Exhibitors: A. B. Humphrey, Escalon; Adohr Stock Farm, Van Nuys; Russell S. Cox, San Marcos; C. G. Wallace, San Bernardino; Windmere Farm, Chino; A. A. Cook, Brawley; J. A. Hammer, Riverside; Jas. Marwick, Santa Barbara.

Aged bull—1, Nobleman of Maple Hill, Humphrey.

2 yrs.—1, Inspiration of Edgemoor, Adohr; 2, Reliance of Edgemoor, Cox; 3, Hidden Valley Acadia, Wallace.

Junior yearling—1, Imp. Man of War of Edgemoor, Windmere; 2, Gold May Secret of Edgemoor, Cook; 3, Brilliant's May Seeret of Edgemoor, Windmere; 4, Escalon Rex, Humphrey.

Senior calf—1, Aristocrat of Windmere.

55 Royally Bred Young Registered Holsteins 55

40 FEMALES — 15 BULLS

SELLING AT PUBLIC AUCTION BY

A. W. Morris & Sons Corporation, Woodland, Cal.

At State Fair Grounds, Sacramento, Cal.

Thursday, November 3, at 10 A.M.

Never before have buyers had an opportunity to secure at their own price so large a number of young cattle from this herd, sired by the best Morris herd bulls, out of dams of rich breeding and many with great records, and most of the females carrying the service of one or the other of the great present Morris herd sires.

While a considerable number of the young females in the sale have 7 and 305 day records, there are many 2 year olds that are milking and have no records, due to the fact that there has not been barn room enough on the Coil place to house these heifers as they have freshened, and buyers are certain to secure some great bargains in these heifers.

ALL OF THE FEMALES EXCEPT FOUR IN THIS SALE ARE SIRED BY SIR AAGGIE DE KOL ACME, KING MEAD OF RIVERSIDE, PRINCE GELSCHE WALKER, KING MORCO ALCARTRA, OR SEGIS PONTIAC DE KOL BURKE, EVERY ONE OF WHICH HAS SIRED A WORLD'S RECORD DAUGHTER OR IS OUT OF A DAM THAT HAS BEEN A WORLD RECORD PRODUCER.

THE DAUGHTERS OF SIR AAGGIE DE KOL ACME include some with 305 day records up to over 653 lbs. butter for first calf 2 year olds, and are out of dams with records up to over 30 lbs. butter in 7 days and up to over 1,000 lbs. in one year.

THE DAUGHTERS OF SEGIS PONTIAC DE KOL BURKE include some with records up to over 763 lbs. butter in 365 days for a senior 2 year old, some out of high record dams.

THE DAUGHTERS OF KING MORCO ALCARTRA, KING MEAD OF RIVERSIDE, AND PRINCE GELSCHE WALKER, are practically all 2 and 3 year olds, many out of dams with high 7 day and 365 day records, and a large number of them due to calve this fall and early winter.

BULLS TO WHICH FEMALES IN THIS SALE ARE BRED

All of the best females in this sale are bred to Sir Aaggie De Kol Acme, Sir Aaggie De Kol Mead, Sir Prince Aaggie Mead, or King Aaggie Mead. Calves from any one of them, out of such dams as will be found in this sale, would add value and attractiveness to the best herd in America.

REMEMBER that nineteen of the great young females in this sale are due to calve before December 10 to SIR AAGGIE DE KOL MEAD, whose calves are rated in the Morris herd as perhaps the most promising they have yet secured from any bull.

A detailed list of the great young females in this sale is needless at this time, for the fact that they are sired by the Morris herd sires noted above, mostly out of dams sired by herd sires that have been in use in the Morris herd during the past years, and that they sell mostly bred to the great young sires noted above is evidence enough of the outstanding quality of the offering.

ELEVENTH HOUR ENTRIES

Just before the catalog went to press we received three additional entries, ONE OF THEM A 16 POUND JUNIOR 2 YEAR OLD DAUGHTER OF THE

$12,000.00 BULL KING KORNDYKE PONTIAC 20TH, fresh in July, and an 18.70 lb. junior 2-year-old, and a 19.75 lb. junior 2-year-old daughter of a 30 pound bull, both heavy in calf to Sir Aaggie De Kol Mead, making 21 females in this sale due to calve to his service before December 10.

FIFTEEN YOUNG BULLS IN THE SALE

The bulls in the offering include several that should head purebred herds, and a splendid lot that will introduce the world's most productive blood into grade herds. All of them are sired by Sir Aaggie De Kol Acme, Sir Aaggie De Kol Mead, Sir Aaggie Mead De Kol, or King Aaggie Mead, and out of dams of rich breeding, some with records up to over 35 lbs. butter in 7 days; others with good yearly records.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL TUBERCULIN TESTED AND SOLD SUBJECT TO RETEST BY THE BUYER.

TERMS OF SALE: Responsible parties may arrange for credit on the basis of one-third cash, balance in three, six, and nine months, with approved notes bearing eight per cent interest, if arrangements for credit are made before sale with California Breeders Sales and Pedigree Co.

Headquarters of Sale: Travelers Hotel, Fifth and J Sts., Sacramento, Cal.

— CATALOG OF SALE FREE ON REQUEST TO SALE MANAGERS —

Auctioneers:
Col. Ben A. Rhoades, Los Angeles
Col. John A. Davis, Manteca

MANAGEMENT
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

Windmere; 2, Escalon Fancy Lad, Humphrey; 3, Escalon Princess Whiteface, Humphrey; 4, Cypress of Adohr Farms, Adohr.

Junior calf—1, Escalon Itchen Prince, Humphrey; 2, Escalon Search Light, Humphrey; 3, Rule Langdon of Hollow Hill Farm, Marwick; 4, Adohr Escondido, Adohr.

Aged cows—1, Imp. Lulu's Pride of the Salines, Windmere; 2, Imp. Cherry 3d of the Effards, Windmere;3, Revada Lily Bell, Humphrey; 4, Golden Annes Fairy, Humphrey.

2 years old—1, Escalon Lassy, Humphrey; 2, Glenmore Slope, Cox; 3, Tritomas Lady Iva, Hammer.

Sr. yearling—1, Mayheney Lassey Bonney, Humphrey; 2, Pearl Rose Secret of Revada, Windmere; 3, Pearl Souffle of Revada, Humphrey; 4, Melba May Sierra, Cox.

Jr. yearling—1, Vampire of Edgemoor, Windmere; 2, Minuet of Edgemoor, Windmere; 3, Earlmarskee 2d, Cox; 4, Escalon Queens, Humphrey.

Sr. calf—1, Pearl Rose Golden Heiress of Edgemoor, Windmere; 2, Escalon Pearl, Humphrey; 3, Wanita of Twin Oaks, Cox; 4, Escalon Marigold, Humphrey.

Jr. calf—1, Escalon Naomi, Humphrey; 2, Sweetbrier of Adohr Farm, Adohr; 3, Escalon Phylis, Humphrey; 4, Vesta of Windmere, Windmere.

Aged herd—1, Humphrey.

Young herd—1, Windmere; 2, Humphrey; 3, Cox.

Calf herd—1, Humphrey; 2, Cox.

Dairy herd—1, Humphrey.

Get of sire—1, Windmere; 2, Humphrey; 3, Adohr; 4, Cox.

Produce of dam—1, Cox; 2, Cox.

Sr. champion bull—Inspiration of Edgemoor.

Jr. and grand champion bull—Imp. Man of War of Edgemoor.

Sr. and grand champion cow — Imp. Lulu's Pride of the Salines.

Jr. champion cow—Escalon Naomi.

Ayrshires

In the Ayrshire classes A. A. MacMinn of Phoenix and Mark Butterfield of Riverside were the only exhibitors and practically all of the honors went to MacMinn, who has a large herd of show stock.

Exhibitors: A. McMinn, Phoenix, Arizona; Mark Butterfield, Riverside.

Aged bull—1, King of Beauty, McMinn.

Sr. yearling—1, Finlayston Sunset, Butterfield.

Jr. yearling—1, Desert Crest Monarch, McMinn.

Sr. calf—1, Ayrshire Billy Boy, McMinn; 2, Elnora Boy, McMinn.

Jr. calf—1, Lochinvar Laddie, McMinn; 2, Ivy's Butter Boy, McMinn; 3, Mojist of Lochinvar, McMinn.

Aged cow—1, University of Ivy Rose; 2, Ella Dean of Mesa, McMinn.

2 years—1, Sweet Marie of Phoenix; 2, Bonnie Jean of Mountain View, McMinn.

Sr. yearling—1, August Lassy, McMinn; 2, Pullthru Fourth of Intervalley, Butterfield; 3, Heather Bell of Phoenix, McMinn.

Jr. yearling—1, Grace of Litchfield; 2, Arizona Dairy Maid; 3, Arizona Grace Darling, McMinn.

Sr. calf—1, Edith Cavell; 2, Lochinvar Jean Ayre, McMinn.

Jr. calf—1, Lochinvar Lassy; 2, Lochinvar Isabella; 3, Lochinvar Queen, McMinn.

Aged herd—1, McMinn.

Young hard—1 and 2, McMinn.

Calf herd—1 and 2, McMinn.

Dairy herd—1, McMinn.

Get of sire—1, 2 and 3, McMinn.

Produce of dam—1, 2 and 3, McMinn.

Sr. and grand champion bull—King of Beauty.

Jr. champion bull—Lochinvar Laddie.

Sr. and grand champion cow — Allen Dean of Mesa.

Jr. champion cow—August Lassie.

Dairy Shorthorns

All honors to Fred Hall of Perris.

(For comment on swine exhibits and awards see Page 450.)

HOG SALE SUCCESS

The Sutter County farm bureau put over its first hog auction sale last Tuesday, October 18, 1921, at E. A. Noyes & Sons Ranch near Sutter City. Over 200 hogs were sold, with the tops bringing $10.25 and the heavy stuff $9.40. These were exceptionally high prices for a San Francisco market of 10 cents. President G. C. Galbraith of the Sutter County farm bureau stepped in and graded the hogs when the regular grader did not appear. He did exceptional work as the price indicates. The buyers were J. A. Wood and Valley Meat Co.

Regular monthly sales are to be held from now on and it is hoped that later a sale at Meridan and one at Yuba City can be arranged. W. U. Hudson, manager of the farm bureau, states that it is the hope that fruit growers can be shown the advantage of diversified crops. It is a proven fact that hogs can be raised along with fruit to good advantage.

"BEE MEET"

A get-together meeting of beekeepers will be held at Exposition Park, Los Angeles, Friday and Saturday, November 4 and 5. Sessions will be held in the Assembly Room. Opening session, 10 a. m., Friday. The arrangement committee writes:

"A regular old-time, dyed-in-the-wool 'Bee Meet' for everyone. This will be the biggest meeting of bee interests in years.

"We hope to organize to insure one of its kind for Los Angeles at least once each year. Come and help to make it what you want it to be. Bring your lunch; free coffee and trimmings furnished. A large number of prominent bee men are on the program, and fine music is promised.

"A $10 prize in bee supplies is offered for the shortest acceptable name for the new organization."

Publicity committee—C. A. Schirm, chairman, Los Angeles; H. E. Sweet, Los Angeles; T. O. Andrews, Corona; M. H. Mendleson, Ventura; L. W. Wells, Somis.

Program and finance committee—Geo. L. Emerson, chairman, Los Angeles; F. W. Ferree, Saugus; Ted Cookingham, Los Angeles; C. P. Vandruff, Pomona; Miss E. A. Barr, Los Angeles.

Constitution committee—A. B. Shaffner, chairman, Los Angeles; C. A. Schirm, Los Angeles; W. H. Engel, Los Angeles; L. W. Wells, Somis; H. E. Sweet, Los Angeles; E. B. Shaffner, Los Angeles; F. R. Buchanan, Glendale; M. H. Mendleson, Ventura.

Invitation committee—Geo. De Sellem, chairman, Los Angeles.

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Pure Bred Registered Percheron, Arabian and Thoroughbred Horses, Holstein-Friesian Cattle, Southdown Sheep, Big Type Poland China Swine, Mammoth Jacks and Jennets.

Young Breeding Stock of All Kinds

Every Animal Guaranteed

Santa Anita Rancho and Anoakia Breeding Farm

SANTA ANITA Anita M. Baldwin, Owner CALIFORNIA

O.U.R. Hampshire Swine

Ortega-Underhill-Rancho

Thos. T. Dinsmore, Mgr., Santa Barbara, Cal.

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We are breeding some awfully good Berkshires and are having very good success in the shows this fall.

We can supply your demand for

Big Modern Type Berkshires

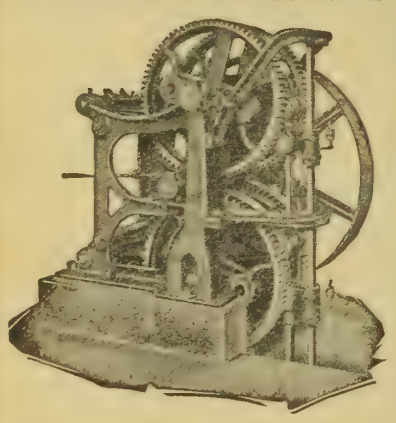
in any class at reasonable prices.

Inquire about our bred gilts and young boars.

ITALIAN VINEYARD COMPANY

Alex. M. Wilson, Supt. Guasti, Cal.

P. S.—Farmers and pig club boys given special attention.



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POMONA, CAL.

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Let us tell you all the details of the Mutual Husbandry Club. There are thousands of acres of land in Fresno County with unlimited agricultural possibilities when put under irrigation.

We want 500 members to vote the district — more than 250 have already joined. Members of the Club can obtain land at dry land prices of $50.00 per acre. Big profits can be made when district is voted.

MAIL THIS COUPON TODAY

Howard & Butterbaugh Land Co., Trustees For Mutual Husbandry Club, 302 New Pantages Bldg., Los Angeles, Calif.

I am interested in the Mutual Husbandry Club and would appreciate full particulars.

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302 New Pantages Bldg.

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Mail all classified copy to Los Angeles Office.

POULTRY

Continued requests are being received by the California Cultivator for varieties of poultry not advertised in our columns. If any of you, our readers and friends, have any you wish to dispose of, send a small advertisement to this office and you will be doing our readers a service as well as yourselves.

Day Old Pullets—Here is your chance to get day old White Leghorn and Ancona chicks, guaranteed at least 90 per cent pullets. We are taking orders fast for October and November delivery. We also have R. I. Red and Barred Rock chicks but do not separate the sex. All chicks are from strictly thoroughbred laying stock and are hatched right and shipped by Special Delivery Parcel Post. Send for prices and get your orders in at once. Orange County Hatchery, Santa Ana, California.

1922—MISSION HATCHERY—1922
Early Chicks are the ones that pay first and best. Our Special Letter will tell why we think so. Write for it and particulars of our White, Brown Leghorns, Black Minorcas, R. I. Reds, Barred and White Rocks. Our matings are purebred heavy laying strains; "quality high, service good, prices reasonable." Write your needs and see if we can not get together. Mission Hatchery, Box 27, Campbell, Cal.

It's no wonder so many poultry raisers make a failure of the business. Without any knowledge of raising poultry people will branch out expecting to make a success. By putting in practice the valuable contents of POULTRY FOR PROFIT, $1.00 postpaid, success is assured in the poultry business. Cultivator Publishing Company, Los Angeles, California.

Sly's Single Comb Rhode Island Reds again show their quality, winning at San Fernando and Ventura seven first prizes, two silver cups, many special honors and other ribbons. Am offering a limited number of line-bred cockerels at $7.50, $10.00 and $15.00; excellent breeders. Send for yours today. Albert Sly, 1642 Middleton Place, Los Angeles.

White Leghorn Baby Chicks: Walter Hogan stock. We get all our eggs from one flock of over 4,000 Walter Hogan hens that have been carefully Hoganized. Our specialty is first class White Leghorn chicks that satisfy our customers. We will have chicks every week. Lyon Hatchery, Gardena, California.

Baby Chicks hatched in Petaluma Incubators are a superior class. Strong, vigorous, sturdy, grow rapidly, lay early. Buy chicks from hatcheries using Petaluma Incubators. You will find one near you, if not, write us. Catalog free. Petaluma Electric Incubator Co., Petaluma, California.

White Leghorn Baby Chicks from heaviest laying (Hoganized) stock. Safe delivery live, vigorous chicks guaranteed. No money in advance; pay on delivery. Prices on request. Established 1898. MUST HATCH INCUBATOR CO., 438 Seventh St., Petaluma, California.

Baby Chicks from 227 egg strain of heavy winter laying S. C. White Leghorns. Book your order now for 1922 delivery of guaranteed chicks and hatching eggs. Pullets and breeding stock. Meyer Poultry Farm, Route A, Box 17-C, Modesto, California.

Baby Chicks—Booking now for 1922 delivery. Order early. White Leghorns, R. I. Reds. Brown Leghorns, Barred Rocks. Write for circular. Stubbe Poultry Ranch and Hatchery, P. O. Box 67-E, Palo Alto, California.

200 Egg Strain S. C. R. I. Reds—Cockerels from hens with trapnest records of over 200 eggs in 12 months; $5.00 and $10.00 each. Also a few cockerels from Ward's prize winners at $5.00 to $25.00 each. Chester D. McCord, Galt, California.

For Sale—Barred Plymouth Rocks; prize winners; some extra fine cockerels for sale now. Eggs for hatching in season; satisfaction guaranteed. Mrs. J. W. Snodgrass, Los Olivos, California.

Barred Plymouth Rocks — "Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Vodden, Los Gatos, California.

White Leghorn Baby Chix from Petaluma's heaviest producing stock. We guarantee safe arrival. Literature on request. Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

For Sale: Buff Leghorn cockerels, hens and pullets. Excellent strain of prize winners. W. L. Bartholomew, Chino, California.

Hudson White Leghorns: Cockerels from 200 egg hens. Official records made in five egg-laying contests. Hudson Ranch, Escondido, California.

For Sale—1612 egg size Success and 1504 egg size Petaluma incubator. A. Worel, Route 3, Napa, California.

Buff Leghorn Breeding Cockerels. Write M. E. Sayer, Neb. Ave., Caruthers, California.

Success in business is attained by experience and knowledge. The poultry business can be made to pay by following the teachings and information contained in POULTRY FOR PROFIT, $1.00 postpaid. Cultivator Publishing Company, Los Angeles, California.

Watch Us Grow: Fall chicks, Rhode Island Reds, B. Rocks, White and Brown Leghorns and Anconas. E. W. Ohlen, Campbell, California.

Buff Cochin Bantam cockerels, prize winning stock, 5 months old, $1.50 each. Paul Fesler, Owensmouth, California.

DOGS

For Sale—Thoroughbred Collie pups. A. Worel, Route 3, Napa, California.

FARM LAND FOR SALE

WE WANT "GO-GETTERS"

Sutter Basin is ready for "Go-Getters." It is a practical farming project in crops today. Deep, rich soil with irrigation and drainage system, river and rail transportation. In the heart of the Sacramento Valley. Very liberal terms to men who know how and will work. Write today. Sutter Basin Company, California Fruit Building, Sacramento.

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Paradise, Your Opportunity to Own a Ranch—Combine health with fruits, nuts, berries and poultry. Inquire C. H. Nielsen, Paradise, Butte County, California.

20 Acre Alfalfa Dairy Ranch, none better in Turlock irrigation district; also cows, hay. Harmon Berg, Hughson, California.

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For Sale—595 acre improved mountain ranch; hog tight, irrigation; no exchange; particulars. R. W. Lipkeman, Box 591, Sonora, California.

For Sale — Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

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Oregon Grown Reset Strawberry Plants for Sale—Extra strong reset strawberry plants, grown on new ground for plants only on rich alluvial soil of Oregon to be sure to give entire satisfaction. New Oregon, Magoon, Gold Dollar, Marshall, Wilson and Clark's Seedling for fall planting. Plants ready middle of November. $1.00 per hundred; $8.00 per thousand; $70.00 per ten thousand and $600.00 per hundred thousand. Orders should be placed at once as supply is only 500,000 plants. Apply to the Padre's Botanical Gardens, 125 S. Milpas Street, Santa Barbara, California.

Berries and Small Fruit Plants, of all standard varieties, grown and shipped direct from my large berry farm here of almost 100 acres. The largest berry farm managed by one person. All plants properly selected from improved and record producing vines, carefully graded and packed; sure to give satisfaction. Now is the time to order to assure early delivery. Twenty-five years of practical experience. State your wants and send for price list today. M. J. Moniz, Berry Specialist, P. O. Box 264, Sebastopol, California.

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For Sale — Clicante-Bouchet. Malaga, Thompson Seedless and Zinfandel rooted vines. These vines are guaranteed A No. 1, true to name; certified and from clean producing vines. Chapman & Son, Modesto, California, P. O. Box 906, Phone 663.

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Strawberries Six Months in the year. Plant Everbearers, Superb, Progressive; $2.00 hundred. Everbearing raspberries 8 for $1.00. Fred Leissler, Route 6, Seattle, Washington.

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Alfalfa Seed — Certified Hairy Peruvian, Smooth Peruvian, Common. Write for samples and prices. Delta Seed & Feed Co., Yuma, Arizona.

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Turkeys—Mammoth White Holland. Have a number of prize winners till Holidays. Toms $10, Hens $5. Mrs. U. S. Smith, Route A, Box 123, Tulare, California.

6 Extra Large Choice White Holland turkey hens for breeding, $5.00 per bird while they last. Mrs. Phil Kratz, Hemet, California.

Turkeys, Hens—Some of my fine bred hens, Mammoth Bronze crossed with wild. Shadel Ranch, Box 5, Ethanac, Cal.

Bourbon Red Turkeys, Buff Orpingtons. The Ferris Ranch, Reservoir Street, Pomona, California.

Bourbon Red Turkeys—Prices reasonable. Mrs. L. S. Grosse, Scottsdale, Arizona.

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WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

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FOR SALE — 100,000 SOUR ORANGE SEED BED STOCK; WASHINGTON NAVEL, VALENCIA LATE ORANGES AND EUREKA LEMON TREES; ALSO FUERTE, LYON, PUEBLA AND DICKEY "A" AVOCADO TREES. T. J. WALKER, FIRST NATIONAL BANK BUILDING, SAN FERNANDO, CALIFORNIA.

Nursery Stock at bargain prices. Prune 10c each; grafted walnuts $1.00 each; pears 20c each; Black caps $20.00 per 1,000; other stocks at bargain prices. Submit your want list, and send for planters list. 31 years in business. Carlton Nursery Co., Carlton, Oregon.

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Reliable Trees and grapevines at a fair price. Write us for price list. We ship on approval. J. F. Miller & Sons, Healdsburg, Cal.

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For Sale—Budded Walnut Trees, Eureka and Placentia Perfection. Mrs. John M. Koller, Puente, California.

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Weanling Boars and Gilts by Pathfinder Wonder (Great Wonder I Am ex an 800 lb. Pathfinder sow) for $10 each. Bred sows and gilts. Derryfield Farm, Capital National Bank Bldg., Sacramento, California

For Sale—My entire herd of Durocs. The very best breeding, some bred, some with young pigs, five good boars. Write what you want, I have it; sell all as am quitting business. John Kincaid, East Bakersfield, California.

Greenwood Farm Durocs — Moderate prices on bred gilts and weanling boars. Select individuals. Most popular breeding. H. C. Witherow, Mgr., Live Oak, Sutter County, California.

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Big Type Durocs—Better Durocs at right prices. Harvey M. Berglund, Dixon, California.

Winsor Ranch Durocs—The best of stock at reasonable prices. BONITA, CALIFORNIA.

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Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Calac Orchards, Martinez, California.

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Lendorris Ranch Polands — Big type Poland Chinas of all ages for sale. The kind that makes weight quickly. Weanling boars and gilts sired by Lendorris Liberator out of Lendorris Liberty Bond sows. Now ready for delivery. W. L. Haag & Son, Hanford, California.

Big Type Poland China open and bred gilts, young and service boars and young pigs. Your letter expressing your wants will bring a quick reply. California Swine Corporation, H. A. Patten, Manager, Route 2, Box 38, Escalon, California.

Big Boned Poland Chinas—Bred gilts and young boars priced to sell at once. Young stock, either sex, for sale at all times. Bassett Bros., Hanford, California

MISCELLANEOUS

Earn $25 to $30 weekly in spare time selling hosiery direct to consumer from mills, exp. unnecessary. Bristol Hosiery Mills, West Coast Branch, 430 S. Bdwy., Los Angeles.

Avoid Law Suits by having your property lines properly surveyed and established by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

For Sale—Orchard Heaters—5,000 7-gallon "Citrus" Heaters, 500 "Hislop" Heaters. Practically as good as new, having been used but very little. Will sell at bargain prices. Call or write. Charles C. Chapman, Fullerton, California.

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For Sale — Imported Percheron Stallion, good bone, fine action, excellent disposition, easy and safe to handle. Sires satisfactory colts with good dispositions. Several times grand champion. Worth $2500. Will sell for $1500, or consider trade for hay, straw, manure or heifers. J. J. Prendergast, Redlands, California.

GEESE

Some Fine Toulouse Geese, a year old, bred from imported strain. Will sell at $15 a pair or $20 a trio until surplus stock is disposed of. All guaranteed to be in good condition. Write for catalog. Paradise Valley Poultry Ranch, National City.

Geese—Now is the time to order McNeely's Mammoth Geese, $5.00 each, as many as you want. Chas. McNeely, Alpaugh, California.

RABBITS

Pure Bred New Zealand Reds—Improve your stock with a good buck. Prices reasonable. Armstrong's Rabbit Farm, Petaluma, California.

Pedigreed Flemish Giants — No fancy prices. Maud Beeching, 1578 W. 46th St. Los Angeles.

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Guernseys — Grape Wild Farms—Berkshires—Young bulls, from calf age up to 16 months old, of May Rose breeding and out of A. R. cows. Bred sows and gilts, service boars and pigs of both sexes for sale. Grape Wild Farms, Escalon, California. A. B. Humphrey, Proprietor.

Berylwood Stock Farm—Breeders of registered Holstein cattle and Duroc-Jersey swine. Every cow an A. R. O. and T. B. tested. Bulls and females for sale. J. W. Snodgrass, Hueneme, California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1,000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

For Sale—Family and Dairy cows at all times. Guernseys a specialty. Phone Blackwood Ranch, Glendora 345, Glendora, California. A. G. McIntosh.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

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For Sale or Exchange—Shorthorn roan registered bull, 6 years old. Peter Herlick, Helendale, Cal.

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Save Your Roof for 15c a gallon with Asphaltoid. Direct from producer to consumer permits this low price of 15c a gallon. The finest roofing and preservative paint under sun. This is a natural product—why pay more for acid treated asphalt that eats your roof? Mail orders, barrel lots promptly shipped. Equally good for shingle, paper or metal roofs. Woolner Oil Co., 4th and Commonwealth, Los Angeles.

Roofing Paper—
Firsts complete with nails and cement.
1-Ply $1.25; 2-Ply $1.60; 3-Ply $2.20.
Lead & Oil Paint.....$2.20 a gal.
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Prompt Deliveries on Mail Orders.
ANGELUS ROOFING & PAPER CO.
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Phone Bdway 5401. Los Angeles, Calif.

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Rancher and Horticulturist who can organize farm operations, fill executive position or perform any ranch activity required, seeks responsible position. Experienced for entire management. Single, steady, energetic, best of references. Box S, California Cultivator, 112 Market Street, San Francisco, California.

Wanted—Established California concern wants men, with rigs preferred, to represent it. Good pay. Can use local agents working during spare time also. Address J. H. Yetter, 115½ North Broadway, Los Angeles.

Wanted—Walnuts Meats and cull walnuts. We solicit culls for cracking only, paying cash. Fred L. Mitchell & Son, 214 French St., Santa Ana, California. Phone 551-M.

Want to Hear from owner having farm for sale; give particulars and lowest price. John J. Black, 116th Street, Chippewa Falls, Wisconsin.

Farm Wanted — Wanted to hear from owner of a farm for sale. State lowest price. Possession in spring. L. Jones, Box 53, Olney, Illinois.

Good Experienced Dairyman and general farmer wishes to lease dairy farm on share basis. Can give good references. Box E, Cultivator.

Young Married Man, experienced in all lines of farm, dairy and cattle ranch work, wants work of any kind. Jim Fulmer, Wawona, California.

Wanted to Buy—Any kind of dried fruit, honey or walnuts. Mail samples to W. A. Collins Co., Box 397, Santa Ana, California. Phone 71.

We Will Buy your Calla Lily roots. If you have 100 or more, write us. Sevin-Vincent Co., 512 Washington St., San Francisco, California.

Cash Buyers want Western farms. Will deal with owners only. Write R. A. McNown, 370 Wilkinson Bldg., Omaha, Neb.

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Catalogues and Booklets, office forms and correspondence stationery for the nursery, seed and florist trade; half-tone cuts of many standard plants. Correspondence invited. The Kruckeberg Press, 236 Court St., Los Angeles.

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For Sale — Another big drop. Rebuilt windmills, tanks, pumps, cylinders. Why pay more. We make galvanized tanks, 400 gallons, $16.25; 600, $26.25; 1000, $37.25; 2000 capacity, $48.25. New irrigating pipe, 3-in., $13.50; 4-in., $17.50. Demmitt Co., office 120 N. Main, L. A. Phone 15191.

SIMPLE LOGIC

An Irishman was brought before a magistrate on a charge of vagrancy, and questioned. "What trade are you in?"

"Your honor, a sailor."

"You in the seafaring line? I question whether you have been to sea in your life."

"Shure, now, and does your honor think I came over from Ireland in a waggin'?—Blighty (London).

Earl E. Sanders
BREEDER OF
Mammoth Bronze Turkeys
AND
S. C. White Minorcas
Place Your Order Now for
Eggs—Baby Turks—Breeding Stock
Route D, Box 1880, Modesto, Cal.

Winners of The California Egg-Laying Contest 1920

If you are in the poultry business for eggs, investigate this wonderful strain of trapnested White Leghorns. Write for a catalog. It will interest you to know how these hardy, range bred birds have won their reputation.

Bellows Egg Ranch
Lakeside, San Diego Co., Cal.

FOR GREATER EGG PRODUCTION FEED COULSON'S EGG FOOD
FULL PARTICULARS IN OUR FREE BOOK "CHICKENS FROM SHELL TO MARKET"
Coulson Co.
PETALUMA, CAL.

AMALIE
1-2-3
NON CARBON
MOTOR OIL
100% PURE PENNSYLVANIA

STOP EXPERIMENTING

Use Amalie Oil. It will make your motor run like you want it to.

The Best Costs Less

All Weights—One Price

L. SONNEBORN SONS, Inc.
BROADWAY 637
LOS ANGELES, CAL.

This Log Saw
$99.50 F. O. B. K. C.
A dependable fast cutting Log Saw at the right price. Powerful 4-cycle engine with two fly-wheels gives steady power, sawing logs or trees, or for belt work. Lever Control.
Change it Free
At Pittsburgh $6 More.
CUTS 'EM UP
TREE SAW FREE
For a short time only we will include the WITTE Tree Saw Equipment FREE with each Log Saw. Write for Catalog.
One Man Cut 50 Trees in 5 Hours
WITTE ENGINE WORKS
3104 Oakland Ave., - Kansas City, Mo.
3104 Empire Bldg., - Pittsburgh, Pa.

Cooperative Pioneers

By Cornele G. Ross, Chairman Executive Committee, Poultry Producers of Southern California

CALIFORNIA poultry producers have been priding themselves that they were the first to recognize the necessity for cooperative effort in marketing their products and to successfully work together for the good of the industry in which they are engaged. A recent issue of the New York Produce Review gave some late data regarding the poultry industry in Denmark, and the writer has thought it would be interesting to our members to know that we were only backward followers of what that industrious nation has long been enjoying in this respect. In comparing the figures which are here given it should be remembered that the area of Denmark is only about one-tenth of that of California, while their total population is very little, if any, in excess of that of our own state.

The Danish farmers began cooperating about 1886, and the movement has grown until it is practically universal, both for selling and buying, to say nothing of a savings and credit system of a similar nature. The growth of the poultry industry may be indicated by the census returns, which were first recorded for 1888, at which time there were 4,592,000 head of poultry in the country; in 1914 this had increased to 15,140,000, but decreased slightly during the World War because of the embargo on cereals and foodstuffs, much of which had to be imported; but in 1920 it had again risen to 13,997,000 head.

Poultry seems to be almost universally kept among the people in Denmark. Clerks, federal employes and others keep small flocks in addition to those kept by every farmer, and there are numerous cooperative groups which apparently affiliate and work together for the export of their product which amounts to upwards of 65 per cent of the entire output. Their cooperative export organization was formed in 1895 and is known as Dansk Andels-Aegexport, or the Danish Cooperative Egg Export. A few exports are also made by private firms and the great bulk of all the exports go to England.

In 1914 the Danish supplied England with 20 per cent of their imported eggs, amounting to 37,269,670 dozen, this being about 95 per cent of all the Danish export of eggs. Since the war, however, a little larger percentage of the Danish exports are going to other countries and in 1920 their total export amounted to about 45,000,000 dozens of eggs.

This business has been built up entirely by a consistent effort during the past 25 years to raise the quality of the Danish product until at the present time their eggs command top figures. Their cooperative societies require that every producer stamp every egg with his number, while each assembling station also stamps its number on the egg, thus making it nearly possible to trace an egg "from the English breakfast table to the hen which laid it." In addition to this their grading requirements are no doubt higher than anywhere else in the world, the eggs being sorted by size and weight into six and sometimes seven grades, according to the weight per "great hundred," or 120 eggs, and are known as 13, 14, 15, 16, 17 and 18-pound, and sometimes 20-pound. Their 16-pound grade would be about the same as our Extras, while their 18-pound grade would run nearly 29 ounces to the dozen; so our members can see what will happen to our present grading (which some have considered too strict), should we be forced to compete with the better grades of Danish eggs in foreign markets.

A comparison of the London market quotations on eggs will give some idea of the standing of the Danish product, and it might be remarked in passing that this quotation was for September 12, and the trade paper printing the quotation stated that the "prices on Danish eggs had slumped the week previous and the market had not recovered;" so we may take it that ordinarily their eggs would have been quoted still nearer the top figures.

London Egg Market Sept. 12, 1921

English, moderate request, 55.5c to 59.5c per doz.; Irish, 42.8c to 52.1c; Dutch, firm for whites, 53.9c to 59.5c; Danish, 18-lb., 46.5c to 50.2c; Danish, 17-lb., 44.6c to 46.5c; Danish, 16-lb., 42.8c to 48.4c; California, fair demand, 44.6c; American, fresh, 48.4c; American, stored, 46.5c; Chinese, 29.8c to 35.4c.

The Danish eggs are gathered by special collectors who pack them in large cases and deliver to the nearest packing house, of which there are a considerable number scattered throughout the country. At the packing houses the eggs are sorted as to size and weight, and placed in trays holding 120 eggs each. These trays are then placed, one by one, over a deep box which has the sides slanting towards the center, where a strong group of electric bulbs are placed; these slanting sides are covered with mirrors, or polished metal plates which reflect the light upwards through the tray of eggs. These candlers are placed in dark rooms and the reflected light enables the operator to detect and remove all off-grade eggs of whatever character. In some cases these candling benches are fitted with mirrors of the same size as the egg tray, placed at the proper angle directly in front of the face, so that the operator can work by reflected vision instead of having to look down at the tray itself. After being graded and candled the eggs are packed for shipment in strong pine cases, fitted with double partitions to give extra strength; a layer of dry straw is placed on the bottom, then a layer of wood fiber and a layer of eggs on this, then another layer of wood fiber, again a layer of eggs, and so on until four layers of eggs have been packed. These cases usually contain 1,440 eggs.

Instead of cold storing their eggs during the flush laying season, the Danish operators place them in large cement basins filled with a preservative. Prior to this, however, they have been very carefully sounded and candled, and when they are again taken from the preserving basins to be packed for export the same care is taken in handling them as described above in the case of fresh eggs. These preserved eggs are only exported in cases marked "pickled eggs."

The Danes have a country-wide breeding organization known as Denmark's Poultry Breeders Union, while the Mutual Board of Poultry Breeders, formed by representatives appointed by the large agricultural organizations of the country, hold annual competitions between the whole flocks of the well conducted poultry farms. From the farms which have received the annual awards large numbers of hatching eggs are annually sent to other farms, and in this way the grade of poultry is constantly becoming better, the state considering the matter so important that a considerable subsidy is granted for this purpose.

They also have a special poulry adviser and a special poultry clinic at the royal veterinary and agricultural college, as well as an experiment station for feeding and breeding experiments at the agricultural research laboratory of the college.

Poultry Queries

(Conducted by Jean A. Koethen.)

Mysterious Swelling

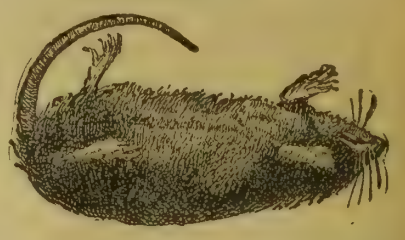
Some of my hens have died from the effects of a large swelling which appears at the lower end of the craw and finally bursts. They have access to a stack of barley hay and wheat straw. Could it be a barley beard working through?—Subscriber, Fresno.

From your description I conclude that the swelling was of the character of a boil which always comes, doctors say, from infection. It hardly seems possible that a barley beard could work its way through perfectly sound skin, but a beard or some other external object might have gotten into a

WIPE OUT EVERY RAT AND GOPHER

Amazing New Discovery Quickly Gets Every One. Not a Poison

Don't be satisfied with trapping or poisoning just a few. Exterminate the whole bunch—old, young, big and little. Rats do millions of dollars' damage each year. They kill chickens, destroy grain, damage buildings, merchandise, and are filthy disease carriers.



A wonderful new scientific discovery called Imperial Virus now enables you to clear your place of every rat on it. The amazing feature of it is that it is not a poison and affected rodents such as Rats, Mice, Gophers, Prairie Dogs, Ground Squirrels, etc., only. It is perfectly harmless to humans, stock, poultry, pets. It can, therefore, be spread anywhere knowing it will kill only the pests you want to get. One rat affects the others and in a short time the whole colony is exterminated, root and branch. They die outside, too, hunting air and water.

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The manufacturers of this amazing Virus, to get it quickly established and widely used, are making a Special Guaranteed Introductory Offer of two regular, big, full sized (double strength) $1.00 bottles, for the price of one. Use one yourself and sell the other to a neighbor, thus getting yours free. They will also tell you how you can make money telling your friends about it. As this offer may not appear again, you should act at once or clip for future reference.

You need send no money; just your name and address to the Imperial Laboratories, Room 215, 2110 Grand Avenue, Kansas City, Mo., and pay the postman $1.00 and a few cents postage, when the two bottles arrive. It costs you nothing if it does not do the work, as they positively guarantee to refund your $1.00 any time after 30 days if you are not satisfied.

Easy Now to Get Rid of Lice and Mites

Startling New Discovery Eliminates These Pests Without Dusting, Spraying or Dipping

Any poultry raiser can easily and quickly clean out Lice and Mites by using a new Remedy recently discovered by a Kansas City Chemist and called Imperial Lice & Mite Remedy.

All that is necessary is to occasionally put a few drops of this amazing remedy in the fowl's drinking water. It renders them immune from the attack of all blood-sucking parasites, as these pests positively will not stay on a fowl taking this remedy.

It also acts as a splendid Tonic and Blood Purifier, as well as increasing egg production and growth, for with these pests eliminated, hens lay better and young stock grows faster. It is positively guaranteed not to affect the meat or eggs.

The manufacturers of this wonderful remedy are anxious to get it quickly introduced among poultry raisers everywhere, and make this Special Introductory Offer: Send no money, just your name and address to the Imperial Laboratories, Room 522, 2110 Grand Ave., Kansas City, Mo., and they will send you a regular full sized $1.00 bottle and will also send you free a big, full sized (double strength) $1.00 package of Imperial Egg Tonic, the guaranteed egg producer. Pay the postman only $1.00 and a few cents postage when both packages are delivered. If, after 30 days' trial you are not satisfied with results just say so and your money will be cheerfully refunded.

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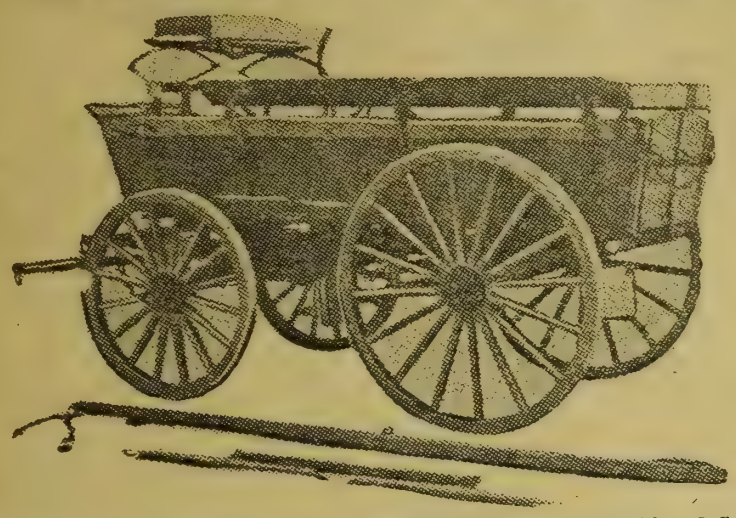
break in the skin from other cause and caused irritation and ultimately an abcess. I think you will find if you have other cases that the abcess has its beginning in an injury of some sort.

Alfalfa Hay for Greens

Will alfalfa hay cut to ¼ inch length and then steamed answer for greens during the winter months? Can I have it before the hens all day mixed with bran? I am using it in this way and the hens relish it—Subscriber, Winnemucca, Nevada.

Yes, hens like alfalfa hay and it is good for them, but I see nothing gained by steaming it or mixing it with bran, and whatever you do, it does not take the place of green feed, though it may help a little to make up for its absence. If you throw the hay in to them dry or keep it before them in a rack they will like it just as well and it will serve the same purpose in supplying protein and giving a good yellow color to the yolk of the egg, but it is not a succulent green, and you will need cut barley or kale or some green of that sort besides. California poultrymen place their main dependence during the winter on barley which grows quickly and is easily run through a clover cutter.

U. S. ARMY WAGONS



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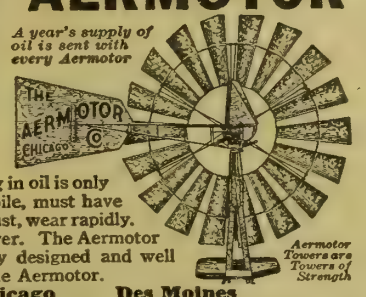

Oil an Aermotor once a year and it is always oiled. Every moving part is completely and fully oiled. A constant stream of oil flows on every bearing. The shafts run in oil. The double gears run in oil in a tightly enclosed gear case. Friction and wear are practically eliminated.

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Turkey Problems Again

Mrs. S. M. L. of Arroyo Grande writes: "We all enjoy the Cultivator very much and I have received many helpful suggestions from its pages. I am trying to raise turkeys in a small way and have had fine luck till lately by following the advice given in the Cultivator. The past week I have lost two. On examining dead birds I found a lark colored liquid filling the body; liver very dark with light spots. I gave the sick birds liver pills and tried the ipecac treatment on the second. I feed only chopped egg, onion, cottage cheese and dry bread or rolled oats or wheat the first ten weeks, changing after that to Suregrow in place of the cereal and later to Surelay, but mixing it always with cottage cheese and onions. Some of my birds weigh 14 pounds at 4 months. Isn't that a pretty good weight? I fed three times a day till recently when I cut down to twice. Is twice a day sufficient for birds running loose? How many turkeys should I keep in order to raise 100 birds next year?"

Your feeding is good, but unnecessarily complex. After the first two months some of the most successful turkey people keep bran and rolled barley before their birds and let them eat what they will. I tried this plan this year and found the birds did just as well as when I chopped and mixed an elaborate ration for them. The first two months are the critical time. Probably it is because you overfed a little those first months that you lost the two that developed blackhead. Nobody has yet learned absolutely how to avoid overfeeding because the condition of the bird has to be taken into account. One turkey grower cuts the ration in half if his little birds seem chilly when they come in for supper. Another feels the crops of her poults and takes them away from the feed when they are full enough. I think you will need at least half a dozen breeders in order to rear 100 poults, and possibly more than that. If every egg laid was fertile, and every poult hatched lived to grow up you might manage with two, but we all know what loss there is between the egg in the nest and the full grown turkey. Fourteen pounds at 4 months is very good.

White Orpingtons

Can you give me the address of the parties who took prizes on White Orpingtons at the San Fernando Show? I have been trying for a year to find someone who had this breed.—Subscriber, Orange.

My list of awards at San Fernando contains no mention of White Orpingtons. If you are certain they were there you might learn the address of the exhibitor by writing E. I. Hammond, Riverside, who was in charge of both the San Fernando and the Riverside shows. At Riverside there were a few Buffs but no Whites, and they have been conspicuous for their absence for several years. I am mailing you the address of a man who used to breed them and may be able to tell you who has them.

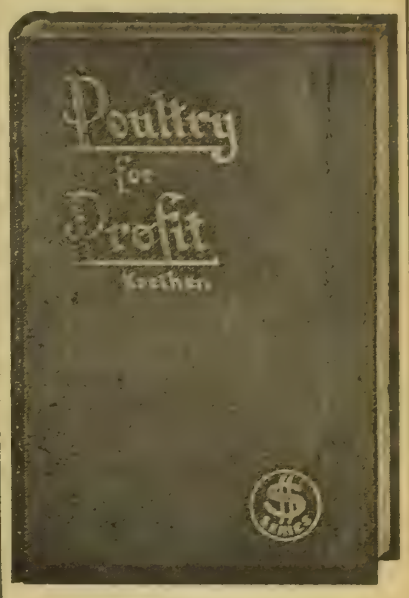
Fresh Meat or Dried?

Are fresh meat scraps from a retail butcher shop at 3½ cents per pound as valuable as commercial beef scrap at the same price?—Subscriber, Winnemucca, Nevada.

Green cut bone, as it is called, is an excellent addition to the regular dry mash of ground grains and beef scrap. You could use it once a week to great advantage, but I doubt if in the end the green bone alone is as economical as the dried meat scrap. For one thing it is impossible to know that every bird gets its share and that all have had the proportion of meat in their ration. In the second place green bone must be eaten immediately or it will become unfit for food. In the third place meat from retail butcher shops is not always fresh when you buy it. If your flock is small and you can conveniently give them green cut bone twice a week, all they will clean up in 15 or 20 minutes, you may find the green bone just as satisfactory. It is worth trying, anyway. Only be sure it is sweet and fresh or it may kill them all.

(Continued on Page 459.)

Poultry Can Be Made Profitable



Making use of information gathered from experienced poultry writers who have been guided by their practical experiences will always result in profit from poultry.

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"Poultry for Profit"

By Jean A. Koethen

TELLS YOU HOW
To Successfully House, Feed and Raise Chickens, Ducks and Turkeys in California

This book is 5½x8 inches and contains 12 chapters, with over 225 pages of text and 18 pages of illustrations, printed on egg-shell book, binding full cloth vellum de luxe.

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Price $1.00 Postpaid

The Cultivator Publishing Company
115½ N. Broadway,
Los Angeles, Cal.

Los Angeles Markets

Los Angeles, October 26, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price 51 cents.

CHEESE

Brokers prices:
California flats, 23@25.

EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 67, case count, 57; pullets, 48; pewee pullets, 31.

Extras last week:

Oct.	12	13	14	15	17	18
'21	59	60	..	63	64	66

POULTRY

Price to producers: Hens, 27; colored, 32; broilers, 40; roasters, 28; old roosters, 16; fryers, 30; ducks, old, 12; ducklings, Pekin, 3½ up, 25; others, 25; geese, 25; turkeys, live, young tom, 40; dr., 45; old, live, 35; dr., 40; hens, live, 35; dr., 40; squabs, 45@47.

Belgian hares, 12@17; old, 8.

LIVESTOCK

Los Angeles, Oct. 25.—Weighed and delivered off cars without food or water: Hogs (hard grain fed), 125 to 175 lbs., 9.00; 175 to 225 lbs., 9.50.

Cattle (on foot, gross weight): Steers, good, 6.50; medium, 6.00; cows, good, 5.00; medium, 4.50; bulls and stags, 3.00; calves, 125 to 150 lbs., 8.00; 175 to 225 lbs., 7.00.

Sheep: Ewes, 3.50@4.00; lambs, 7.00@7.50.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, October 25, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.

Potatoes: Demand and movement moderate, market steady. Lugs mostly 1.00@1.25. Stocktons: Burbanks, per cwt., best, 2.75@3.00; poorer, 2.25@2.60; special brands, 3.25. Idahos: Russets, 3.00; rurals, 2.50@2.60 per cwt. Sweet potatoes: Supplies moderate, movement slow, market steady. Locals: No. 1, 75@90; No. 2, 50@60 per lug.

Onions: Supplies moderate, movement limited, market firm. Locals: Spanish, per cwt., 3.75@4.00; per lug, 1.15@1.25. Stocktons: Per cwt.: White Globes, 4.00@4.50; Yellows 4.00@4.50. Per lug: Whites, 1.40@1.50; Browns, 1.50.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock, October 25, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Supplies moderate, demand moderate, market weaker. Per lb.: Kentucky Wonder, 5@7; Greenpod, 5; Limas, 7@8.

Bunch vegetables: Per dozen bunches: Beets, 45; carrots and turnips, 30@40; radishes and parsley, 15; green onions, 10@15; spinach, 25; leeks, 15@20.

Cabbage Supplies liberal. Per field crate, mostly 2.00.

Cauliflower: Supplies liberal, market weak, 1.50@1.75, poorer 1.25.

Celery: Supplies moderate, movement moderate, market weaker. Per crate $3.25@3.75.

Cucumbers: Supplies moderate, movement good, market firm. Local, lug, 85@1.00.

Lettuce: Supplies liberal, movement moderate, market steady. Mostly leafy stock. Locals: Field crates, best, 60@75; poorer, 40@50.

Peas: Supplies light, market firm, mostly 7@10; fy. Telephone, 12@13.

Peppers: Supplies liberal, market firm on bells. Locals: Bells, green, per lug 60@70; Red Pimientos, 60@70; Chilis, 35@40 per lug.

Pumpkins: Supplies liberal, market steady, 1@1½ lb.

Squash: Supplies moderate, market steady, summer mostly 30@40 lug; Hubbard, 1½ lb.

Tomatoes: Supplies light, demand and movement good, market stronger. Locals: No. 1, per lug; Pinks and Ripes, Mostly 1.75@2.25; poorer, 1.25@1.50.

FRESH FRUITS

Apples: Supplies very heavy. Demand and movement slow, market weak. Locals: Windfalls, 1¾@2, fair quality, various varieties 3@4 lb, few best Delicious and Jonathans Yucaipa section 5@6 lb. Watsonville: Fancy 4 tier Bellefleurs, 1.35@1.50, mostly 1.35@1.40; poorer, 1.25, 4½ tier 1.15@1.25, B grade 4 tier 1.00@1.10. Utahs: Jonathans 5@6 lb. Washingtons: Jonathans extra fancy medium sizes 2.90@3.00, medium sizes fancy 2.75@2.85, small fancy 2.50, jumble pack 5@5½ lb. Oregons: Spitzenburgs extra fancy medium sizes 2.75@2.90. small fancy 2.50.

Cranberries: Supplies limited, market steady. Early Blacks, 17.00 bbl.; one-third bbl. 4.50@4.75.

Avocados: 3.00@6.00 doz.

Feijoa: Lb., 11@12.

Figs: Supplies light, demand moderate, market steady. Locals: Per box, 75@1.25.

Grapes: Supplies liberal, demand moderate, market steady. Per lb.: Muscats and Malagas, 5@6; Cornichons, 5@7; Tokays, 7@9. Per ton: Black wine grapes, 120.00@140.00; white wine grapes, 75.00@100.00.

Melons: Honeydews, small crates, 75; per lb., 1@1¼; few best high as 2; Casabas, 1@1½ lb. Watermelons, ½@¾; Persian melons, 1½@2.

Peaches: Clings, 6@6½ per lb.

Pears: Demand and movement slow, market weak. Bartletts mostly 4@5; few 6; poorer. 3@3½ per lb.

Persimmons: Lb., 10@15.

Pomegranates: Supplies moderate, lb., 5@8.

Quinces: Bx., 85@1.00.

CITRUS FRUITS

Grapefruit: Supplies moderate, movement moderate, market firm. Local market pack mostly 3.50@4.00; small, 2.50@3.00; special packed, 4.00@5.00; Arizonas, 4.75@5.50.

Lemons: Supplies liberal. Demand moderate, market weak. Locals: special pack mostly 5.00@5.25; market pack, best, 3.50@4.00; poorer, 3.00@3.25; loose box, 1.75@2.50; lugs, 75@1.00.

Oranges: Supplies light, demand good, market firm. Special brands mostly 6.25; market pack, 4.00@4.50; small sizes, 3.00@3.50; loose boxes, 75@1.00, mostly 1.00@1.25.

HONEY

The honey market has been very quiet during the past two weeks. Demand is falling off sharply, but prices remain firm account light California crop and limited supplies light colored honeys on hand. Supplies of amber grades fairly liberal. The lower grades of honey enter into competition with sugar to some extent, but higher grades sell strictly on their own merits as honey. Carloads f. o. b. usual terms at loading points: Per lb.: White Orange Blossom, dealers holding for 12@12½; White Sage, 11@12; Light Amber Sage, 7½@8½; old crop White Sage, 10½; Light Amber Alfalfa, 6½. Hawaiian Amber offered at 4½.

Beeswax: Practically no demand or movement. No sales reported.

NUTS

Cal. Walnut Growers Assoc.:
Opening prices to wholesalers:

No. 1 Softshell	27
No. 2 Softshell	20
Standard Budded	31

GRAIN AND FEEDS

Grain Exch. price bid Oct. 18:
Barley: 100 ton lots, Dec. del. 1.26.
Milo: 100 ton lots, Dec. del. 1.45.

HAY

Alfalfa Growers of California report:

Free movement to central markets. Stocks in hands of dealers depleted. At directors' meeting Thursday rough estimates show marketing hay available till May 1 less than anticipated, as result of unfavorable weather and low prices. In many sections the odds this summer were so much against the growers that they had no other choice but to cut down their production. This is a serious matter for growers and also for users and dealers, and reduction in milk, cream, etc., production resulting will be serious for consumers. There is only one way in which this danger can be avoided, and that is by giving growers the assurance of reasonable prices for their hay during the growing season.

There were 1,330 tons of grain and alfalfa hay received on the Los Angeles tracks the week ending October 22, with 310 tons held over.

Prevailing prices last week, delivered in the vicinity of Los Angeles:

No. 1 Dairy Alfalfa	22.00
Standard Alfalfa	17.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay

Tame Oats	20.00@26.00
Barley	16.00@24.00
Alfalfa, Rabbit	24.00@28.00
Alfalfa, No. 1 Dairy	19.00@21.00
Standard	16.00@18.00
Straw	12.00

The American Legion and California National Guard will celebrate Armistice Day, November 11, with parade, flag raising, field meet, etc., at Los Angeles.

San Francisco Markets

San Francisco., October 25, 1921.

BUTTER

Extras	50
Prime Firsts	47½

CHEESE

Dairy Exchange quotations:

Cal. Flats	26
Cal. Y. A.	26½

EGGS

Dairy Exchange quotations:

Extra	69
Extra Firsts	67
Extra Pullets	50
Pullets, Firsts	47½

POULTRY

Wholesale prices are:

Poultry: Young chickens, Leghorns, 1 to 1¼ lbs., 48@50 per lb.; above 1¼ lbs., 34@36 per lb.; heavy breeds, 30@32 per lb.; staggy roosters, 20@25 per lb.; old roosters, Leghorns, 16 per lb.; heavy breeds, 18 per lb.; hens, Leghorns, large, 25@28 per lb.; small to medium, 25 per lb.; heavy breeds, 30@33 per lb.

Ducks: 21@23 per lb.

Geese: 30@33 per lb.

Turkeys: Live, old, 35 per lb.; spring, 40 per lb.; extra large, 42 per lb.; do, dressed, 50.

Squabs: Fancy, 50; do, common, per dozen, 3.50; old pigeons, 3.50 per dozen.

Belgian hares: Live, 16@18 per lb.; do, dressed, 25@28 per lb.

LIVESTOCK

Western Meat Co. quotes:

Weighed off cars at our yards in South San Francisco:

Cattle—No. 1, steers, 5½@6; do, second quality, 4¼@5¼; cows and heifers, No. 1 quality, 4¼@4¾; do, second quality, 3½@4¼; bulls and stags, 2½@3.

Calves: Light weight, 7@8; heavy, 5½@6.

Sheep: Wethers, 3½@4; ewes, 2½@3.

Lambs—6@6½.

Hogs—Hard, fat, grain-fed, weighing 125 to 200 lbs., 10; 200 to 250 lbs., 9; 250 to 300 lbs., 8; light sows, 8; heavy, 7.

California Farm Bureau Marketing Association reports:

No. Hogs	Ave. Wt.	Dock	Price
Turlock, October 18			
56	185	...	$9.75
1	370	148	9.50
4	138	...	9.25
43	244	...	8.25
2	465	30	7.00

One and one-half cars, 28 consignors, $2,017.40.

Madera, October 20			
44	159	...	9.80
33	184	...	9.80
27	140	...	9.50
18	188	...	9.30
4	227	...	9.00

One car, 8 consignors, $2,055.96.

Fresno, October 21			
44	183	...	9.95
2	120	...	8.95
15	279	...	8.45
3	317	50	7.45

One car, 8 consignors, $1,245.54.

Total for the week, 3½ cars, 44 consignors, $5,318.90.

These prices are f. o. b. shipping point to the farmer, while the prices quoted by

Gill
One-piece Piston Rings
reduce oil consumption

Because: they don't permit oil to enter the combustion chamber where it will be burned up without accomplishing *anything*. They keep oil down in the crank case and on the cylinder walls where it belongs. And at the same time Gill Piston Rings hold *all* of the gas in the firing chamber. None of it escapes past them. None of it condenses, and works down into the crank case where it thins the lubricating oil and makes it worse than useless. Gill Rings prevent that.

THE GILL MANUFACTURING COMPANY,
8300 South Chicago Ave., Chicago, Ill.

Time alone is the great tester

As the sands run through the glass of life the things that are real abide while the the unworthy pass away.

Since Byron Jackson produced the first pump that virtually gave birth to irrigation in the west pumps of many names have come and gone. Time, however, has only served to better establish Byron Jackson products.

Buyers of Byron Jackson deep well turbines make an investment that is founded on this enduring past.

Let us furnish you the name of a neighbor who is a Byron Jackson user.

BYRON JACKSON IRON WORKS-INC

Wherever water is to be lifted

408 Sharon Building
SAN FRANCISCO

Are You Using
GOPHER-SCENT?

The new method of killing gophers and squirrels. It is the one and only preparation that carries the scent and taste that gophers and squirrels like and which positively attracts and exterminates them. GOPHER-SCENT has met with instant success wherever sold. Packages 50 cents up. If your dealer doesn't handle GOPHER-SCENT, notify us and we will supply him.

C. G. WOODS CHEMICAL CO.
GLENDALE, CAL.

Sold in Los Angeles by Aggeler and Musser Seed Co., and throughout other sections of California by hardware, feed and seed stores.

THE FRESNO NURSERY CO. INC. TRADE MARK RELIABILITY QUALITY SERVICE FROM THE ROOTS UP

Headquarters for
FRUIT TREES

Our trees are grown under most favorable conditions in the choicest spots in California.

Let us know your requirements early.

Fresno Nursery Co.
Fresno, California

BEST SOIL BACTERIA---$1.00 Acre

Delivered Fresh From Laboratories—With Service

PENNEWELL'S..... 1,383,000,000 Count to Acre
"WESTROBAC"..... 907,200,000 " " "
(TESTS MADE BY BERKELEY SCIENTISTS)

C. Lincoln Bennett—Bacteria Merchant
507 W. 5th Street—Tel. 1282-R SANTA ANA, CAL.

Flowering Bulbs **Flowering Bulbs**

Hyacinths, Narcissus, Jonquils, Daffodils, Tulips, Spanish and Dutch Iris, Oxalis, Ixias, Sparaxis, Freesias, Amaryllis, Watsonias, Ranunculas for winter and spring flowers. Ask for Bulb Catalog. Mailed on request.

Headquarters for California Wild Flower Seeds

Theodore Payné, 345 South Main St., Los Angeles

the newspapers are off cars at their packing houses.

POTATOES AND ONIONS

Street prices:

Potatoes: Street prices: River, 2.50@2.75; second grade, 2.00@2.25; Oregon Burbanks, 2.65@2.75; Salinas. 3.50@3.75; netted gems, 2.75@3.00. Sweets, 3@3½ per lb.

Onions: New crop Yellow, 3.25; Brown, 3.75@4.00; Green, 1.50@2.00 per box.

Garlic: 3@5 per lb.

VEGETABLES

Wholesale selling price:

Artichokes: 9.00@11.00 case.

Beans: String, 3@5 lb.; Lima, 3@5. fy. 9@10; Wax, 4@5.

Brussel Sprouts: 6½@8 per lb

Carrots: Sk., 1.00.

Celery: 2.00@3.50 cr., bunch 25@35; bleached 4.00@4.50 cr.

Corn: Alameda, 2.00@3.00 sack; 2.00@2.75 cr.

Cucumbers: Lug, 50@75; hothouse 1.00@1.25; Yellow, 50@65.

Eggplant: 1.00@1.25 lug.

Lettuce: Crate, 75@1.00.

Okra: 1.00@1.50 per box of about 10 lbs.

Peas: 5@10 lb.; fy., 12½.

Peppers: Bells, 3@4 lb.; 50@75 lug; Chili, 3@5.

Pumpkins: 1.00@1.25 sk.; lb., 3. Crookneck, 4.

Spinach: 4 per lb.

Tomatoes: 1.00@1.25; some 1.50@1.75.

FRESH FRUITS

Bellflower, 3½ and 4 tier, 1.50@1.65; 4½ tier, 1.15@1.25; B grade, 1.10@1.25; Oregon Jonathans, 3½ and 4 tier, 2.25@2.50; 4½ tier, 1.75@2.00; Rhode Island Greenings, 3½ and 4 tier, 1.50@1.75; 4½ tier, 1.00@1.25; Banana, 3½ tier, 2.25@2.50; 4 tier, 2.00@2.25; 4½ tier, 1.50@1.75; Red Cheep Pippins, 3½ tier, 1.60@1.75; 4 tier, 1.40@1.60; 4½ tier, 1.10@1.25; Jonathans, 3½ and 5 tier, 2.25; 4½ tier, 1.50@1.75; B grade, 1.50@1.75; Kings, 3½ and 4 tier, 2.00@2.25; 4½ tier, 1.50 @1.75; B grade, 1.25@1.50; Yellow Newtown Pippins, 3½ and 4 tier, 2.00@2.25; 4½ tier, 1.75; B grade, 1.50; Spitzenburg, 3½ and 4 tier, 2.25@2.50; 4½ tier, 2.00; Oregon Spitzenburg, 3½ and 4 tier, 2.25@2.75; 4½ tier, 1.75@2.25; Delicious, and Winter Banana, 3.50.

Avocados: California, doz., large, 3.00@5.00; small, 1.00@2.00; Fla., 3.00@5.00.

Bananas: Eastern, 6@7; Hawaiian, 7@8.

Chestnuts: 18@25 per lb.

Cranberries: Bx., 4.50@5.50; Cope Cod, 15.00@16.00 bbl.

Figs: Black, double layer, 1.25@1.50; single layer, 75@1.25; do, white, single, 75@1.00.

Grapes: Per crate: Seedless, 1.50@2.00; Tokay, 75@1.25; Black, 75@1.50; Malaga, 75@1.50; Seedless, 2.00@3.00; Black, 1.75@2.50; Tokay, 1.50@2.00; Muscat, 1.75@2.50 per lug; Isabella, 2.50@2.75. Wine grapes, black, 120.00@140.00; do white, 65.00@100.00 per ton

Huckleberries: 8@11 lb.; fy., 15@18.

Melons: Persian, 1.00@1.25 per small cr., 1.50 large; Honeydew, 1.00@1.25 per standard crate; Casabas, 50@75 per dozen. Watermelons, 1.00@2.50 doz.

Olives: Large, 8; small, 5.

Persimmons: 2.50@3.00 bx.

Pineapples: 4.00@4.50 dozen.

Pomegranates: 2.00@3.00.

Quinces: 1.25@1.50 lug.

Raspberries: 75@1.00.

Strawberries: Cr., 1.25@2.50; dr., 75@1.50.

Watermelons: 1.00@2.50 doz.

CITRUS FRUITS

Oranges: Valencias, 4.00@6.50 box. Lemons: Fancy, 5.00@6.25 box; do, choice, 4.50@5.00 per box. Lemonettes: Choice, 2.00@2.50; fancy, 2.50@3.50 per box. Grapefruit: Choice, 4.00@4.50; fancy, 5.00@5.50. Limes, Mexican, 2.50 bx.

BEANS

Below California Bean Growers Association shippers prices choice recleaned

Large Whites	5.00
Small Whites	4.80
Pinks	4.80
Mexican Reds	4.90
Red Kidney	7.10
Henderson Bush	5.20
Cranberries	5.60
Bayos	5.15
Blackeyes	3.65

HAY AND FEED

Alfalfa Growers of California, Inc. report:

Prevailing prices last week f. o. b. San Francisco:

Choice Dairy Alfalfa	16.00
Standard	15.00

A. W. Scott Co. says:

Receipts past week 521 tons as compared with 1,399 tons of the previous week. The dropping off is mainly due to reduction of water shipments. Interior markets have been active and considerable quantities have moved from one section to another. Large stocks are reported in every storing center. Alfalfa continues moving actively and the dry weather has been of greater benefit to those able to harvest and market later cuttings. Nevada alfalfa will probably be coming into the markets in the near future as a large amount has been purchased by California dealers during the last week and shipment will soon be directed to California consuming points.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the markets in San Francisco (for prices to consumers, charges of switching, cartage, commission and handling expenses must be added, according to conditions).

Wheat Hay No. 1	16.00@18.00
Wheat Hay, fair grade	13.00@16.00
Tame Oat Hay	13.00@16.00
Wild Oat Hay	10.00@12.00
Alfalfa Hay	12.00@15.00
Stock Hay	8.00@10.00
Straw	10.00@12.00
Rolled Barley	29.00@30.00
Ground Barley	31.00@33.00
Oats, Rolled Feed	34.00@36.00
Bran and Millrun	24.00@27.00
Middlings	40.00@44.00
Coconut Meal	22.00@25.00
Alfalfa Meal	21.00@23.00
Cottonseed Meal	38.00@40.00
Sugar Beet Pulp	29.00@30.00
Molasses Tanks	21.00 Barr. 25.00
Milo Maize, Corn Meal and Cracked Corn	38.00@41.00
Scratch Feed	44.00@46.00

GRAIN

Sales on Grain Exchange:

Wheat: Milling, 1.90@1.95.

Barley: Feed, 1.20@1.25; shipping, 1.27½ @1.35.

Oats: Red Feed, 1.40@1.60; Seed. 1.65 @2.00.

Corn: California yellow, 1.45@1.50; eastern yellow No. 2, 1.40@1.42; No. 3, 1.36@1.38; White Egyptian, 1.67½@1.70; California red milo, 1.65@1.70. milo, 1.65@1.70.

Citrus Markets

Shipments

Shipments of citrus fruits to date since November 1, 1920, Southern California: Oranges, 40,904 cars; lemons, 11,445; total, 52,349. To same date last season: Oranges, 29,894; lemons, 8,515; total, 38,409. From Central California to date this season: Oranges, 6,658; lemons, 212; total, 6,870. To same date last season: Oranges, 5,383; lemons, 288; total, 5,671. From Northern California to date this season: Oranges, 305; lemons, 5; total, 310. To same date last season: Oranges, 261, lemons, 23; total, 284.

POULT QUERIES

(Continued from Page 457.)

Mites and Sticktights

How shall I get rid of mites and sticktight fleas on my chickens?—Subscriber, Loma Linda.

The sticktights are easily killed by anointing head and wattles with carbolated vaseline. You may have to use the vaseline several times but it will certainly kill them all in the end. Mites are not so easily eliminated. The house should be thoroughly cleaned and then every inch of the inside, including roosts and droppingsboards, painted with kerosene and crude carbolic acid, 1 part carbolic acid to from 5 to 10 of kerosene. The stronger the solution the more certain is it to kill everything it touches. If there are many mites on the bodies of the birds they are most easily killed by a thorough greasing with lard. If the weather is cold dusting with buhach powder is less trying to the birds and will probably destroy the vermin.

VETERINARY QUERIES

(Continued from Page 447.)

gist to put up the following medicine for you: One ounce aloin, eight ounces turpentine and enough raw linseed oil to make two quarts. Mix well and divide into eight doses and give each cow one dose once a day. Then get four ounces of salicylate of soda and divide it into 32 doses. Give one dose in a little feed once a day.

CROP CONDITIONS IN WESTERN CANADA

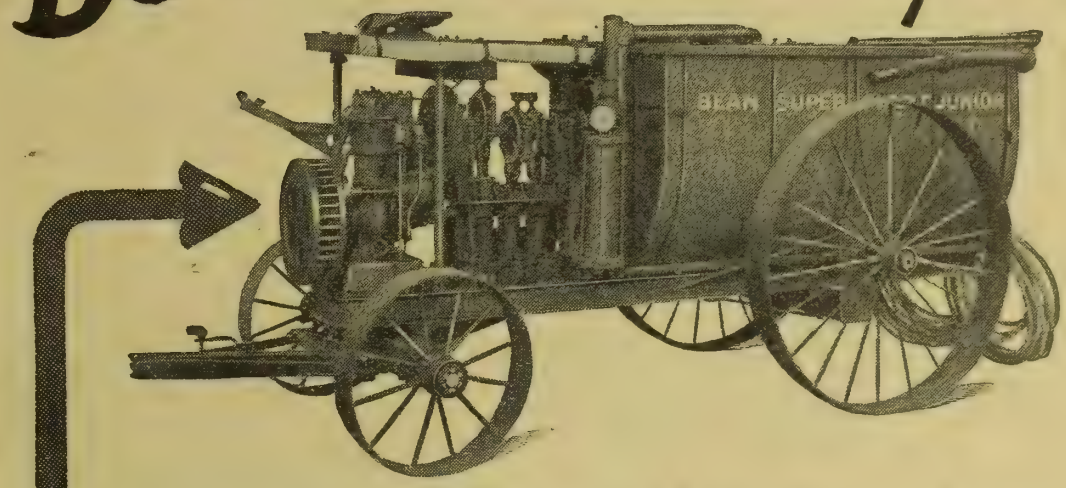
Upon his return from a 6,000 mile trip through the grain growing sections of Manitoba, Saskatchewan and Alberta, Robert J. C. Stead, director of publicity of the Canadian department of immigration and colonization, reports a somewhat mixed crop condition, varying from very light to very heavy. The lighter districts in all three provinces are in the south, bordering on the American boundary and extending northwards for varying distances. Throughout these districts the rainfall has been somewhat light and wheat crops in many sections will not average more than ten bushels to the acre. An interesting development, however, is the growing of corn in which great headway has been made in recent years. Some of the corn fields seen in Western Canada this year equal anything to be found in the East or South and give additional color to the general opinion that the corn belt is steadily moving northward.

In the central and northern portions of the provinces crops vary from medium to heavy. Along the main line of the Canadian Pacific from Winnipeg to west of Moose Jaw the average wheat yield will probably be between 18 and 22 bushels to the acre; further north and in the Saskatoon and Edmonton district and southward from Edmonton towards Calgary averages will approach 25 bushels per acre. Oats are a good crop and in some districts will approach 50 bushels to the acre while individual fields will go 75 or more. Barley also shows a good return, but there is a falling off in the acreage in flax, due largely to the fact that last spring was favorable for wheat seeding and the farmers this year have specialized mainly on wheat.

In many districts sunflowers are being grown for silage and astonishingly large crops are being produced. In one authentic instance 34 tons to the acre was the yield. Farmers are building silos and silaging sunflowers and corn. This, of course, promotes dairy interests which are active and profitable.

An important development in the agriculture of Western Canada is the irrigation areas which are being opened up in Southern Alberta. These possess a very fertile soil and attractive climate and with assurance of water will undoubtedly become important factors in production.

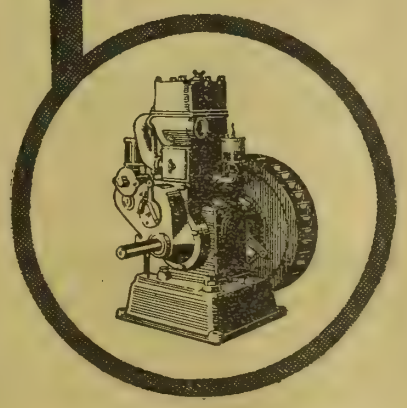
"Bean" SUPER GIANT JUNIOR sprayer



Quicker, Better Work at Less Cost

Adequate equipment is absolutely necessary for thoro spraying. It is impossible to thoroly spray a large acreage with one small pump. There is some one application on all fruit which must be made within a very limited period. Often the loss that results from failure to get the trees sprayed in time is far greater than the cost of adequate equipment.

The Bean Super-Giant Junior with its nozzle capacity of 14 gallons a minute and its 300-gallon tank, does 50% more work in a given time than the old-type outfit with its 200-gallon tank. You not only make a big saving in the cost of spraying, but you get the material onto the trees when it does the most good. Sign and send the coupon for new catalog.



The New Bean 6 H.P. Engine
A Feature of the 1922 Bean Line

Compact, light in weight, and so perfectly balanced that it runs remarkably free from vibration even under full power. Can be quickly and easily made available for other power jobs when the sprayer is not in use. Can also be used to replace the engine on the rig you now have, if you want more power and higher pressure.

BEAN SPRAY PUMP CO.
Originators of the first high pressure sprayer
121 WEST JULIAN STREET
SAN JOSE, CALIFORNIA

BEAN SPRAY PUMP CO. 121 W. Julian, SAN JOSE, CAL.
Please send me your New Sprayer Catalog
Name
Street
Town
State
Kind of fruit grown
No. of acres
(50-522)

what do you buy—"feed or feel"?

Even the most expert poultryman can't tell the quality of a feed simply by looking at it or feeling it. Because a feed can be light or dark, fine or coarse, and yet not vary one-tenth of one per cent in net feeding value.

That's about the least important feed test in the world—texture! For example: Some wheats grind up rather coarse — others rather fine. That makes a big difference in "feel." But does it make a difference in feed value? No!

YOU can set it down as a pretty pat rule that the "feel" of a feed means *nothing*. Texture is about the least important thing in the world when you buy feed. Color is about the least important thing, too. Feed value is the *most* important thing. For *feed value* is the thing you're buying—nothing else and nothing less.

Experience has taught us that proprietary feeds cannot be manufactured in an economical way if color and texture are strictly adhered to. A change in the manufacture of different colored corns, different colored wheats, different colored sorghums or different colored meals immediately shows a change in the color of the by-products. But here's the essential point: *there's no change in feeding value.*

So, why fuss over the "feel" of a feed when the thing you're paying for — the thing your hens are praying for — is feed value? Seasoned poultrymen who use SURELAY year in and year out know this. They know that, regardless of "looks" or "feel," SURELAY is a uniform quality-feed that makes hens pay by making them lay. And that's the only test that interests them—or you!

You can't "go wrong" on SURELAY because our daily laboratory tests make sure that every batch of the feed "goes right" in the blending. That cuts out guess-work in the making and guess-work in the feeding.

Thousands of successful poultrymen have witnessed the profit-performance of SURELAY season after season. They have quit worrying over color or texture. As a matter of fact, they have quit worrying over the feed question altogether—thanks to the uniformly high standard of Sperry Feeds.

That's why we're anxious to bring *you* into the fold. If you haven't seen our booklet, "Make Hens Happy," mail the coupon for a copy of our new edition. You needn't bother to write a letter—although we're ever ready to discuss your feed-problems with you.

STOCK & POULTRY FEED DEPT. **SPERRY FLOUR CO.** STOCKTON, CALIFORNIA

SURELAY

"A Sperry Product"

STOCK AND POULTRY FEED DEPT.
SPERRY FLOUR CO.
208 WEBER AVENUE, STOCKTON, CALIFORNIA

Please send me, without obligation, your booklet "Makes Hens Happy."

Name _____

Address _____

SPERRY PRODUCTS IN EVERY HOME SPERRY FLOUR

"There's a Sperry Feed for every stock and poultry need and remember every sack is guaranteed."

CA

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LVII — November 5, 1921 — No. 19

Glory of Color at California State Conventions

Sunken Gardens at Exposition Park, Los Angeles. Thousands of flowers of all colors planted some months ago in honor of the coming to Los Angeles of the State Nurserymens Convention and the State Fruit Growers Convention.

Established 1877 Forty-fourth Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877

Combined with California Cultivator 1914 Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

Vol. LVII No. 19

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Copy for change of advertisement must be in the office on Saturday preceding date of issue. New advertising copy must be in the office Tuesday preceding date of issue to insure insertion.

Advertising rates furnished on application.

The Sacramento office is Room 210 Ochsner Building. All mail pertaining to livestock should be addressed to our Sacramento office.

The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

Member Associated Farm Papers

Eastern Offices:
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S. E. Leith, Fifth Avenue Building, New York.
C. A. Cour. Globe Bldg., St. Louis, Mo.

Member Audit Bureau of Circulations.

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Saturday, Nov. 5, 1921

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

If among the more than 40,000 Cultivator's weekly circulation any fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

EDITORIALETTES

It takes a wonderful imagination to get even a faint idea of the glories of the scene spread before the eyes in the illustration on the cover of this issue. There were reds, yellows, whites, blues, all the primary colors, and, it seemed, all the various shades worked out in designs like a great tapestry. This was only a small part of the show of flowers made by Southern California nurserymen in honor of the coming of the annual convention. Much of the glory of these gardens may yet be seen by a visit to Exposition Park, Los Angeles.

* * *

Speaking of the Flower Show, Director Hecke said that he had attended other shows in Covent Gardens, Brussels, Paris and other European cities but had never seen the equal of the show just closed.

* * *

If the ideas, or lack of them, on this page this week appear to be in a smudge of sand and plaster and dust generally, and confused by the sounds of saw, hammer and some expressive language such as one hears when the stove is being put up, it may be set down as the result of the Cultivator being on the move. We are in our new quarters, Publishers Trade Building, 317 Central Avenue, near Third Street.

* * *

We say we are now "in" the new quarters, but there is such a mass of confusion that we feel the physical accomplishment of getting out the paper this week is something for which we should have great credit regardless of any worth of the matter contained in the paper. There are some good things, however, echoes from the conventions held during the last few days.

* * *

The Cultivator has not moved many times in its life and hasn't the habit sufficiently developed that the moving is done without great travail of soul and lifting of furniture. Another week and we hope to have some semblance of order and a more orderly appearing paper so that we may say to our friends: "Our latch string is out and we invite you to drop in and help us dedicate our new quarters."

NEXT WEEK

It is hard to say just what we will be able to give our readers next week, but one thing is sure that we have in hand two valuable papers and discussion on them, given on Tuesday forenoon of Convention Week. These have to do with the restoration of the run-down orchard, both deciduous and citrus. As one speaker expressed it at the convention, many people consider the restoration of an orchard from the standpoint of grafting of monkey glands, but some good, hard common sense discussion of building of soils and handling of trees was given, and we think it will be conceded that those articles will give to next week's Cultivator a value to justify a year's subscription.

Another article which may be used next week, and if not then, very soon, is one which discusses pruning of walnut trees. It is one of the most complete discussions of the subject we have yet seen, written by one who has made wide observation.

* * *

"Autos and good roads give us a chance to make four times as many friends as our fathers did." Likewise they give us opportunity to get farther away from distribution points and utilize lands which years ago were considered out of reach excepting for stock range or larger grain farming.

* * *

The Ohio University is recommending "seven gallons of water outside and seven glasses inside every day." Very good so far as it goes, but it appeals to us that the seven gallons is a little bit shy and besides all of us should drink more than we do.

DAIRY COW COMPETITION

The state dairy cow competition has now been conducted a year and a month and is entering upon the home stretch. We believe it has proved a wonderful uplift for the dairy industry. Because of it hundreds of cows have ceased to be dairy cows and others of real worth as producers have been given their rightful place.

One of the features of the contest has been the Cultivator's offer of $25 each month to the best five grade cows in a herd during that month. Regarding this feature of the competition Prof. Woll writes:

"The prize offered by the California Cultivator for the highest producer of butter fat of five grade cows in the herd was won for the second time by Nate Hauck of Alton (average milk 1,216 pounds, butter fat 59.16 pounds, 126 days from calving). These cows won against 20 similar groups of grades competing for the prize during September. The prize has now gone six times to both Humboldt and Los Angeles Counties, San Joaquin County being the only other county in the state where prize winning grades are located."

Other dairy counties should claim some of these purses. We're watching the finish. The north and south are now equal with San Joaquin on the center of the teeter.

USE OF MILK DOUBLED

Forty-five gallons of milk is used by each person in the United States annually, according to estimates made by the dairy division of the United States department of agriculture. This estimate refers to whole milk and does not include that which is consumed in the form of ice cream, cheese and butter. The amount is about twice as much as that used in 1890, when the per capita consumption was approximately 22 gallons. The dairy specialists point out that the increase in the use of milk in the last 30 years is as great as that in the preceding 280 years.

The present day consumption of milk in the United States, they say, is equal to about one pint per day, or as much as two small glasses. That is not a great amount when it is known that it includes not only the milk that is used for drinking, but also that used in cooking. This is a small amount compared to the per capita consumption in some European countries. In Sweden and Switzerland, for example, nearly 70 gallons are used by each person annually.

A high value has always been placed on cows in many European countries, and history records a campaign conducted by Julius Caesar in central Europe where he found German tribes living almost exclusively on milk. In order to provide pastures for their cows they forcibly resisted the settlement of any people near them.

In relating the growth of the dairy industry in this country, the department specialists say that in pioneer days each family kept its own cow. The denser the population became the more important it was to have a well regulated and ample commercial supply of milk. Gradually the number of cows increased, and in time a dairy business grew up in various sections. The development of modern methods in the distribution of milk, with economic and sanitary handling, has been closely accompanied by the larger use of this food, they say.

Much of the milk now used in cities comes many miles, and recently improved methods have made it possible to ship it for long distances in refrigerator cars. At the National Dairy Show in Chicago in 1919, milk shipped from the Pacific coast took first prize in the market milk competition with the highest score ever given to milk in recent years.

Cities have always used a smaller amount of milk in proportion to the number of people than general farming communities, the statistics show. For example, Philadelphia reached the rate of 23 gallons per capita in 1905, which was 15 years later than the country at large reached a consumption of 22 gallons. There are, however, many agricultural and non-agricultural rural districts where cows are not kept and where modern methods of milk distribution are not equal to most cities. The people in such places have to depend on canned milk of various kinds, and this, the dairymen say, is an exceedingly valuable means of supplying a need which 20 or 30 years ago could not have been supplied at all.

NO STRIKE

The strike is declared off before it started, which is fortunate for all and especially for those who would have caused the producers of the country untold losses. For once the would-be strikers had absolutely no support from the people. They were so everlastingly wrong in their contention that not a single force outside their own membership—and as it has finally proved only a small portion of that—stood squarely for the great economic loss.

NURSERY INDUSTRY

A fitting memorial for the meeting of the California Association of Nurserymen to be held next week in Los Angeles is "California Nurserymen and the Plant Industry 1850-1910." This is the gathering together and publishing under one cover of a series of addresses delivered before the California Association of Nurserymen from 1916-1920, by Edward J. Wickson. Prof. Wickson's connection with California horticulture is not quite as extended as the period covered by his addresses but he has been in California since 1875 and his connection has been so intimate that he is abundantly qualified to give us information regarding California's horticulture, and this makes this booklet almost invaluable.

MOST DIVERSIFIED

Of all states California is the most varied agriculturally. Within her boundaries are grown 102 distinct classes of soil products, according to the lists of the last census. Other states such as Illinois and Iowa have large departments of agriculture and efficient agricultural experiment stations, but their problems are simpler because the number of their important agricultural products is less. For example, in Iowa, which leads all states in the total value of her agricultural products, the census lists 76 classes of such products, or 26 less in number than are listed for California. The extremes of climate and other agricultural conditions which make California adaptable to such a variety of products also increase the difficulties of efficient supervision, standardization and experimentation. The agricultural experiment station is carrying on 146 experimental projects ranging from the Imperial Valley 400 miles south of Shasta County and 200 miles north, while the department of agriculture finds it necessary to meet every ship that touches our shores from foreign or inter-territorial points; every rail shipment of agricultural products coming across the state line for protection, and standardizes the vegetable, fruit and animal industry over the entire state for our commercial benefit. The diversity of California's agriculture is a continuous source of wonder to every visitor.—O. W. Newman.

BACK ALMOND GROWERS

Senator Johnson telegraphed Manager Tucker of the California Almond Growers Exchange that 16 senators representing eight states west of the Rockies have pledged themselves to a five and 15 cent tariff schedule on almonds. Advices to the Almond Growers Exchange from Washington indicate that there is little hope for the enactment of a tariff bill before next February. Hearings are scheduled to resume as soon as the senate passes the revenue bill.

California Cultivator

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California's Greatest Livestock Effort

By R. P. Royce

TIME is usually reckoned the factor most essential to the development of great institutions, and for the most part the American public has been inclined to wait until our institutions, great men and their works, have passed that acid test and accumulated a bit of age before pronouncing them great. And all too often have they been inclined to withhold encouragement too long. Not so with the California National Livestock Show held at San Francisco October 22-30. This lusty infant livestock institution made its bow to the California public in a manner that was a surprise to all and with a finished torch that at once evoked whole hearted, unstinted and enthusiastic praise from exhibitors and visitors alike.

When the gates opened there was disclosed what is generally conceded to have been the most satisfactory livestock show ever held in this part of the west. True, it looked a bit temporary, housed as it was in five mammoth tents, but once inside and viewing the long rows of stalls and pens, each one filled with a representative of one kind or another of our improved breeds of domestic animals, the sense that it was a young show and wavering between permanence and oblivion was lost to all, and in its place came the realization that here was one of the most permanent and essential industries of the commonwealth, yes of the world, in open and convincing display for all to see and learn from and ponder over. We don't know yet whether the show will be declared a financial success—probably not, but we do know that the show accomplished everything its backers hoped. The California National Livestock Show first of all proved the contention that the livestock industry of this state is one of fundamental character, that California and her sister states are not only great potential breeding grounds for high class livestock, but that that situation prevails at the present time and is a fact that holds unlimited promise to the future welfare of California economically and socially; economically, because the fertility of our soil is dependent upon livestock, and the more efficient the livestock the more successful our agriculture; socially, because better livestock makes for better men and better women. With good livestock comes prosperity, and with prosperity comes contentment, both important factors in the upbuilding of any community. Then too, the show demonstrated to the business interests of San Francisco that such a show can be made a valuable asset to the city that sponsors it and that the livestock people as a whole are ready and willing to do their part to make future shows a success.

Probably never before was such a show developed so completely by the livestock interests. With minor exceptions all that the directory, everyone a livestock man, asked of the city was its moral support. They said to San Francisco: "First of all we want to show you city folk the sort of a show we feel is needed. We are willing to assume complete responsibility for the detail management and the financial support of this initial show. If you are impressed with our efforts we intend to ask you to come in with us and help put across such a show as California is entitled to and such as we know can be developed." The livestock fraternity has done its part and in a fine, efficient, and dignified and businesslike manner. It now remains to be seen what the city folk will answer.

The writer has been going to livestock shows for a good many years but he does not recall attending any show that seemed to be so near a necessity, that was better managed, or one wherein the spirit of teamwork and rare sportsmanship was so in evidence. One enjoyed every minute of the day and evening, and when he filed out the gate at night he felt that he had enjoyed a rare privilege of association with a group of men representative of the best in life. It is that feeling that makes it certain that sooner or later, probably next year, San Francisco will say to the livestock men and women of this state: "We are ready to help in a material way to make this a great annual exposition and to house it in quarters in keeping with the city and the industry it serves."

The detail story of the show is written in other columns wherein is described the various classes. Aside from the contests in the judging arena there is not much more to refer to. There were no "free attractions;" the voice of the ballyhooer was conspicuous through its absence; no long rows of flim-flam games greeted one; it was just a big, fine, dignified livestock show.

Before taking the show up in detail it is altogether proper that special tribute be paid the active management, and to neglect to refer to the work of the president, C. N. Hawkins of Hollister, would be an unforgivable oversight. The livestock industry of California can count itself fortunate indeed to number within its ranks such a man. Broad-gauged, clear visioned, determined, to him more than to any one else is the success of the show due. For months he has given of his time and money (and of the latter no one will ever know how much, because Hawkins is a modest man) that the show might be held. At times when others faltered it was Hawkins who carried the day, and while he may be poorer in vitality and purse he can count himself rich in the esteem freely accorded him by the livestock world and the knowledge of a work well done. Assisting Mr. Hawkins and at all times in harmony with him was C. R. Thomas, the manager, upon whom fell most of the detail work. To mention others who have contributed to the success of the first California National Livestock show would be to call the roll of the entire board of directors and each and every exhibitor.

Another fine feature that deserves special mention was the way in which the management placed the show before the school children of San Francisco. More than 42,000 tickets were distributed to the various schools through the generosity of leading San Francisco banks and merchants, and throughout the week, through the cooperation of the city school officials, these 42,000 children visited the show accompanied by their teachers. Safe it is to say that the average San Francisco school boy and girl has a new and wholesome idea as to where their milk and meat and clothes come from.

The outstanding feature of the exhibit was the remarkable showing made by the Hereford and Shorthorn breeders. Each division set a new record and in both numbers and quality need offer no apologies to any show.

The dairy cattle division was not as strong as it might have been but it is certain that with future shows this weakness will be corrected. At that it must not be understood that the dairy cattle were lacking in quality.

The horse show was entirely creditable and the show of sheep particularly good.

The Herefords

Honors of the show went to the Hereford breeders by virtue of having the largest entry list. One hundred and sixty-odd head were entered in the regular classes and in point of numbers and quality entitled the exhibit to take high rank among the leading shows held anywhere this year. Such a notable showing, representing the best of six states, is highly significant of the rapid progress the Hereford breed has been making in this state during the last few years and came as a real surprise not only to the visitors from the east but the members of the Pacific Coast Hereford Breeders Association. Nearly every class, especially the young classes, was well balanced from head to foot, and it can be said that mighty few shows can boast of fewer 'tag ends."

John W. Van Natta of Lafayette, Indiana, was the judge.

Six aged bulls led off the judging and as soon as they had lined up it was apparent to the ringside that the massive Roehampton 34th, carrying the Rule colors, was the outstanding top. His impressive front, great scale, even lines and good balance, coupled with a nice job of fitting, placed him above McNerney's son of Beau Blanchard that was lacking a bit in quarters and not so close to the ground. The other three places were filled with bulls bordering on the plain kind.

Eleven two year olds presented a rare sight for California Hereford men. The Cook herd from Montana stepped in to first place with Panama 110th, a bull of scale and nice lines but a trifle more upstanding than some of the others that stood close to him. He is a good bull at that and went through to the senior championship over the aged Rule bull. In second was a Colorado entry rather plain headed but in sufficient flesh to go above the Bunting entry. Had the third bull carried more condition it is altogether probable that he would have landed the top honors of the show. He is especially good in front, strong in the heart, level in his lines and good through his quarters. Cook was fourth and Briggs fifth.

Cook again headed the senior yearlings with another Panama whose depth and thickness and bulging quarters carried him above an attractive youngster from the Barngrover herd that needed but a bit more spring of fore rib to set him ahead. The Thiessen bull went above the Cable entry and smoother covering, largely because of his greater scale, though he lacked the head and balance of the latter. McNerney was fifth with a smaller bull, a bit weak in his fore rib and a trifle plain at his tail.

As at Sacramento, the grand champion of the show was developed in the junior yearling class and was the same youngster from the Cazier herd. This calf is one of the attractive ones of the year. Aside from a little slackness at the heart there is little to criticize, but he needed every bit of his quality and splendid covering to win over the very short aged calf shown by Baldwin. Give that youngster an even break in age and he would make the best of them step. Cook was third and Howard and Thiessen brought up the rear.

The eight senior calves fell in behind a growthy entry from the Cook herd whose greater size was about all he had to recommend him over the low set, well covered calf of more pleasing type shown by Cazier. Jacks was in the third notch and John Bunting, Jr., was fourth with a calf of more scale than the one below him.

The 14 junior calves augur well for future shows. They were a nice lot. Briggs won rather handily with a calf of more size and condition than the others.

A rather unusual class was provided at this show; the same being for an aged cow showing with a calf at foot. The Shorthorn classification calls for such a class but this is the first time the Herefords have followed the plan. Miss Joy from the Cook herd was quite outstanding and annexed another blue to her already long string. McNerney was second and Barngrover third.

Following the above class came the aged dry cows, and five good matrons answered the call. Bocaldo Beauty, the remarkable cow from the Jacks herd, was the class of the lot and as on many former occasions she was sent to the front. There is little question but that she is a remarkable cow and so far as the ringside felt she was the best Hereford female at the

(Continued on Page 482.)

Agricultural News Notes of the Pacific Coast

Northern California

Eastern Placer County is shipping out persimmons.

Rice growers are complaining of damage to their crops from ducks.

The end of the grape shipping season at Lodi shows another shortage of cars.

Eden and Washington Counties in Alameda County have formed a country chamber of commerce.

The new state highway from Sonoma to Santa Rosa has been mapped out by the state highway commission.

The plant of the California Prune and Apricot Growers at Brooklyn, New York, has been doubled in capacity.

The first cockerel sale held by the Sonoma County farm bureau resulted in sale of 42 birds for a total of $1,920.

The petition for formation of the Los Molinos irrigation district has been denied by Tehama County supervisors.

The bean crop of the Sacramento Valley is estimated at about 15 per cent less than at the beginning of the harvest.

Average butterfat yield from tested cows in the Sacramento-Yolo association this year showed an increase of 24 per cent over last year.

It is estimated that two-thirds of the California potato crop is still in the hands of the growers who are holding for better prices.

Because of continued hot weather the Stockmens Protective Association of Alameda County has determined to retain several fire patrolmen on the ranges.

The close of the grape shipping season in the Lodi district shows almost frantic activity among buyers who have been holding off expecting to beat down prices.

The Placer County chamber of commerce has asked the supervisors to call an election for special bond issue for the purpose of building laterals to the state highway.

The Sacramento County farm bureau held its annual picnic and election at Davis, October 15. Fred Schmidt of Mills was elected president. Mabel Townsend of Sacramento is secretary-treasurer.

The Pacific Pigeon Fanciers Club was formed last week in Oakland. As an initial activity the club plans to enter several hundred birds in the Los Angeles Pigeon Show to be held the first week in December.

There is a proposition to build a bridge across the bay from Mulford's Landing to the San Mateo and San Francisco County lines with a main span of 2,000 feet across the deep channel and a 140 foot bascule in the middle.

A meeting of all interested in growing peas was held at Hayward, October 26, under the auspices of the Alameda County farm bureau. E. O. Essig, entomologist of the state university, was present to discuss control of pea aphis.

At a recent meeting at Willows over 25,000 acres were signed up in the rice growers' association. This is the new association formed with Ralph W. Merritt as president and manager and which has $1,000,000 of War Finance Corporation funds ready to loan to members.

Central California

Springville, Tulare County, reports coyotes over-numerous and a menace to poultry.

Trainload shipments of feeder cattle are being received at Oakdale, Stanislaus County.

Lindsay, Tulare County, expects a navel orange crop at least 400 cars heavier than last year's.

The Fresno County farm bureau held its annual picnic and election at Kearney Park October 27.

Fresno County has filed several suits against property owners for payment of expenses of rodent eradication.

Thousands of cattle are being driven down from the mountain ranges to winter feed lots near Raymond, Madera County.

Modesto grape growers report sales of wine grapes at $125 a ton in the Oakland market. They expect to see Zinfandels bringing $130.

San Joaquin County farm bureau will soon start a campaign to enlarge its membership. The annual dues have been raised from $2.50 to $5.

The Fowler, Fresno County, Square Deal Club reported at its first meeting that two crops of raisins had already been saved to the association.

Water rights on the Merced river have been granted the Merced irrigation district, which will supply water to 189,000 acres of land surrounding the city.

Citrus growers of southern Tulare County met last week at Ducor and formed a citrus club. Frank Daybell was elected president and J. E. Blodgett secretary.

Application by the San Joaquin Light and Power Corporation for revision of rates will be heard by the state railroad commission at Fresno on December 13.

Secretary Murdoch of the California Associated Raisin Company has called upon all members to respect their contracts. There have been numerous reports of illegal deliveries of raisins to independents.

At the last joint session of directors of the Turlock and Modesto irrigation districts reports were received of satisfactory progress on the Don Pedro dam; 20 carloads of gravel per day is the schedule.

A milk contest will be held at Bakersfield high school November 5 in connection with the Kern County high school boys' agricultural class fair. Scoring is open to any registered dairy in Kern County.

In furtherance of the fight against contract breakers among the membership of the raisin association the farm bureau of Centerville, Fresno County, met October 28, to organize a branch of the "Square Deal Club."

The annual meeting of stockholders of the Central California Citrus Exchange was held last week at Lindsay. Frank Hostetter of Lindsay was elected president and A. S. Rider of Lindsay, secretary manager.

A five day tractor school will be held at Modesto high school, November 14-19 under direction of the state university. Enrollment is limited to 60 men who own, operate or are directly interested in tractors. Enrollment fee is $2.

Southern California

Chino, San Bernardino County, held a community fair November 5.

Work is being done on the state highway from Indio to Coachella.

Foggy weather has delayed bean threshing in the Carpinteria section.

Bonds of the Blythe irrigation district will be offered for sale Monday, November 7.

Herbert T. Wilder has been appointed farm adviser of San Bernardino County.

Encouraged by large attendance the managers of the El Centro fair are already making plans for 1922.

Engineers of the state highway commission are running surveys east from Trifolium to Westmoreland.

Yucaipa Valley is marketing some of the highest colored, best flavored apples that she has ever produced.

Herbert T. Wilder has been appointed farm adviser of San Bernardino County. He will take up his work November 15.

There was a representative gathering of fruit growers at the state fruit growers convention which was held in Los Angeles last week.

Horticultural commissioners from practically every county of California met in annual convention at Los Angeles last week.

The Indio Date Festival brought out an almost continuous procession of automobiles from various parts of California to the Coachella Valley.

Palo Verde cotton growers will send a delegate to the annual meeting of the American Cotton Association in Alabama the latter part of this month.

The Dahlia Club of Los Angeles held its show at Exposition Park, in conjunction with the California Flower and Horticultural Show, October 20-23.

The Mojave Valley Fruit Association has decided to build a packing house at Victorville. There is also talk of establishing a by-products plant.

Bids are to be received by the state highway commission for the construction of highway from Palm Springs along the northern side of the Southern Pacific railway to Indio.

A grape growers short course was held at the Brawley school November 1, at the El Centro high school November 2. Professor Bioletti of the state university was the principal speaker.

It is announced that the Orange County farm bureau has joined ranchers of Villa Park, El Modeno, Olive, McPherson and Tustin in their fight against the proposed Southern Pacific branch line.

San Bernardino County is finding difficulty in enforcing the over weight truck ordinance, because of the large number of trucks which come in from other parts of the state which do not enforce loading regulations.

At the recent conference of supervisors of Southern California counties held in Los Angeles it was reported that San Diego and Imperial Counties would adopt immediately the same truck load ordinance now in effect in Orange, San Bernardino and Riverside Counties and that probably like action would be taken by Los Angeles, Ventura and Santa Barbara Counties.

The Coast and General

Colorado potato shippers are also embarrassed by lack of cars.

New York state dealers are paying growers $1 a bushel for potatoes.

Large quantities of honey in central states are going direct to the consumer.

30 per cent of the Jonathan apples of the Okanogan Valley of Oregon have already been shipped.

A good demand for premium staple cotton is reported at New Orleans and a fair demand at Memphis.

The Northern Pacific Railroad announces that it will continue its reduced rates on apples after December 31.

The apple crop of Washington is now estimated at 20,474,000 bushels, about 50 per cent more than last year's yield.

Fourteen hundred farmers of Maricopa County, Arizona, are affiliated with the national farm bureau association.

Oranges are coloring very slowly in the Yuma Valley of Arizona but are very sweet. Salt River Valley grapefruit is now in the local market.

A quarantine against shipment of sweet potato plants, cuttings, etc., has been issued by California against Southern and Eastern sections of the country.

According to carefully gathered statistics the production of sugar in Germany the present year will be 50,000 tons more than last year when 290,000 tons were produced.

The October 1 crop estimate of the department of agriculture shows the cranberry crop in the leading producing states much below that of last year, which was itself a short year.

Exports of citrus fruits from Cape Town, South Africa, will amount to over 250,000 boxes. It is stated that twice this amount would have been shipped if transportation space had been available.

A new rate of $1.25 per box for apples shipped in refrigerated space from Seattle, Washington, to north European ports by way of the Panama Canal has been announced by the Royal Mail agencies.

The annual meeting of the American Pomological Society will be held at Toledo, Ohio, December 7 to 9 and exhibit of fruits will be staged in conjunction with the National Farmers Exposition held at the same time and place.

Something over a half million dollars has just been distributed by the U. S. forest service to states in which there are national forests. California received over $185,000, Arizona nearly $60,000, Oregon nearly $103,000, Washington $77,000.

A Holstein breeders organization to be known as the Western Holstein Breeders Association was organized at Modesto last week. The plan is to take in breeders in Oregon and Nevada as well as California. A. M. Bibens of Modesto was made temporary president.

Growers and shippers of the Wenatchee Valley of Washington plan to start legal proceedings against the Great Northern Railway because of failure to supply cars for apple shipment. Growers say there are 12,000 carloads ready for shipment and only 1,000 cars in sight.

Some of the Attendants at the Fifty-fourth State Fruit Growers and Farmers Convention at Exposition Park, Los Angeles

Fifty-Fourth State Fruit Growers Convention

By C. B. Messenger

A SOLID week of conventions closed with many expressions on the part of attendants in effect that it had proven a most profitable time. It is possible that there was no action so outstanding in importance that it will rival the initiation at the Chico convention of the legislative committee which has proven of such great value in securing laws which do justice to the agriculture of California. The work of this committee has been so effective that one entire day was given to reviewing it and its program for the future. A part of the day's program was the hearing of the report of the transportation committee appointed at the Fresno convention. The committee is composed of C. E. Virden, Sacramento; G. H. Powell, Los Angeles; A. B. Humphrey, Mayhew; C. M. Brown, Redlands; J. L. Nagle, Sacramento; Thos. E. O'Neill, Los Angeles; E. Y. Foley, Fresno; A. M. Pratt, Redlands. Following the report of this committee the feeling was expressed that its work was not yet completed and that it should be continued. A motion to that effect was unanimously carried.

Judge Willis Morrison and Colonel Harris Weinstock reviewed legislation, state and national, favorable and unfavorable. Colonel Weinstock closed his address with a series of resolutions, full text of which appeared on page 439 of the last issue.

But before touching more upon even the high spots of the convention it is proper to give a word as to the garden fairyland in the center of which the convention was held. The meetings were in the assembly room of the state exposition building at Exposition Park, Los Angeles. Many years ago what is now Exposition Park was known as the Sixth District Fair Association, and at the annual "fair" the ponies and the trotters gave the principal part of the entertainment and the instruction. Those were the days when Lucky Baldwin, L. J. Rose and many other lovers of the turf were breeding up some exceptionally speedy ponies.

Later the Sixth District Fair Association terminated its activities and the lands which had become encircled with residences of the city of Los Angeles were turned over to the state of California. At a meeting of the State Fruit Growers Convention held in Sacramento some dozen or more years ago Mr. Bowen of Los Angeles made appeal for a resolution supporting the effort of Los Angeles to have the state construct a $250,000 building which should be maintained as a permanent horticultural and agricultural exposition of productions of California. The Sacramento convention passed the resolution unanimously, and later a session of the legislature made appropriation of a quarter of a million dollars, a part of which was afterwards returned to the state treasury because of the economical management of the committee in charge of the building. The structure, however, is a most beautiful one and is a monument to the wisdom of the legislature in making this appropriation. On the same grounds was later constructed a building for armory purposes of the National Guard of California.

In that building was held the nurserymen's convention, an account of which appeared in last week's Cultivator. At the far end of the great court which during this convention was filled with literally millions of dahlias, Los Angeles has constructed a building which is used for a museum and art gallery. W. N. Harris represents the state of California in managing the affairs of the state in the buildings and grounds. We asked him as to the activities conducted in the park. He said:

"Exposition Park, which has come to be known as one of the most interesting and beautiful of the recreational resorts of Los Angeles, has for a number of years offered many varied attractions for the pleasure, entertainment and education of home people of the city and thousands of tourist visitors. In addition to the permanent attractions to be enjoyed here, the park has afforded a charming setting for many fairs, pageants, community entertainments, livestock shows, and public gatherings. It is doubtful if there has ever been created a more gorgeous exhibition of growing blossoms than that which now fills the sunken gardens. Where, excepting under the kindly, sun-blessed skies of California, could such a wondrous result have been achieved in scarcely more than four months' time? By what necromancy were numberless plants made to bloom out of season and all of them, thousands upon thousands, to bloom in such profusion at exactly the right time? The result was achieved through the application of exact horticultural methods, plus a lot of hard work, notwithtanding which, to one who has watched the development of this floral wonderland, the word "magic" is constantly suggested in contemplation of the achieved result.

"Exposition Park is owned by the state and is in custody of the Sixth District Agricultural Association. Excepting the state exposition building, the park is under lease to the city of Los Angeles, the city park department maintaining the grounds. The Exposition building is maintained for the benefit of the entire state as a permanent exposition of the resources and industries of California. This institution provides, at the most logical place, an exceptional facility and opportunity for publicity and educational work. The exhibits shown and the publicity handled at the information bureau are representative of every county in the state. Space is provided for individual county displays and many of the counties are availing themselves of the opportunity to reach thousands of newcomers to California every year. Motion pictures illustrative of conditions throughout the state are shown daily in the assembly room. The services offered at this building are entirely free. The average yearly attendance of visitors is something over 250,000."

But coming back to the convention, there was not a dull moment. The nurserymen and avocado men had finished their sessions the Saturday preceding Monday morning, a time seldom chosen for convention beginnings. Several hundred filled the hall. These were mostly real producers, with a sprinkling of county horticultural commissioners and representatives of the University of California and the state department of agriculture. Several representatives of the United States department of agriculture were also frequently heard on the floor. Private Secretary H. H. Kinney, representing Mayor Cryer of Los Angeles, gave most hearty welcome to the city which includes within its 340 square miles, the greatest amount of farming land of any city in the world.

Mr. Hecke responded with fullest appreciation of the cordiality of the welcome, after which he took up and read his

Annual Report

In greeting the farmers and fruit growers at this 54th convention, it is with great pleasure that I am able to bring to you a message more hopeful for the immediate future than was possible at the Fresno convention last season. Due to the steadfast and well balanced efforts of the California farmers more has been accomplished than would have been thought possible. Banking and business interests all over the country are now in closer touch with labor and with the farming industry. Through cooperation, through standardization and better marketing the farmers and fruit growers are getting reasonable prices for their farm products—and instead of business being on the down grade, we find it is looking toward steady improvement.

As an accurate index to the progressive development of California we have but to turn to the census and other statistical returns for the decade of 1910 to 1920. Statistics, assembled by the cooperative crop reporting service of the state department of agriculture and the United States bureau of markets and crop estimates indicate that the total number of farms in California during the ten year period has increased from about 88,000 in 1910 to about 118,000 in 1920. The value of all farm property has increased in the same period from a little over one and one-half billion dollars to the huge sum of about three and one-half billion dollars—an actual increase of over 112 per cent.

These figures are startling enough in themselves, but when we attempt to estimate the probable increase in production during the next decade we are indeed surprised, if not somewhat alarmed. Based on present plantings in the deciduous fruit and grape industries, for instance, it is probably fair to say that the commercial output by the year 1930 will have increased three and even four fold. Such a tremendous production will demand the highest type of organization, the greatest possible efficiency in handling and marketing methods, and assistance from the state department and from the college of agriculture.

Conclusion

The progress made by the department of agriculture is very gratifying, and has met with the general approval of the agricultural interests It would, however, have been impossible for the department to have developed to its present state of efficiency had not Governor Stephens and the legislature stood solidly back of it in supporting its needs, by providing a generous appropriation and by his approval of the many bills that were submitted to him through legislative action inaugurated by the agricultural legislative committee. It is not saying too much when the claim is made by those who have watched the development of the department that its being and its progress is primarily due to the energies of Governor William D. Stephens.

The continued success of the department of agriculture in giving service to the fruit growers and farmers of the state depends, in addition to the governor's support, upon the individual backing of the fruit growers themselves and upon the continued interest and advice of the agricultural legislative committee. With the many difficult problems which we must face today and in the future, everyone must put his shoulder to the wheel if we are to maintain the high position we now hold in the rank of the agricultural states of the Union.

Gov. Stephens at Banquet

Tuesday evening's banquet at the City Club was attended by nearly 300. The governor said in part:

Honored am I by the opportunity given me to talk to you following a program filled with so many interesting debates as have engaged you today. I do not know that ever I have seen a program more replete with discussions of intense interest to fruit growers and farmers. You are to be congratulated

on the work of your program committee.

I come tonight as fellow citizen and as governor of this great state, to speak to you on "Agriculture as the Basis of Prosperity" and to touch briefly upon some other points of interest to all good citizens of California.

Born in a small country town in Ohio, I early learned to shock corn and to shack it too. I have walked all day behind a two-horse plow and have cut cord wood the whole day through. As a lad I "carried sheaves" in the harvest field and when grown up, I took my turn under the tail end of an old fashioned threshing machine actively at work. (I can feel the chaff and beards yet as they wriggled downward beneath my calico shirt.) I have attended many corn huskings, searched for and found a few red ears and claimed the reward due such perseverance.

As a boy, I raised a pig from infancy to hogdom—400 pounds he weighed when my father decided it more economical to kill than to sell him. The lard was scorched and the meat spoiled in the curing, and I must confess that I did not feel unduly sorry.

With all this experience, and more, is it strange that ever since I have been interested in everything done on the farm. Throughout my Washington service as congressman from the very district in which you are holding your convention I voted and worked for "farmer legislation" and during my service as chief executive of this state I have had constantly in mind the subject assigned me tonight, and which I always have believed to be founded upon fact: "Agriculture is the basis of all our prosperity and if we would have the rest of our people happy and contented, we must see to it that he who produces from the soil is successful in all his undertakings."

If the farmer is prosperous, then the wage worker, the manufacturer, the merchant and the banker is in turn provided with work, with something to make, with a market for his wares, and with adequate security for loans.

If the farmer has fair crops which he can sell for more than cost you will see on his face the smile that will not come off, and when he drives into town, whether it be on a truck load of potatoes or prunes, onions or oranges, hay or hogs, cantaloupes or cattle, cotton or wool, pears, peaches or grapes, the rest of humanity is there to meet him and with arms extended wide they welcome him to all the joys that follow prosperity.

Organization has been of incalculable help to the California farmer, and cooperation is the slogan with which he advances in the competitive battle he wages in markets of the world. In every way possible I have tried to help the fruit growers, the farmers, the cattlemen of California, and as long as I am the governor of California, I shall show my sympathy through actual demonstration.

Two years ago, as a part of our reorganization plan we consolidated many actvities having to do with agriculture, horticulture, cattle raising and kindred industries into one great department of agriculture. The increase in efficiency was so great and so marked as to warrant the further inclusions made this year. Today California has the best state department of agriculture to be found in all the United States.

Permit me to read the following letter recently received: "I am taking this opportunity to convey to you a knowledge of the expressions of high esteem I have heard of the state department of agriculture of California, while on an eastern trip.

After the meeting of the executive committee of the American Farm Bureau Federation at Springfield, Massachusetts, I was assigned to a speaking tour through New Hampshire, Vermont, Massachusetts and Connecticut. While in these states I came in contact with their leading agriculturists, and all were well acquainted with our state institutions and were high in their praise of the efficient work of the Calforna department of agrculture. They look upon the work of this department, under G. H. Hecke, in quarantine, pest control, etc., as the outstanding type of its kind in the United States.—W. W. Walker, Executive Committee, American Farm Bureau Federation."

It is my desire that all of the Great West, and particularly California, shall be developed properly, that the man or woman who is invited to farm our lands shall actually have a fair chance to win. We must provide that absolute necessity for our lands, water. And not only for the new settler must water be at hand, but an abundance of water must be made available for those who have been successful on a limited area and whose success warrants the intensive cultivation of more and more land.

There remain 5,000,000 acres possible of irrigation in California. This area is an empire in its extent and in its possibilites. More can be produced on this area alone than can be raised in the whole area of some other states—if water is provided.

Water on every acre and power for every purpose must be the slogan of every lover of the Golden State. There is enough of both going to waste or lying latent in the hills. You all are acquainted with the power of a horse, but do you realize that it would take 10,000,000 horses to furnsh power equal to that asleep in the mountains of California?

The last legislature passed a series of soldier laws, among them bills appropriating $3,000,000 to be loaned to California boys who enlisted in any of our wars and who still reside in this state. In November, 1922, all voters will be called upon to authorize an addition of $7,000,000, making in all $10,000,000 which California proposes to lend to her soldier lads to assist them in the purchase of homes and farms. They are your own boys, they belong to California, and when we help them to own homes and farms we cause greater interest in California's development and in a larger production of fruit, vegetables, grain and livestock. When we help California's soldiers, sailors and marines we help ourselves.

May I not ask you all to assist in educating Washington and the East as regards our Japanese problem. Washington is not fully informed and the Eastern people generally have even less information concerning this all important question. Japan is a great nation with a wonderful history and has made remarkable progress entitling her to a place among the Great Powers of the World—but she is not entitled to absorb America or any part of it.

California is for those whom we can assimilate—and immigration to our shores of any people who can not possibly become citizens of America must stop. The necessary legislation is almost wholly federal, so help us to educate our national government at Washington.

All the events of the convention would fill a book. A part of the "book" we have in hand and will use from it from time to time.

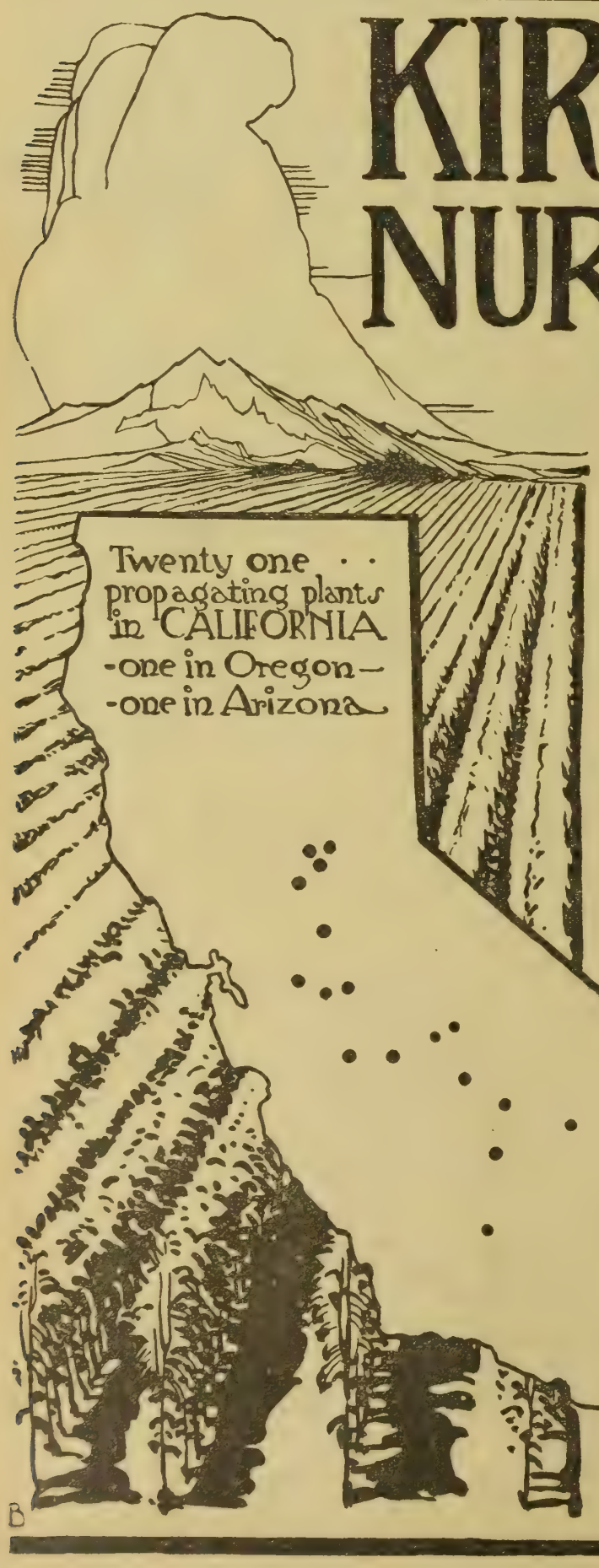
Director Hecke and Secretary and All-Around Assistant Killingsworth, together with the chairmen of the various sessions, deserve and received the thanks of all attending.

The substance of the resolutions reported by the committee and unanimously adopted are:

The Resolutions

Be it resolved that this convention voices its approval of the present form of organization of the state department of agriculture and of its administration, and particularly does this convention express its approval of the present director of the department, Hon. G. H. Hecke, and its appreciation for his tireless activities in the interests of the work which he is administering.

Whereas the government has provided in the railroad labor board an agency for settlement of disputes between carriers and their employes;



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RELIABLE TREES AND VINES

are essential to the great fruit industries of the Pacific Coast.

Our experience has been gained by 32 years of progression in the nursery and orchard business in California.

Reservations are now being made for future deliveries.

We offer our services in undertaking the planting and care of commercial orchards on large scale.

Kirkman Nurseries, Inc.

Main Office:

Fresno, California

Member of
Bud Selection Association
of California

that the 54th California Fruit Growers and Farmers convention unqualifiedly endorses this agency and demands that both parties to the dispute accept its rulings.

In the passing of Ethan Allen Chase, California fruit growers, and all growers and producers, all mankind, have lost a true friend. His life was an inspiration to greater accomplishment, to better citizenship, to higher service. For more than four score and ten years his motto seemed to be more and better service to others. We, who labored in the same field, we, the fruit growers and farmers of California in fifty-fourth convention assembled at Los Angeles, October 26, 1921, wish to express to the family and more intimate friends our heartiest sympathy in their great loss, and at the same time joy with them in the memories of a life so strong, so efficient, so great.

Whereas the American farm bureau has appointed a national committee of 21, on which California has two representatives, for the purpose of studying problems of the marketing and distribution of fruits of the United States, be it resolved that we endorse the purpose of the committee and offer our services and experiences to them to encourage the organization of cooperative marketing associations among the growers of fruits.

The convention expressed heartiest appreciation of the efficient work of the committee in charge of preparations and detail arrangements for the convention. Members of the committee were: H. J. Ryan, Robt. W. Hodgson, Jas. Britt, Dr. Clements of the Los Angeles Chamber of Commerce and H. L. Musser.

PRUNING OLIVE TREES

THE main object in pruning all varieties of olives in the beginning is to get a robust framework as quickly as possible, and therefore it is only necessary to thin enough to allow light to penetrate freely all parts of the tree and cut out weakly and crossing branches. Olive trees are unlike soft wooded trees that bear stone fruits, being of very hard wood, so that a sufficiently strong frame may be built from the first growth no matter how rapidly it develops.

Heavy pruning would retard such development. After a sufficient framework has been built and the trees are of fruiting age, more pruning is necessary to keep the head of the tree low enough so the crop may be harvested without the aid of balloons or even ladders of unusual length. Preserve the flower bearing branchlets of the preceding year and be careful not to cut away lower branches so that the trunk could get sunburned. Not all varieties may be pruned alike, for Prof. F. T. Bioletti says: "The Ascolano is a straggly, drooping grower and at two years old it is better to tie the trunks and branches to stakes and keep them upright for two years. After that time they will remain fairly fixed as to position. The Manzanillo also is a drooping variety and seldom grows too high. Open up the center, thin well and cut away the larger drooping branches."

The Mission Olive

As the Mission is grown far more than all other varieties combined, we quote in full Professor Bioletti's latest directions for pruning this variety:

"The principal object of all the work done in a young olive orchard is to bring the trees to a sufficient size and a suitable shape for bearing, in as short a time as possible. This object may be helped or hindered by pruning. The usual method of pruning based on the practice used with peach and other deciduous trees is successful in producing the desired shape but much delays the attainment of the size necessary for bearing. A method which will attain the desired object much more quickly has been well tested for a number of years. The fundamental idea of the method is to cut off as little of the tree and its foliage as possible and still obtain the desired shape.

"On planting cut back to two or three feet, according to size, cut back branches to a few inches and whitewash. During the summer pinch the growing tip of any shoots below the middle of the stem. The second year remove all suckers from below ground and all twigs within 12 inches of the ground. Leave everything else. The third year remove everything below 12 inches. Leave everything else. Continue this prnning or lack of pruning until the tree has reached a height of eight or ten feet, when it is large enough to bear. The fourth or fifth year the tree will consist of an upright trunk two to three feet high, from which are growing on the upper two-thirds from five to eight or more main branches. Two or three of these branches will occupy the center and will grow vertically several feet higher than the others. These others will have an angle of about 60 degrees from the vertical.

"The pruning consists of three steps: Cut out the tall central branches completely, that is, do not shorten them or leave stubs, but saw them off at the point where they leave the main trunk, or where a strong spreading branch makes a fork. This will give the tree the open goblet shape desired.

"The surrounding ring of branches is then examined and if they make too dense a mass some should be removed, as was done with the center branches. Remove any which appear crowded, crooked or ill placed.

"Thin out the small drooping branches where they appear too dense for the enarance of sun and air. Do no thinning out of small twigs. If enough branches and secondary branches are removed, the twigs and branchlets left will be given the air and sun necessary to make them set fruit. Above all, do not shorten the ring of large branches nor remove any of their twig growth. This would tend to make them drop their fruit and send out very vigorous sterile shoots. By leaving all their twigs they are encouraged to bear and a good crop at this stage will bend out the main branches and give the tree the low spreading shape which is desired."

ORANGE AND OLIVE EXPOSITION

The Northern California Orange and Olive Exposition will be held at Oroville during Thanksgiving week, November 22 to 26. The dates selected will also prove conclusively that the north has oranges ready for the Thanksgiving table. The exposition will be held in the big auditorium at Oroville, which has a floor space of 26,000 square feet and is the largest building for exposition purposes north of Sacramento.

POTATO MEETING

The potato growers of the Los Angeles County farm bureau will hold their fall meeting for Southern California potato growers in the Van Nuys high school at 10 a. m. on Tuesday, November 29.

The two big problems confronting the potato grower of the south are the disposal of the enormous crop of culls and the working out of some system whereby a profitable crop of fall potatoes can be secured. The loss from these two items amounts to millions of dollars every year.

The program is:

Election of officers of the Potato Growers' Department.

Presentation and discussion of program of work for 1922.

The necessity of remedying the fall crop situation, Robert W. Hodgson.

Blackheart of potatoes, Dr. J. P. Bennett.

What the manufacturing interests can do for the cull crop of potatoes, Dr. Geo. P. Clements, agricultural department of Los Angeles Chamber of Commerce.

What becomes of the Southern California potato crop. R. G. Risser.

A PATRIARCHAL ORANGE TREE

The Farmers Weekly of South Africa records an orange tree growing at Cambria, Cape of Good Hope province, that is more than 100 years old. It was grafted on a lemon root. It was quite a large tree when the present owner's grandfather was born, more than 90 years ago. It is not stated what variety it is, if known, but it bore one year "more than 7000 oranges."

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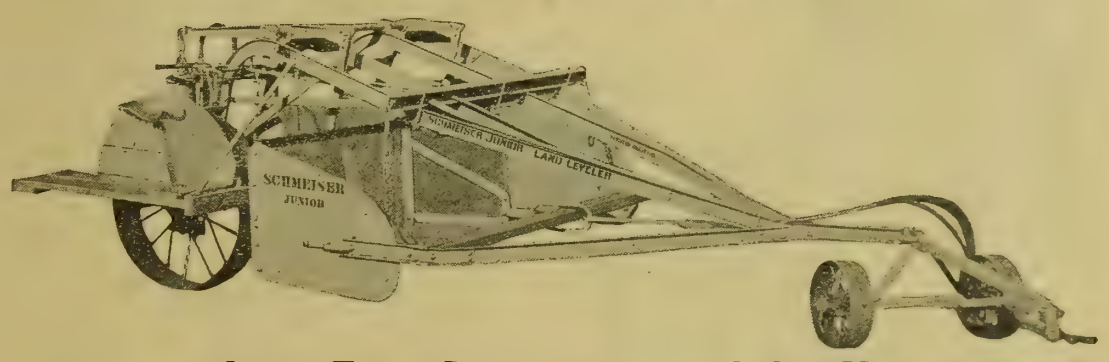

9, 10, 11 and 12 Foot Sizes. 2 to 5 Cubic Yard Capacities and requiring 45 to 75 H.P. Tractors

The simplest and easiest method of operation. The tractor driver can do it as easily as the locomotive engineer handles the brakes on his train.

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Easily operated by a man on the leveler by a hand wheel.

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For All Small Tractors

For reclaiming rough, worthless land; leveling land for orchard, vineyard, garden, hops, alfalfa, asparagus, cotton, and in fact for any crop requiring irrigation these Levelers have no equal, and will reduce the cost from 25% to 50% over that of any other method of leveling.

These Levelers are also good road builders; manure spreaders; and in fact will do many things on a farm, thus saving money to the owner.

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Los Angeles, California

The Operation of Federal Foreign Plant Quarantines

By R. Kent Beattie, Foreign Plant Quarantine, Federal Horticultural Board, Before State Nurserymens Convention

THE average American citizen thinks of the United States government as an organization set apart from the people, located far away at Washington, D. C., and very impersonal in its nature. Members of the United States department of agriculture are often looked upon almost as foreigners come among you to bring you messages from afar. It is but fair to remind you that the department is but the people of the United States at work solving its food problems and expanding, improving and protecting its agriculture. Every member of the department is a citizen of some state, territory or district. Every state, north or south, east or west, is represented and of course California has its share of agricultural workers at Washington. These men are your agricultural representatives, drawn from among your people, carrying out their studies on your crops and in your fields and orchards.

I am happy to say that I myself am a citizen of a Pacific Coast state, of Washington and as such may claim an especial interest in and some familiarity with your agricultural and horticultural aspirations, progress and problems.

It is interesting to note that four of the five members of the federal horticultural board chosen by the secretary of agriculture to act as his principal advisers and agents in the enforcement of the plant quarantine act are western men, the states of Kansas, Vermont, Michigan, Nebraska and Ohio furnishing the men who are members of the board. All are men of long experience in the department and possess broad familiarity with American agriculture.

It is not necessary to explain to a California audience why the plant quarantine act was passed by congress. The so-called San Jose scale which descended upon California from China some 40 years ago was the first great school master who taught the American people to fear a foreign agricultural foe and California was the first pupil to graduate from his school.

But the San Jose scale was by no means the first introduced pest. Foreign plant diseases and serious insect pests had been coming into the country for years. The late blight of the potato which came from South America has been here so long that America pays a tribute of from five to ten per cent of the potato crop to it every year almost without thinking. Wheat and oat rusts came at least a hundred years years ago and every year levy tributes of millions of dollars. But the San Jose scale caused serious and noticeable losses, it made necessary radical improvements in spraying practice, and last but not least it came when the mind of the American people had developed to a point ready to grasp its significance.

Taught by this and other pests, California led in the development of horticultural protection and developed a splendid quarantine service which has been an inspiration and an example to the other states.

But the American people as a whole received lesson after lesson. The San Jose scale descended on the eastern states. The gipsy moth and the brown tail moth began their ravages at Boston. The Hessian fly invaded the wheat belt. The chestnut bark disease moved like a consuming flame through the valuable chestnut forests of the Appalachians. It became apparent that state authority and state forces were unable to protect efficiently our international boundary lines.

The passage by congress of the plant quarantine act in 1912 provided the secretary of agriculture with machinery by which he could set up a national defense against the inroads of foreign plant pests. As required by the law he appointed a federal horticultural board to assist him in the work, its personnel selected from the bureau of plant industry, the bureau of entomology and the forest service as provided by the act.

The board employed such subordinates as are necessary and with the growth in complexity of the plant quarantine work has organized several divisions or offices. The office of foreign plant quarantines has been charged with the supervision of the enforcement of the foreign quarantines. It is of the operation of these foreign quarantines that I wish to speak particularly today. They have been the subject of much misunderstanding and much misrepresentation. This has confused the minds of nurserymen everywhere. I wish to present to you the actual facts. I am sure that these facts will then speak for themselves.

The plant quarantine act itself provided for the regulation of the importation of foreign plants. Immediately after the plant quarantine act became effective in 1912, rules governing such importations were established by the secretary. They were based upon the then current theory that, in the main, undesirable diseases and insects could be excluded by requiring the inspection and certification abroad of imported stock by the officials of the country of origin and by the reinspection of the stock at its destination in America. Where certain outstanding diseases or insects were known to exist, such as the white pine blister rust, the potato wart, the citrus canker, the avocado weevil, and the pink bollworm of cotton special quarantine orders were issued placing greater restrictions on the importation of these plants and throwing greater safeguards around such plants as were admitted to entry.

Seven years of experience with this system showed very clearly that foreign inspection and certification does not remove the risk. During these seven years infested shipments, all certified as clean, were detected as follows: From Holland, 1051 infested shipments with 148 kinds of insect pests; from Belgium 1,306 infested shipments with 64 kinds of insect pests; from France 347 infested shipments with 89 kinds of insect pests; from England 154 infested shipments with 62 kinds of insect pests; from Japan 291 infested shipments with 108 kinds of insect pests; from Germany 12 infested shipments with 15 kinds of insect pests.

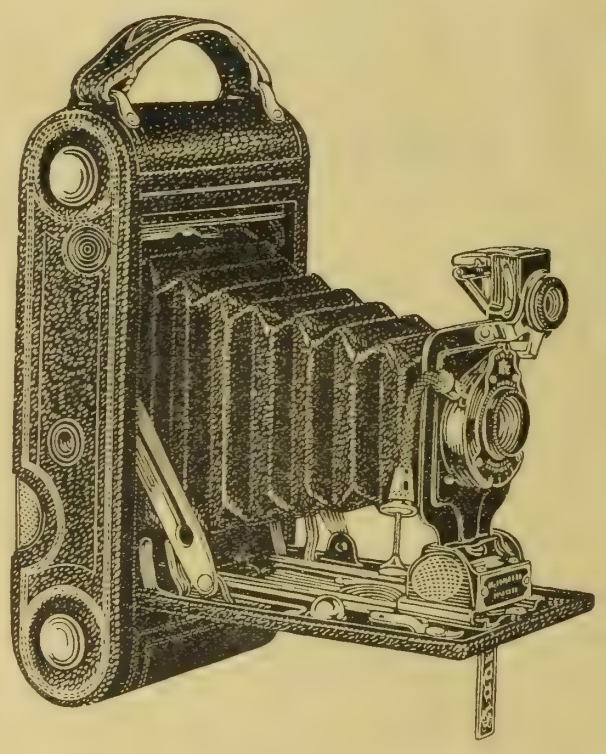
The gipsy and brown tail moths, for example, have been found in 67 shipments of 16 different kinds of plants.

It also became clear as we gained inspection experience that no inspection, however perfect, can detect all pests. The white pine blister rust, for example, has been known to be dormant, invisible in the tissues of a white pine for more than ten years after the pine was infected in the nursery. The bacteria which cause citrus canker may be carried unseen on the surface of apparently healthy twigs, leaves or fruit.

It was also evident that no method of disinfection could be depended upon to clean all imported plants. Valuable as cyanide fumigation is in many cases, corn borer larvae in broom corn from Italy have survived the gas from 12 ounces of sodium cyanide per 100 cubic feet after about 60 hours of exposure by the vacuum process. Hydrocyanic acid gas applied by the vacuum method has failed to kill the Oriental fruit worm which reached the eastern United States in Japanese flowering cherries and is now passing over to the American peaches.

No fumigant is known, nor is it likely that one ever will be known, which will kill a disease producing fungus when it lies buried in the tissues of the

For the Farm



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The No. 1 Kodak Junior makes pictures 2¼x3¼ inches, has carefully tested lens and shutter with adjustable speeds of 1/25 and 1/50 of a second, as well as time and bulb action, and is autographic—you can write it on the film at the time.

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host plant unless the fumigant is so powerful as to kill the plant also.

While American agriculture is already laboring under a heavy load of pests of foreign origin, by no means all of the foreign diseases and insect pests are present as yet in this country. The terrible downy mildew of corn of the Orient is not here. The Fiji disease of sugar cane has not reached us. There are seven diseases which the American apple has caught from its wild relatives in Hokkaido, the northermost island of Japan, which are not yet in America.

A partial compilation of the known dangerous foreign insects published a few years ago by the bureau of entomology lists 3,000. In the office of foreign plant quarantines we have begun a card catalog of references to foreign plant diseases. We have now 152 drawers of cards with an average of 8 inches of cards to each drawer and we are only well started.

Many parts of the world are not yet botanically and entomologically explored, and no one can anticipate what diseases and insects will come from them.

No one knew that citrus canker existed in the Philippines, Java, or the Malay states till we intercepted it in material seeking entrance at the port of San Francisco. The worst infected lot of this material was destined for Riverside. The eradication of citrus canker and the losses from that disease in the Gulf states have cost the United States government, the states, and the growers not less than $13,000,000. How much would the disease cost California if it succeeded in gaining entrance? No one knows and we are not going to let any one find out if we can help it.

Since experience showed that foreign inspection and certification supplemented by inspection at destination was not a sufficient safeguard, in 1919 a new system of regulation was promulgated in the provisions of Quarantine 37.

This quarantine was the result of seven years inspection experience, of years of study, of numerous hearings, and of the concentrated effort of many minds both within and outside the department of agriculture.

Quarantine 37 greatly restricts the importation of plants into the United States but does not absolutely prohibit the importation of any plant. It is not as drastic as the laws of Holland, Germany, and France which have been in force against the United States for a number of years.

The much talked of "Chinese wall" so vociferously proclaimed is a creature of the imagination of men who do not understand the quarantine, and sometimes of interested parties who do not care to understand the quarantine.

Quarantine 37 does endeavor to reduce importation to its lowest terms and to the safest form. The production of plants in America will eliminate much of the movement to this country of foreign pests. The quarantine does put a stop to the use of the United States as a dumping ground where foreign culls can be auctioned and bases importation upon the needs and the safeguarding of American plant production. But it provides methods surrounded by such safeguards as are required for the development in America of American stock of any variety which America does not already have.

Based upon a broad survey of the horticultural field by plant experts within and outside the department, the quarantine divides plants and plant products into various classes predicated upon American needs and the dangers involved. In every case it is intended that an imported plant shall be introduced into America in the safest possible form.

Entry without restriction is permitted for field, vegetable and flower seeds and certain plant materials imported for food, medicinal or manufacturing purposes.

Entry under the former procedure of foreign inspection and certification and reinspection here is provided for certain bulbs, fruit stocks, cuttings, scions and buds, rose stocks, nuts and certain seeds.

Entry in limited quantities and under special safeguards of other plants not specified above is authorized for the purpose of keeping the country supplied with new varieties and necessary propagating stock unless the plants are covered by special quarantines.

Entry of plants covered by special quarantines is limited to the United States department of agriculture and such material as the country needs of citrus, sugar cane, cotton, etc., is introduced by the the department and grown under special quarantine safeguards till freedom from pests is assured.

The importation of new or unavailable varieties for propagation is perhaps the phrase of this quarantine which most interests you as California nurserymen. Responding to the needs of the country you have rapidly increased your stocks of plants and have gone heavily into the production business. Therefore you are interested in the new varieties of your particular specialty as they appear abroad.

To import such new varieties you should proceed as follows:

You can secure application blanks either from Washinbton, D .C., or from W. S. Fields, Room 8, Ferry Building, San Francisco.

List in detail in your application the varieties which you wish to import and furnish the other information called for, sign the agreement and send the application to Federal Horticultural Board, Washington, D. C.

When you receive your permit, order the goods. Instruct the foreign shipper to wash the roots free from earth, to have the plants inspected and certified by his foreign inspection service and to ship the plants to Federal Horticultural Board, Washington, D. C. for inspection. Material from the Orient for Pacific Coast destinations will be inspected at San Francisco.

Execute and return promptly to the board the bond which is sent you with the permit.

When the plants reach Washington or San Francisco they will be inspected and shipped promptly to you. Use them as you have agreed for propagation purposes and grow the stock in such a way as to maintain its identity for the period of the bond.

By your agreemnt with the board you are at liberty to sell at any time the increase which you produce from the imported plants.

During the 2 1/3 years which this quarantine has been in effect, American horticulture has largely passed through the transition period and plant production is now in progress in America on a large scale. For the first two years of the quarantine the board was liberal in its policy in regard to the importation of unavailable varieties. Nurserymen who regarded the quarantine seriously imported propagating stock and have now established themselves in the business of propagation. Since most of the older varieties have now become available in the United States in quantities sufficient for propagation purposes importations in the future will more and more be reduced to such valuable new varieties as are produced abroad.

During the two and one-half years from June 1, 1919, to October 1, 1921, 1,065 special permits have been issued authorizing the importation of 26,532,108 plants. Of these importations have been made under 618 permits amounting to 10,412,985 plants.

During the first two years of the quarantine the names of 9900 different varieties of plants were submited to us in applications for permits. The consideration of these applications entails a vast amount of work. Each variety is submitted to the experts of the bureau of plant industry for advice as to its availability in America. Frequent requests are received for plants already available here in large quantities with assurances that they are not in the country. Every case is a special case. It receives as fair and impartial consideration as we can give it. No influence and no pressure is of any avail. We play no favorites. We try to be fair and treat everyone alike. We are enforcing an important law and we realize the responsibility.

But while it is important, Quarantine 37 is not the only federal foreign plant quarantine.

During the last year 221,303 bales of foreign cotton entered the United States under permit, were fumigated

Implement Prices Down

OUR 1922 reduced prices on farm machines have just been issued and are effective immediately. They apply on practically our entire line of International Harvester grain, hay, and corn harvesting machines, plows, tillage implements, seeding machines, etc.

In determining these prices, the Company has made a careful study of market and labor conditions and has based the price reductions on the lowest possible raw material and production costs that can, under most favorable conditions, be forecast for the season of 1922.

At the new prices, a grain binder can be bought for $50 to $60 less than the price of Jan. 1st, 1921; and other reductions are in proportion.

At these prices no farmer can afford to postpone the purchase of needed machines, especially if his present equipment will not stand up under the work of another planting and harvest.

An old corn planter may crack enough kernels and miss enough hills to make its use mighty expensive. A new planter will save much of its cost the first season. The same is true of a drill. Your old binder may lose grain enough in one harvest to make a substantial payment on a new machine. The new machine will go on for many years, saving a large amount for you each year.

Economy consists not in getting along with worn-out machines *but in farming with efficient machines.*

You will of course continue with that part of your present equipment which is in good order and satisfactory. But it is good judgment now as always to abandon those machines which are really worn-out. Where repairs have been made again and again, beyond the point of serviceability, waste and loss are pretty sure to follow. Present prices will enable you to replace the old with efficient, modern machines. As Mr. J. R. Howard, President of the American Farm Bureau Federation, has said, "The farmer who needs additional machinery and equipment pays for it whether he buys it or not."

If you are at present interested in learning some of the new prices, or in looking over any individual machine, the International Dealer in your vicinity is at your service.

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92 Branch Houses and 15,000 Dealers in the United States

Insure Your Fruit Crop Now by Spraying

California Peach Blight, curl leaf and other diseases take this time of the year to get a good start on deciduous trees. But they are forced to quit before their attack is fairly under way when they find an orchard in which the owner had the foresight to

SPRAY WITH

Orchard Brand

B. T. S. (dry barium sulphur) 40-50 lbs.
or Bordeaux Paste 36-40 lbs.
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If the scale insects are present, or if more sticking qualities or penetration are desired, add Miscible Oil and Glue to the above formula, as outlined in our Deciduous Bulletin.

Universal Brand

Dormant Soluble Oil 12-15 gals.
Crude Oil Emulsion 20-25 gals.
If scale insects alone are present.

Fruit buds and fruiting woods will be seriously handicapped later on unless you give them their chance now. And they haven't got a chance if injurious diseases are allowed to take hold during the rainy season.

Our Bordeaux sprays, made from the highest grade materials and combined by chemical processes, are standard. Their uniform composition gives the greatest efficiency. In the end, they are less expensive than home-made mixtures.

Our expert entomologist, Paul R. Jones, will gladly solve your spraying problems. Send today for your free copy of his latest bulletin on deciduous spraying.

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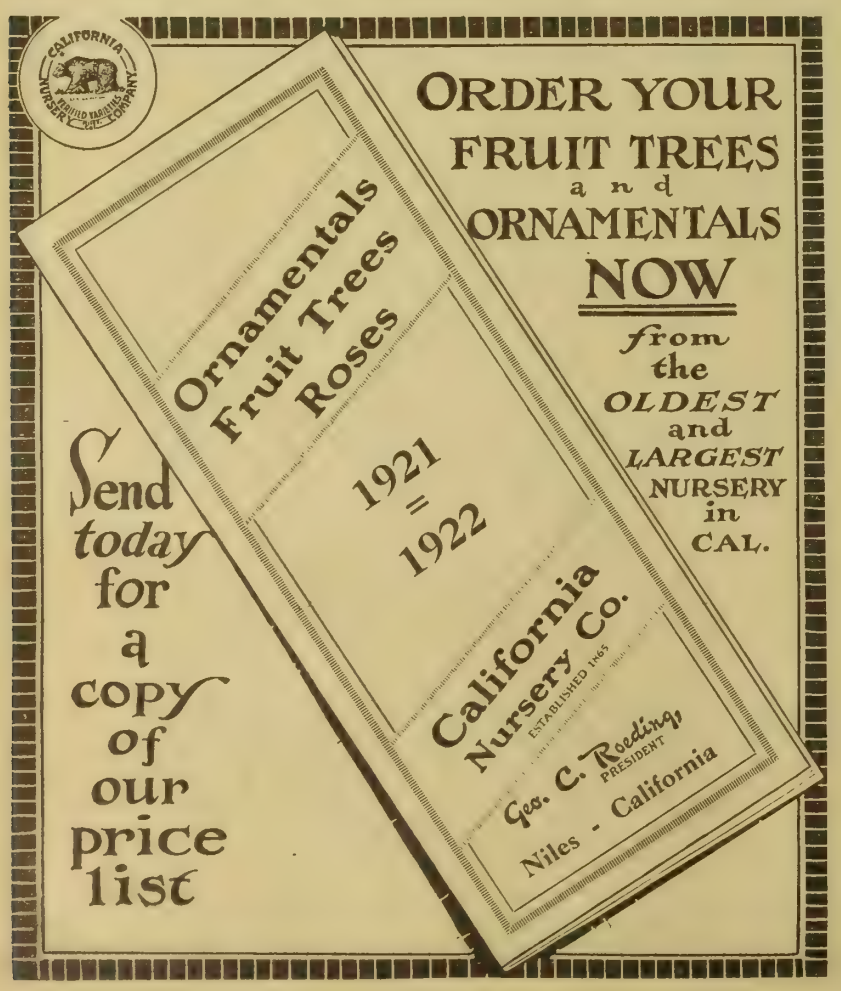
Balfour Building



and are being traced in their movement in the United States till they are manufactured. During 1920, 595,765 bales were thus imported.

During last year, 191,968,882 bulbs of the unrestricted sorts were imported and inspected, 21,276,995 fruit stocks, cuttings, scions, and buds and 5,934,192 rose stocks were imported.

20,656 boxes of oriental oranges, 2,628 tons of Manchurian corn, 1,142 bags of oriental wheat, and 154,635 bushels of Danish and Mexican potatoes were imported under the restrictions of special quarantines, were inspected and received such treatments as are prescribed by the respective quarantines.

The board maintains inspectors of its own or has state men appointed as collaborators at 27 maritime and border ports. On the Mexican border it maintains an inspection of cars, freight and personal baggage and fumigates the cars and freight which cross the border into the United States east of the mountains. During the first 19 months of the operation of the fumigation houses 35,420 cars were inspected. These would make a train 302 miles long. Of these 18,070 were fumigated—a train 154 miles long. For this fumigation about 75 tons of sodium cyanide and 200 tons of sulphuric acid were used. The fumigation houses were constructed and are operated by the board. The largest houses will hold 15 freight cars at one time.

I have given you a few of the facts in regard to the protection which the department is giving you plant growers against foreign pests. I have not mentioned the domestic side of the work, the eradication of the pink bollworm of cotton from Texas, Louisiana and New Mexico, the control of the gipsy and brown tail moth in New England and New Jersey, the potato wart fight in Pennsylvania, Maryland and West Virginia, the Japanese beetle work in New Jersey and Pennsylvania, the corn borer quarantine in New England and New York nor the effort to hold the white pine blister rust out of your western states. Each of these would make another story and some of them very large stories indeed. I commend to your perusal an article by Dr. C. L. Marlatt in the August, 1921, number of the National Geographic Magazine where the work of the board is set forth clearly both by pictures and text.

Is it all worth while? Shall we all cooperate to protect American agriculture against its foreign foes? Will you nurserymen do your share? Will you grow in America the plants which America needs? We can not go back to the old days. We can not again admit freely the diseases of the foreign lands and jeopardize our food supply, our forest trees and the ornamentals which we are growing here. It does not require European magic to propagate a plant. It may have taken years for Europeans to learn how to grow plants, but we will learn the business in a briefer time. It took Europe longer to produce an army than it did America. Surely it is patriotic and sensible to raise an army of plant protectors and plant propagators and thus guard our crops against their foreign agricultural foes.

November in the Ornamental Garden

Northern California

By A. R. Gould

THERE has quite recently been a great revival in garden development and business is now getting brisk. Seedsmen and nurserymen are booking orders for the planting season and garden owners are planning extensive improvements. Everywhere there appears a keen interest to learn something about plants and their culture, and this is most encouraging as it means that there will be many lovely gardens and some beautiful cities.

This is the most opportune time to make all plans for the season as most trees and shrubs may be safely moved if proper methods are used.

Roses

These will need attention at this time as the bugs are busy, especially the aphis, and prompt measures should be taken by spraying with "Black Leaf 40." It will also be advisable to replant any vacancies with young stock. Some of the new varieties should be added to the rose garden. Of these Lolita Armour, Iona Herdman and Los Angeles are worthy of recognition, and other excellent varieties are Hadley, Lilian Moore, E. Herriot, Columbia, Golden Emblem and Autumn Tints. Climbing roses should be given attention. The season's growth should be tied in and dead wood or weak growth removed. Bush roses will also need pruning and the ground should be well dug and manured.

Iris

No garden is complete without the iris and although there are now a considerable number of varieties and it would require much space to have a representative collection a few of the best hardy types should be secured and planted now.

Begonias and Dahlias

Tubers of these should be dug and stored in a dry shed or cellar for the winter.

Spring Flowers

Now is the time to prepare for the spring display, and the following planted now will give successional bloom: Bulbs, daffodils, crocus, snowdrops, hyacinths, tulips, anemones, ranunculus, primulas, violas, wallflowers, pansies, for-get-me-nots and winter flowering stocks. Seeds of California wildflowers may be sown broadcast on well cultivated soil.

Perennials

Nothing is more satisfactory for the border than salvias, Sweet Williams, scabious, delphininms, dianthus, campanulas, gaillardias, heuchera sanguinea, columbines, geums, veronicas. Hollyhocks and foxgloves may also be used to give the border that old fashioned look.

Sweet Peas

These, if sown as advised last month in well prepared trenches, should be making good progress and the leading shoots should be pinched to encourage strong growths which may be limited to three or four. There is still time to sow for succession.

Early Flowering Gladiolus

This useful race is valuable as a cut flower and the bulbs may be planted now in well manured soil. Good varieties are Peach Blossom and the Bride.

Lawns

These may now be renovated by sowing in the bare patches, and neglected lawns should be turned under and entirely resown with clear fresh seed.

Southern California

By Ernest Braunton

NOW that some parts of the south have received heavy rains, and all parts some rain, gardening operations in general must be taken up. For weeds will grow, dormant bulbs will send up flower and leaf spikes and the weather is still warm enough so that under the combined stimulus of heat and moisture all plant life will become active. Wherefore we should become active in the garden.

Though bulbs of many sorts have been planted in September and October, and others will be planted up to and in the beginning of the new year, there is no month when so many can be planted with assurance of success as in November, for this month is the last one for planting early bulbs and the first for winter or spring bulbs. Any and all except the tropicals, which are held for April planting, may be put in the soil now.

Seed sowing is in the same happy medium of time as bulb planting and may be indulged in freely—except of sorts likely to be injured by frosts or those of such tropical requirements that seeds will not germinate because of low soil temperature. Some special sowing should be urged as of excep-

tional value at the present time. Sow seeds of native wild flowers, either in mixture or in separate kinds, which may be procured from any seed dealer and should go in at once. Another timely planting is of sweet peas; later sowings will bring lesser results.

Aside from bulb and seed propagation, nurserymen, gardeners and amateurs are busy growing from cuttings or slips. A box of clean sharp sand, with holes in bottom for drainage, is the main item of equipment necessary. Bottom or artificial heat is not necessary. One must watch sharply, however, to see that sand does not become too dry. Also avoid too great saturation, most of all stagnation, for if the latter results, rot or damping off will surely claim the cuttings. Alternanthera (border plants), begonia, coleus, fuchsia, heliotrope, Marguerite and penstemon are some of the sorts from which cuttings can be taken.

Perennial flower roots may be freely planted now and cutting back of old tops will bring new flowering growth. This method will not do for heliotropes for the new growth is too tender to withstand the frosts that surely will come. Fuchsias are best left until March, for they are but half hardy. But hardy plants, such as penstemons, are best cut back now to within six or eight inches of the ground and new tops will bring new flowers. Mulch violets, carnations and other winter flowering plants; they need food now.

The rose garden should be well fertilized and the fertilizer dug into the soil. Do not prune rose bushes now except to take out weak spindly growths, but give food and water freely.

It is too early for lawn fertilizing unless in dire need. If so, fertilize lightly and reserve main food supply until heavy rains no longer endanger its being washed away by flooding or run-off, or carried below root zone by saturation and percolation.

November in the Vegetable Garden

Southern Arizona

By M. E. Bemis

Cooler weather makes germination more sure but slower. It narrows a little the list of plantable things, but most of the things planted for October, such as beets, carrots, lettuce, onion sets, parsley, parsnips, late peas, radishes, spinach, turnips, and cabbage and cauliflower plants may be planted. Cool nights and mornings will make growth slower but warm days keep the ground from becoming very cool for some time yet.

There is some consolation in that weed growth is less for the next two months or more. Cultivation should not by any means be discontinued.

Preparation for strawberries to be planted in December, or fruit trees or grapes to be put out in January may be well made in November. Thorough plowing and harrowing for any future plantings are always in order.

Northern California

By A. R. Gould

THE recent rains have been of great assistance and will enable us to get the ground into shape for the coming season. Deep trenching is essential to success in vegetable culture, and the same remark applies to manure, barnyard manure being preferred. We have also frequently urged a system of rotational cropping and would once more repeat that this consistently pursued brings good results. On stiff and heavy soils apply lime, while decaying vegetable matter dug in will also help. It will also be a good plan to apply wood ashes to the onion plot, in fact a light dressing will do no harm to any of the plots as potash is an important element. If you notice any extra good types among the beans, peas, squash, tomatoes or melons, seed should be saved and sown for next season. This is also a good time to study the seed lists to order the supply for the season.

Onions

Best results are only secured on a rich, fairly sandy soil. They delight in nitrogen and humus, and it is a good plan to sow them on the plot previously used for beans or peas. The surface soil must be well pulverized before the seeds are sown. Early varieties such as Early Red Bermuda, White Bermuda and Early Pearl may now be sown in rows 20 inches apart. Onion sets may also be planted three inches apart in rows two feet apart.

Peas

Sow the early varieties, Little Marvel, Blue Bantam, and Laxtonian, all dwarf types. Sow thinly in rows at least two feet apart. Main crop varieties may be sown later but this plot may be well prepared this month.

Beans

The Broad Windsor is the hardy bean and of very fine flavor and deserves to be more widely grown. Make a sowing now in rows, very thinly spacing the rows two feet apart.

Radish

Winter varieties, Black Spanish and Rose Winter, should be sown in rows 18 inches apart. Thin out later to four inches apart.

Beets

Sow Early Egyptian and Detroit Dark Red very thinly in rows 20 inches apart. This will prove a valuable winter crop. All matured beets should be dug and stored.

Parsley

Sow Moss Curled in rows 18 inches apart.

Lettuce

Sow Los Angeles and White Paris Cos in rows very thinly. Keep well cultivated and moist.

Cabbage

This crop requires a rich heavy soil and is excellent for winter. Plant strong sturdy plants of Autumn King, Large Flat Dutch and Savoy 12 inches apart in rows two feet apart.

Parsnips

Sow Hollow Crown in rows on a deep rich soil two feet apart. They require a long period of growth.

Herbs

Thyme, mint and chives may be subdivided and then planted 18 inches apart. Plants of rosemary and marjoram may also be added to the herb plot.

Asparagus and Rhubarb

These two very important crops should be liberally manured and new plots prepared for planting with new stock later. There is little use in keeping old plants of asparagus after they are three years old. Young plants give best results.

Berries

Strawberries and raspberries may be planted this month on plots which have been well manured. Raspberries should be spaced two feet apart in the row and strawberries 18 inches.

Local farm bureau meetings will be held in Kern County at Weed Patch, November 7; McFarland, 11; Delano, 14; Old River, 15; Wasco, 16; Rio Bravo, 17; Edison-Fairfax, 18; Pond, 23; Inyo-Kern, 24; Rosedale, 25; Shafter, 28; Arvin, December 2; directors, Bakersfield, 3.

SAVE SWEET POTATO SEED STOCK

Selection of the sweet potato seed stock at digging time permits choice of potatoes that are true to variety and from high yielding hills and tends to build up heavy yielding strains, experiments by the United States department of agriculture have shown. Seed free from stem rot can be secured at digging time while the potatoes are still attached to the vines. Each hill should be tested by splitting the stem, and potatoes should be taken for seed only from plants the insides of whose stems are not streaked with black, though it should be remembered that a heavy frost will also produce a similar appearance.

The fall selection is necessary owing to the fact that in the spring or during the winter it is difficult, and frequently impossible, to tell whether the roots are diseased or not, since after a period in storage the bundles (the tissues traversing the tubers) of healthy sweet potatoes often become somewhat darkened, even though the fungus is not present. It is not necessary to retain the large potatoes from the desired plants for seed, as the medium-sized ones—those from 1 to 2 inches in diameter and from 3 to 6 inches long are better for seed purposes.

The seed stock should be gathered in crates or hampers, marked to show the variety, transported to the storage house on a spring wagon, and placed in a part of the house where they will not come in contact with the general stock. In other respects the treatment should be the same as that given the commercial crop—that is, it should be cured for a period of from 10 to 12 days, at a temperature of about 85 degrees, after which the temperature should be reduced to about 55 degrees and held there for the storage period.

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Capacity Gals.	Capacity Bbls. 42 Gals.	Outside Dimensions Diameter ft.	Diameter in.	Height ft.	Height in.	Shipping Wt. Lbs.	Price
500	12	5	5	3	11	440	$ 24.00
750	18	5	9	4	11	580	30.75
1,000	24	6	6	4	11	655	35.25
1,500	36	7	1	5	11	830	45.00
2,000	48	8	1½	5	11	975	52.50
2,500	60	8	4	6	11	1,145	60.75
3,000	71	9	1½	6	11	1,270	69.00
3,000	71	8	5	7	11	1,290	69.00
4,000	95	9	10½	7	11	1,555	87.00
4,000	95	9	2½	8	11	1,580	87.00
5,000	119	10	11	7	11	1,745	98.25
5,000	119	10	3½	8	11	1,790	98.25
6,000	143	11	4	8	11	2,010	111.00
7,000	166	12	1½	8	11	2,160	118.50
8,000	190	12	3	9	11	2,375	130.50
10,000	238	13	7½	9	11	2,770	150.00

Made from 3-Inch Clear Air-dried Redwood

Capacity Gals.	Capacity Bbls. 42 Gals.	Outside Dimensions Diameter ft.	Diameter in.	Height ft.	Height in.	Shipping Wt. Lbs.	Price
10,000	238	13	10½	9	11	4,660	$ 225.00
12,000	285	13	10½	11	11	5,370	258.75
15,000	357	15	6	11	11	6,080	303.75
20,000	476	17	10	11	11	7,280	352.50
25,000	593	18	4	13	11	8,510	412.50
30,000	714	20	2½	13	11	9,800	465.00
40,000	952	23	0	13	11	11,300	557.25
50,000	1190	24	0	15	11	13,400	675.00
60,000	1428	26	3	15	11	15,100	742.50
70,000	1666	28	4	15	11	16,700	843.75
80,000	1904	30	3	15	11	18,000	922.50
90,000	2142	30	2	17	11	19,800	1005.00
100,000	2380	30	0	19	11	21,100	1102.50

We will allow 5 per cent discount for cash with order, or 2 per cent discount for cash in 10 days from date of invoice.

All prices are for tanks complete, ready to erect, K. D., F. O. B., Piftsburg, Cal. The above tanks are standard sizes. We design and manufacture tanks of all sizes up to 650,000 gallons capacity and tanks of special shapes to meet all requirements.

Complete instructions for erection accompany each tank. If erected according to these instructions, we will guarantee a water-tight tank.

Made from clear, air-dried redwood, banded with round steel hoops fitted with upset threads.

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Los Angeles Office: 308 East Third Street

Legal Queries

Louis B. Stanton, attorney, 343 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 317 Central Ave., Los Angeles.

License to Sell Plants

Does the law require a license to sell strawberries or other plants in the neighborhood or county?—Subscriber, San Diego.

It is provided by Section 2319i of the Political Code that any nurseryman, agent, jobber, person, firm or corporation operating in California who ships, sells or handles nursery stock, trees, plants, shrubs or vines which are for planting or propagation purposes within the borders of the state shall register with the commissioner of the state department of horticulture (now director of state department of agriculture), and pay one dollar for such period of registration of one year. There shall be issued to the applicant a special number. It shall be unlawful to ship or to deliver within the state of California any package or other container or shipment of nursery stock, trees, plants, shrubs or vines for planting or propagation purposes within this state, which does not bear such special number in a conspicuous manner or place. Any agent in the employ of a nurseryman to whom such license has been issued shall at all times use the license number of his principal. Any person who violates the provisions or refuses to comply with any order made by the commissioner of horticulture by whom such license is granted shall be guilty of a misdemeanor.

American Born Japanese

Is a Japanese who is born in this state a citizen of the United States? Can such Japanese rent land for farm purposes in California?—Subscriber, Inglewood.

The fourteenth amendment to the Constitution of the United States provides that all persons born or naturalized in the United States and subject to the jurisdiction thereof are citizens of the United States and of the state wherein they reside. No state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States, deprive any person of life, liberty or property or deny to any person within its jurisdiction the equal protection of the laws. It is thus clear that any person born in this country whose parents were Japanese is an American citizen and is entitled to exactly all the privileges, including the right to purchase or lease land, which any other citizen may have or possess, and no state can take away or abridge such privileges.

Title to Homestead

A father willed 80 acres of land to his son, who worked it for a few years but thereafter abandoned it. Another son redeemed delinquent taxes on the land, has continued to pay subsequent accruing taxes and has occupied the land for 20 years. Can this son now legally hold the land as his own?—Subscriber, Sunol.

The mere redemption payment of taxes gives little or no right to the land, but if the son has complied with the requirements of the law concerning adverse possession he has undoubtedly acquired the right to this land. To entitle a party to gain title to land on adverse possession where he claims title thereto but where his title is not founded upon any written instrument, he must have protected the land by a substantial enclosure and cultivated and improved the land in the usual manner. Adverse possession is established only in case the land has been thus occupied and claimed for a period of five years continuously and all taxes paid, both state, county and municipal, which have been levied or assessed upon such land during period. A party who has complied with all these provisions becomes entitled to have his right established. In order to establish it, however, it is necessary for him to bring an action in the superior court against all parties having any claims in or to the land and obtain a judgment of the court. Otherwise there is nothing of record to show his title or right.

Home Brew

Is it legal for persons to make for their own use home brew containing more than one-half of one per cent alcohol?—Subscriber, San Luis Obispo.

It has appeared from past administrative and legislative procedure that the revenue department or prohibition enforcement officers would not and would not be permitted to search private homes for wines or beers manufactured for the use of the occupant. This seems to be rather a refraining upon the part of the government from enforcing the provisions of the 18th amendment rather than any legalizing of the manufacture. The amendment specifically provides that the manufacture, sale or transportation of intoxicating liquors for beverage purposes within the United States and within all territory subject to the jurisdiction thereof is prohibited. It is apparently one of those cases where the act, although illegal, may be winked at by the officers charged with its enforcement.

Queries

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Sudan With Barley

In your issue of October 22 a Chino subscriber asks about the planting of a grass with barley or oats for hay. I have been successful with Sudan sown with barley in getting all summer pasture of the Sudan, or it can be cut about three times. This year I disked in the Sudan after the rains in May had ruined my barley in the shocks, on the 30th to be exact. I pastured four goats on these two lots ten days before the 15th of July, 20 days more by August 15, and it is now from one to five feet high on the field. Parts pastured the closest are in the greenest condition now. I got some water to these lots with a garden hose in August. To plant with barley sow barley lightly, plow under. Harrow or drill in Sudan, using plenty of seed. Plant in February or March or as late as you feel safe to get a crop of barley in your section.—Subscriber, Venice.

Profitable Table Grape

What table grape would be most profitable this year and would it do well in Turlock? Does the Malaga make a profitable raisin in case of poor fresh market? — Subscriber, Denair.

It is impossible to tell which table grape has been most profitable this year. Information of this sort can only be gotten by averaging returns by varieties of all sales in the different markets for the season. The Malaga grape is primarily a table variety. It does, however, make a creditable raisin if allowed to ripen properly before picking. Returns for such raisins will probably not be as great as for the regular raisin varieties.—F. K. H.

What Kind of Grape?

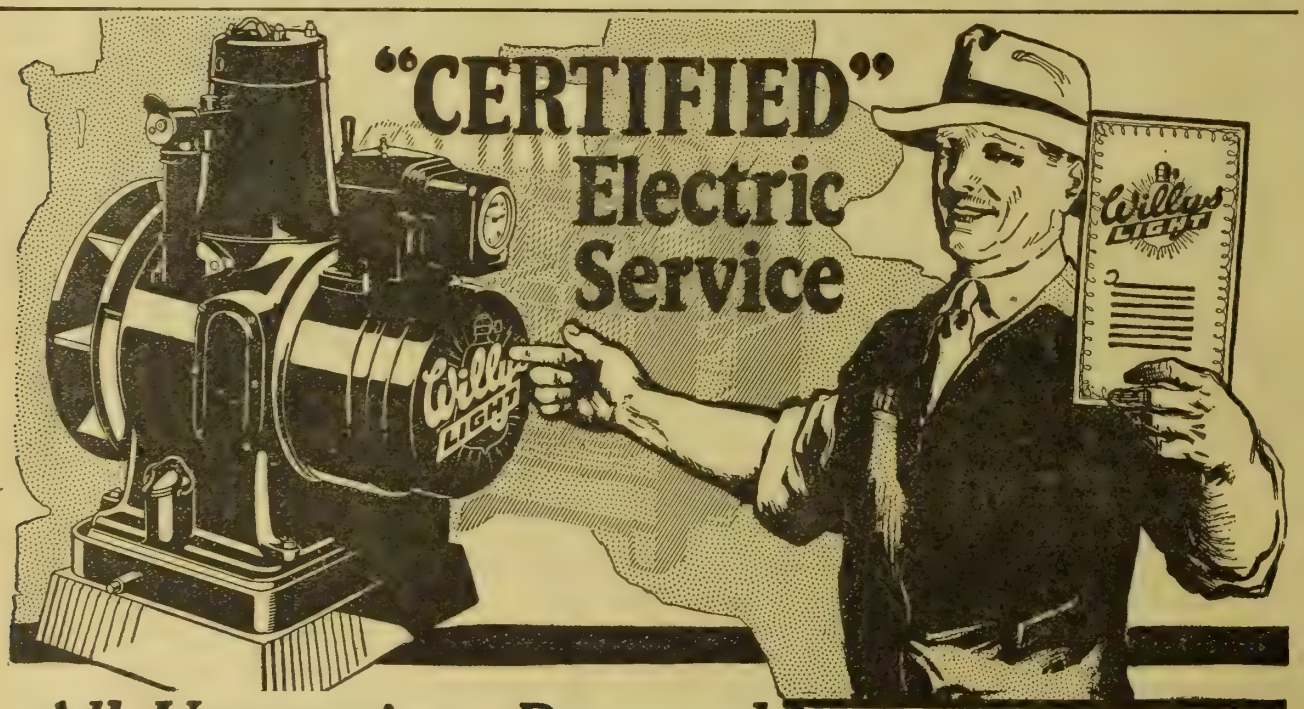
What kind of grapes would be best to plant on a piece of land that has hard and heavy soil? My neighbors thought Emperor grapes would do well on such soil. There is also some alkali in this soil. — Subscriber, Turlock.

Our advice would be to go slow with any grape planting on hard heavy soils containing alkali. Why not try out a few vines of small standard varieties or, better still, look around your district and see if there are any successful plantings on this kind of soil?—F. K. H.

Grapes at Spadra

We are thinking of setting out about 75 acres to grapes. What kind would you suggest as a good seller? Can you tell me cost per vine and distance apart for planting? — Subscriber, Spadra.

Would suggest a colored table grape of some sort or, better still, divide your planting in such a way that you have some white and some colored varieties ripening at intervals throughout the season for local markets and also some for eastern shipment. A good nursery catalogue will give a description of many varieties which could be used for these purposes.—F. K. H.



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You can take the word of these men who know. We will gladly give you their names—men from your own state—perhaps your neighbors, or within driving distance.

Why not find out what WILLYS LIGHT Certified Electric Service actually guarantees in the way of dependable advantage and profit for your home? Why not get free estimate of complete cost for plant and installation?

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See this seed at your dealer's store. He can supply you. He sells it because he knows we stand back of it.

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ESTIMATES OF CORN ACREAGE DO NOT DIFFER WIDELY

Numerous inquiries have been received by the United States department of agriculture calling attention to statements contained in a recent advertisement appearing in several newspapers attacking the accuracy of the department's estimates on the corn crop. The advertisement charges that the present price of corn is being depressed by the alleged overstatement by the department of the corn acreage and production of 1919, 1920 and 1921 as compared with the preliminary figures as reported by the bureau of the census for 1919.

The author of the attack assumes that the 87,667,000 acres which the census reports for corn in 1919 are comparable with the 100,072,000 acres reported by the bureau of crop estimates of the department for the same year. He also assumes that the census figures are correct and that the estimate of the department is incorrect. Both assumptions are wrong. The census report of corn acreage for 1919 is not comparable either with the census figures for corn acreage for 1909 or with the corn acreage estimated by the department for 1919.

The census figures for 1909 included the "total acreage planted to corn." The census figures for corn acreage for 1919 are divided into different sections of the schedule to show acres of corn harvested for different purposes. Assuming without argument that both sets of census figures are correct, to make the figures for both years more nearly comparable it is necessary to combine the corn acreages harvested for different purposes, as reported by the census of 1919, as follows:

Corn harvested for grain, 87,666,910 acres.

Corn cut for silage, 4,006,436 acres.

Corn cut for forage and fodder, 14,499,418 acres.

Corn hogged down or grazed (estimated, census report not yet available), 5,000,000 acres.

Census total corn acreage for 1919, 111,172,764 acres.

Department of agriculture's estimate of total corn acreage for 1919, 100,072,000 acres.

Department of agriculture's underestimate as compared with the census, 11,100,764 acres.

This apparent underestimate, instead of an overestimate as charged in the advertisement, is probably to be accounted for by the duplication involved in the item "Corn cut for forage and fodder," and the different interpretations placed upon the census questions by enumerators and farmers. If this duplication were eliminated, it is probable that the two sets of figures would be almost identical.

FREIGHT CHARGES

The weekly news letter of the American Farm Bureau Federation reviews the freight rate situation as it affects grain growers. It quotes President Howard of the federation in his presentation of the matter to the interstate commerce commission:

"The price which the farmers receive on their commodites is fixed not by them, but at some point where the surplus accumulates or where the world's surplus is dealt in, such as Liverpool for grain and Boston for wool. The farmer does not receive the price at these big distributing points. What he obtains is the distributing point price minus the cost of freight from his local station minus the commissions for handling the products. Any increase or decrease in the cost of transportation is reflected directly by an increase or decrease in the amount of money which the farmer receives. In addition to paying freight on the commodities which he produces he also bears the freight charge on the great amount of products which he consumes or uses in producing crops.

"Excessive railroad rates are largely responsible for the dilemma in which agriculture finds itself. The present cost of production and the high transportation rates will cause the farmers to produce fewer crops next year. Even with conditions as they are at present in many parts of the west farms will not be operated next year and a still greater acreage will be seeded to grass."

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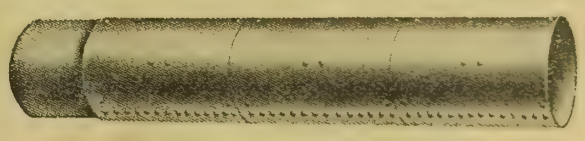

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Value of Bean Straw as Fertilizer

REFERRING to article by A. D. Shamel in the Cultivator of September 17, "Furrow Manure Distribution in Citrus Orchards," Grinnell Burt, president of the Northern California Olive Corporation at Palermo, Butte County, writes:

"May we trouble you to answer one further question as follows: Without taking into consideration the cost of chopping up bean straw, what is the relative fertilizing value per ton and availability of bean straw as compared with average cow manure? Manure is getting very scarce in this part of the country, average cost alongside orchard about $5 per ton. Bean straw could be hauled for less money and there is a considerable quantity available.

"Perhaps you would be interested in the description of a V-shape drag used by us with great success in covering the manure in the furrows, although no doubt other orchardists have invented the same implement. First of all a timber 14 inches by 14 inches by 10 feet long is planed off to a taper bottom at the hitch. Then the V drag is nailed on same (well braced) and made of 4 inch by 10 inch by 8 foot material. The large timber keeps the drag from meandering, also presses and holds down the manure in the furrow until it is completely covered."

Mr. Shamel writes:

"Bean straw does not ordinarily need to be chopped for distribution in the orchard furrows. Alfalfa hay, on the other hand, can usually be best distributed after chopping except where the hay has been secured from alfalfa seed fields. In these cases the hay from the seed thresher is so finely broken during the process of threshing that chopping is unnecessary.

"It is impossible to make a general statement as to the comparative value of bean straw and cow manure. This condition arises on account of the variability in composition of different kinds of bean straw and particularly the extreme variability in composition of stable manures.

"As a rule bean straw possesses a somewhat higher nitrogen content and is less variable in composition than is the case with stable manure. For this reason I am of the opinion that bean straw is more valuable as a rule for use as a fertilizer in citrus orchards than an equal amount of stable manure.

"With regard to the comparative plant food availability of bean straw and stable manure it can be said that this question cannot be answered in general terms. If the stable manure is from horse corrals and contains a considerable proportion of barley straw it is likely that the availability of the elements of plant food in it will be slower than that of bean straw. On the other hand, if the stable manure is from cow stables where alfalfa hay has been used for feeding purposes and particularly where the manure has been partly decomposed or composted it is likely that the elements of plant food in the cow manure will be as available, or more so, as is the case with bean straw. If average cow manure has not been mixed with barley straw or similar materials it is my opinion that the elements of plant food in it will be as available for feeding citrus trees as is the case with average bean straw.

"Under the conditions mentioned in the letter, where supplies of bean straw are available in considerable quantities for fertilizing purposes and at less cost per ton than stable manure, my belief is that bean straw would be the best and most economical purchase.

"The questions brought up in this letter emphasize again the desirability of buying all organic fertilizers, such as stable manure, bean straw, and alfalfa hay, on the basis of their nitrogen and humus content and the amounts of essential elements of plant food for citrus trees. The purchase of such fertilizers on the unit basis is logical and fair to everyone concerned. The cost of the analyses in this connection is money well spent."

County Horticultural Commissioners in Annual Session

The State Association of County Horticultural Commissioners held what was perhaps one of its most important conventions in connection with the State Fruit Growers Convention last week in Los Angeles. Nearly every county in the state was represented in the attendance, and while several of the sessions were executive there were other sessions in which matters of greatest interest to fruit growers were discussed. They began Monday evening. Others were held on Tuesday, and on Wednesday the commissioners united with the state fruit growers in what was known as farm advisers' and horticultural commissioners' day. Commissioner Stabler of Sutter County and Commissioner Ryan of Los Angeles County presided.

Mr. Flebut of the United States bureau of entomology, who succeeded Mr. Nougaret in investigations as to mealybug and other grapevine pests in Central California, addressed the convention on mealybug. Identification and control of weeds was discussed by Prof. Kennedy of the University of California. Mr. Kennedy is connected with grass and forage plant investigations of the university. George P. Gray, chief chemist of the state department of agriculture, explained the workings of the state insecticide, fungicide and fertilizer laws. This was discussed by T. D. Urbahns of the state department of agriculture. Control of red spiders of deciduous trees was handled by E. R. de Ong of the United States bureau of entomology and Harry P. Stabler, commissioner of Sutter County. Citrus red spider was handled by A. D. Borden, United States bureau of entomology, and R. S. Woglum of the Fruit Growers Exchange.

The convention closed in executive session on Friday morning, which was also election and general business session of the association. Officers elected for the coming year are: President, H. J. Ryan, Los Angeles County; vice president, J. F. Benton, Humboldt County; secretary, A. H. Call, Ventura County. The commissioners expressed greatest satisfaction in the results of the convention, especially in that more united action may now be secured in the inter-county shipments and the working out of proper quarantine regulations, also in shipping point inspection which is still being tested out. Mr. Read of the state office united with the commissioners in discussing this matter, and we were assured that the working out of this new plan and the securing of more perfect cooperation between shipper and horticultural commission in standardization would result from the conferences held.

The executive committee consists of: Commissioners Gould, Yolo County; Roullard, Fresno; Morris, Orange; Kellogg, Santa Barbara; Waite, Imperial.

The legislative committee consists of: Commissioners Ladd, San Joaquin County; Seulberger, Aameda; Gorton, San Diego; Butler, Napa; Brosius, Sacramento.

CALIFORNIA FARM BUREAU EGG LAYING CONTEST

Santa Cruz, October, 21.—In the 1920-21 contest, which is now in its last ten day lap, the race for second place is very close between S. L. Gibson and Geo. Gray of Santa Cruz. Gray's pen is now leading by seven eggs and the odds are against Gibson on account of one of his best layers

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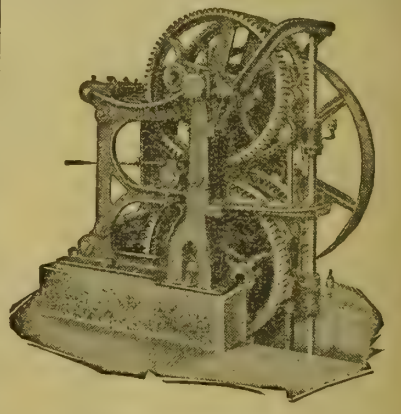

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being checked with a cold. The leading pen, the sure winners now, belonging to Hanson's Poultry Farm of Corvallis, Oregon, are again near the top of the list for highest production for the ten days. The highest pens for the ten days are:

Oregon Agricultural College, Corvallis, (Barred Rocks), 61 eggs; Hanson's Poultry Ranch, Corvallis, Oregon, 55; H. C. Kleinsmith (Barred Rocks) Hoff, Oregon, 53; Geo. Gray, Santa Cruz, 52; W. J. Neef, Santa Cruz, 52; S. L. Gibson, Santa Cruz, 48; E. D. Crewdson, Santa Cruz, 45.

The pullets in the new contest are laying strong, the 620 highest hens which are counted as competing having averaged 42.7 per cent for the past ten days. From present indications production will probably be on the decrease soon as quite a number of the pullets that have been laying are showing signs of drying up preparatory to a molt. This condition, which is to be expected, seems to be unpreventable as every precaution was taken this year to offset it. High pens for the ten days were:

Hanson, 78 eggs; Alex Stewart, Santa Cruz, 4; H. H. Corbett, Santa Cruz, 73; Sunrise Poultry Farm, Santa Cruz, 70; D. B. Walls, Petaluma, 70; J. J. Shore, Santa Cruz, 70; Neef, 70; Neef, 68; L. A. Thornewill, Santa Cruz, 65; Corvallis, 65; Gray, 65; Gray, 64; Crewdson, 64; Paul Tallman, Santa Cruz, 63.

Twenty-seven pens laid over 50 per cent while 15 laid over 60 per cent.—Max Kortum, Manager.

Holstein Breeders

Exhibitors and members of the Southern California Holstein-Friesian Association at the Southern California Fair.

SHORTHORNS SELL WELL AT FRISCO

The sixth annual sale of Shorthorns to be held under the auspices of the California Shorthorn Breeders Association took place at the California National Livestock Show and proved one of the most successful sales of the season. Thirty-two head of specially selected females and bulls were taken at an average of $312. Ten breeding establishments contributed the offering.

The white senior heifer calf offered by the Dibblee Estate made the top figure of the lot, being taken by the Blackhawk Ranch at $750. Ormondale Ranch sent through the top bull, Ormondale Radium 2d, senior champion of the show, that went to H. C. Muddux & Son of Sacramento for $525. This same firm was the heaviest buyer and the most persistent bidder.

Geo. H. Sawyer of Waterford made a number of excellent selections among them being the good roan senior bull calf sired by Gainford Matchless and consigned by the Caledonia Farms. The Newhall Land and Farming Company also figured prominently in the sale.

A gratifying feature of the auction was the support rendered by the various breeders.

Col. H. L. Hull of Iowa was on the block and Col. John Davis of Manteca assisted in the ring.

List of sales follows:

Blackhawk Ranch, Diablo

1, Victoria 5th, red and white, July, 1920; Est. Thos. B. Dibblee, Santa Barbara, $425.
28, Blackhawk Renown, bull, red, May, 1920; C. W. Tryon, Angels Camp, $300.

Wm. Bond, Newark

29, Cumberland Goods 2d, roan, Feb., 1920; C. L. Fulstone, Carson City, $250.
2, Mayfield Victoria, red, Apr., 1916; Caledonia Farms, West Sacramento, $400.
3, Cumberland Girl, roan, March, 1918, and roan c. c.; Williams Estate, Alameda, $250.
5, Maid of Roselawn, red, Feb., 1919; Newhall Land & Cattle Co., San Francisco, $160.

Caledonia Farms, West Sacramento

8, Bessie Sybil, roan, March, 1916; F. L. Gordon, Suisun, $210.
9, Kings Nanon, red, Jan., 1920; J. C. Jones, Alamo, $225.
10, Glenbrooks Memory 42d, red, March, 1920; Geo. H. Sawyer, Waterford, $300.
11, Sultan's Bessie, white, Jan., 1920; Geo. H. Sawyer, $525.
30, Matchless Lord, bull, roan, Sept., 1920; Geo. H. Sawyer, $410.

Estate of Thos. B. Dibblee, Santa Barbara

12, Ruby's Gem, white, Sept., 1920; Blackhawk Ranch, Diablo, $750.
13, Secret Sylvia, red, little white, June, 1920; H. C. Muddux & Son, Sacramento, $325.
31, Knight Avon, bull, white, June, 1920; Len Featherestone, Clements, $200.

T. S. Glide, Davis

14, Hillcrest Mary 4th, red, Oct., 1919; H. C. Muddux & Son, $250.
15, Hillcrest Flower 3d, roan, Sept., 1911; H. C. Muddux & Son, $425.

Straloch Farm, Davis

16, Hopland Vanilla 2d, Nov., 1916; Newhall Land & Cattle Co., $410.
17, Lady Lavender, Dec., 1919; Wm. B. Meese, Diablo, $375.
18, Milmar Lass, Sept., 1918; Geo. L. Proctor, Healdsburg, $335.
32, Straloch Adjutant, bull, roan, June, 1920; C. L. Fulstone, $250.

Jack London Ranch, Glen Ellen

19, Roselawns Last, roan, Dec., 1919; Newhall Land & Cattle Co., $175.
20, Village Girl, red and white, Nov., 1920; Newhall Land & Cattle Co., $150.
21, Alfa's White Tip, red, Sept., 1919; Newhall Land & Cattle Co., $160.
22, Sonoma Princess, red and white, Sept., 1919; Newhall Land & Cattle Co., $175.

Ormondale Ranch, Redwood City

23, Secrets Choice, red, Dec., 1913; T. T. Miller, Hollister, $325.
33, Ormondale Radium 2d, bull, roan, Feb., 1919; H. C. Muddux & Son, $525.
34, Ormondale Baron 3d, red, March, 1920; F. G. Stevnot, Carson Hill, $200.

Pacheco Cattle Co., Hollister

24, Cumberland Pacheco, white, March, 1919; Wm. B. Meese, $525.
25, Pacheco Lass 233d, roan, Sept., 1920; Newhall Land & Cattle Co., $250.

Howard Vaughn, Dixon

26, Red Lady, red, Apr., 1920; C. N. Hawkins, Hollister, $300.
27, Roan Princess, roan, Sept., 1920; Caledonia Farms, West Sacramento, $350.
35 Glenbrook Master, red, Nov., 1920; Jno. Clements, Clements, $185.

JERSEY BREEDERS ORGANIZE

The California Jersey breeders met at the Bellevue hotel, San Francisco, at 8:00 p. m., October 25, for the first time as the California Jersey Cattle Club, which is the name of the new organization that has just been perfected. The California Jersey Cattle Club now exists as a non-profit, non-stock corporation under the laws of California.

The directors and officers of the new organization are: President, Judge Peter J. Shields; vice president, Guy H. Miller; secretary, Professor V. C. Bryant; treasurer, N. H. Locke; J. H. Sawyer, M. Fortini, Arthur Purvine, H. G. Gross, E. E. Greenough.

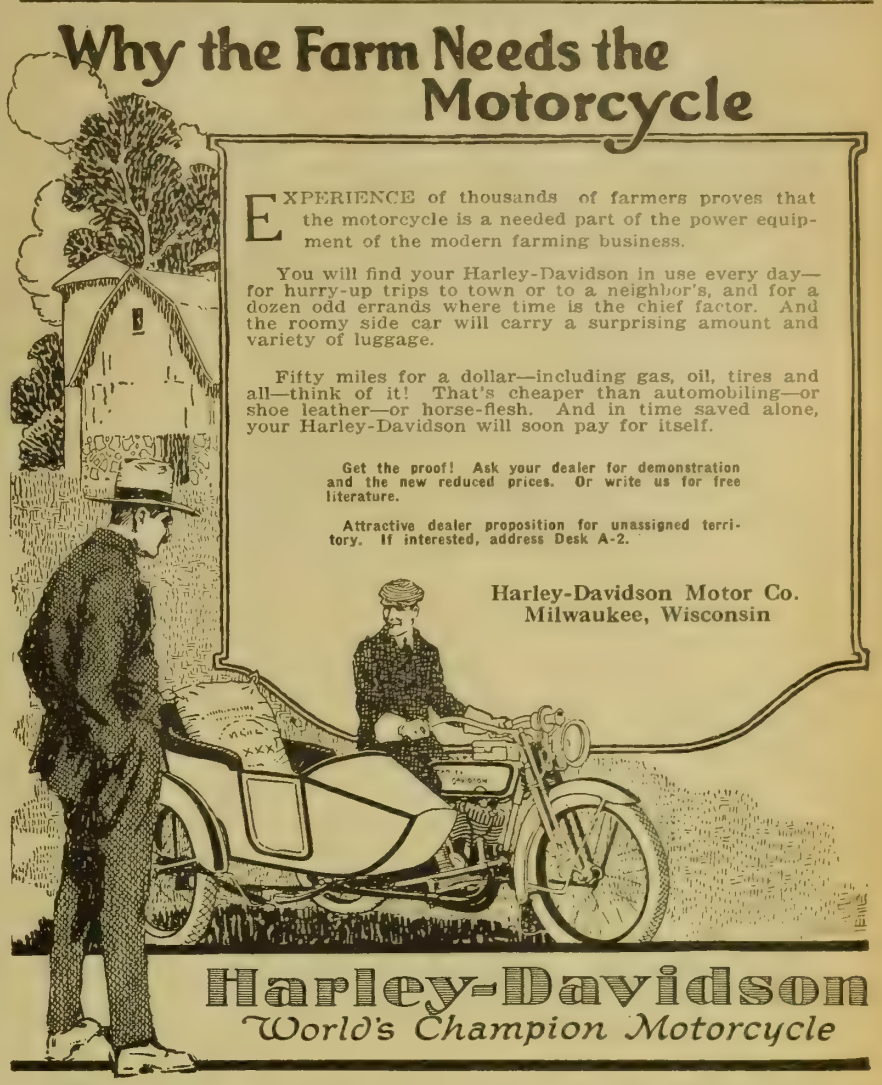
Plans were perfected for the organization of the Pacific Jersey Association which is to consist of breeders of Washington, Oregon and California. The purpose of this organization is to employ a field man to work for the Jerseys on the Pacific coast.

J. E. Thorp was appointed committeeman to take up organization of the Pacific Jersey Association with the breeders of Oregon and Washington during the Portland show and advise them that California is going forward with the plan.

Another meeting will be held during Stockmen's Week at Davis in February.

HOLSTEIN MEN ADOPT DELEGATE PLAN

Following the example of the leading farm organizations of this country the Holstein-Friesian Association of America adopted on October 11 at St. Paul, Minnesota, the delegate system of government in its association affairs, replacing by this action the proxy system of voting which has been in operation since 1880. Under the new plan each state constitutes an election district. Each district is entitled to one delegate and one additional delegate for every 200 members or majority fraction. All delegates have equal voting power. The delegates are nominated by the members of a district, any ten members having the right to put up their own ticket. These nominations are sent to the secretary 90 days before the annual meeting date which remaines, as previously, the first Wednesday in June. The delegates elect the officers of the association.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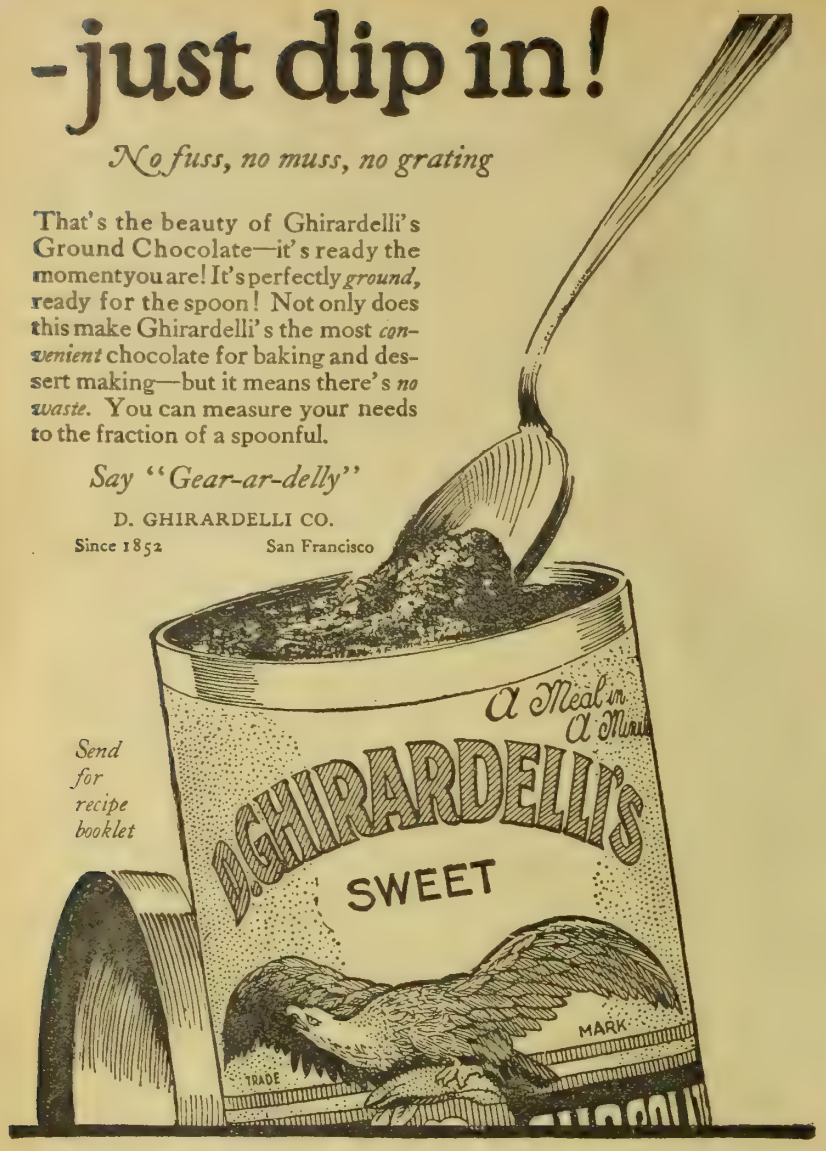

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Household Department

WHERE THE PUT-IT-OFFS ABIDE

My friend, have you heard of the town of Yawn
On the banks of the River Slow,
Where blooms the Wait-Awhile flower fair,,
And the soft Go-Easies grow?

It lies in the valley of What's-the-Use,
In the province of Let-Her-Slide,
That old Tired Feeling is native there;
It's the home of the listless I-Don't-Care,
Where the Put-It-Offs abide.

—Selected.

SAM WILDER'S MAHOGANY

By Edna A. Collamore in Youth's Companion

"THAT was a mighty fine apple dumpling, Em," remarked Sam Wilder as he energetically pushed his spoon round his plate in pursuit of the last few drops of sauce. "Talk about the kind mother used to make! Well, I'm free to admit that I never had such good victuals in my life as I've had since you came to keep house for me."

He nodded his head solemnly that his sister, the plump and placid Widow Bassett, might appreciate the weight of the compliment.

"I like to cook well enough," said his sister, sitting back comfortably in her chair; "trouble is, it seems like a waste of time to cook just for two."

"Dare say you'd like to cook for the whole neighborhood," said Sam, tilting back in his chair. "I never saw the beat of you for wanting to give things away. In the six months you've lived with me I've had to give more than I've given all the rest of my life put together."

"You've got such a lot of things you really don't need; it seems as if they ought to be doing somebody some good. Now, I was a-wondering just yesterday—" She paused.

"Em!" cried Sam, bringing the forelegs of his chair down to the floor with a thump. "If you don't stop your wondering, you'll land me in the poorhouse—that's what you'll do."

"It's that old bedroom set up in the garret," explained Mrs. Bassett, "the one Grandpa Wilder made. Seems as if it would be nice for Mabel and Ed to have that. I feel toward Mabel as if she were kin of mine, and Ed Slocumb is a nice boy. They'd like to get married, come October. Most of his money is in that little cottage he's building, and they're considerable bothered about furnishing it. If you don't feel that you can afford to give him the set, why, charge him something, five or six dollars. It's a pretty shape, and he could paint it over."

"Paint it- Good land, Em, that set's mahogany!"

"Mahogany? Cat's foot!" retorted Mrs. Bassett. "It's birch, with a little veneer on the top of it. I always despised veneer."

"Mahogany is mahogany, if it isn't a foot thick, and it's worth money!" said Sam hotly. He stood up as if to end the discussion. "I'm going over to that auction at South Warfield this afternoon, so I'm best be getting ready."

"If you are going to the auction, Sam Wilder," said Mrs. Bassett as she started to pile the dishes, "you watch and see how things get ridiculed and criticized the minute their owner is dead and gone. It's a sight better to give your odds and ends of furniture that you don't really need to a nice young couple who will take good care of them than to leave them to stand shabby and forlorn out in your front yard for strangers to dicker over and pass remarks about. That's my opinion."

"Well, it's my opinion that mahogany's just the same as money. I shouldn't wonder but what that old set was worth a lot. I'm going up to the garret now to look it over. Want to come?"

"No," said his sister. "The garret's like an oven, and I must get at my dishes."

As she busied herself about her work, going with swift steps from dining room to pantry, from kitchen to cellar, from dining room to kitchen, she resolutely ignored the sounds that came from overhead.

At last Sam Wilder, dust-covered, red-faced, perspiring, reappeared in the kitchen. "There!" he gasped. "That was a tussle, but I managed it. I've got every bit of that set out in the back yard. It is worth nigh on a hundred dollars, I bet. I'm going to have one of those corn-assures, as they call them, look it over. Catch me selling that for a measly five dollars! I guess not."

"Do just as you feel about it," said Mrs. Bassett amiably. "It didn't look like any great shakes to me. Ain't you afraid it will be stolen or rained on or something, out in that back yard—long's it's so valuable?"

"A gentle rain is just what it needs, to rinse off the dust!" called Sam from the bathroom, where he was noisily washing. "Do you want anything at the auction, Em?"

"Might have a few stone crocks, if you come across them. I like the old kind better than the new. I'm figuring on putting down a lot of pickles, the Ladies' Aid is so fond of them."

"Surprising how folks keep wanting more stuff," chuckled Sam. "Want to give away half the house, and then fill it up again."

"Nothing surprising about that," Mrs. Bassett retorted. "Seems to me that's the healthy way to live—keep getting and keep giving. Every time you get something, give something; then your house doesn't get cluttered, and your heart doesn't get choked."

"Nor your pocketbook, either," said Sam as he went out to the barn to harness.

Mrs. Bassett smiled contentedly. She sat down in the big rocker and fanned herself with her apron.

Her thoughts must have pleased her, for she nodded approval at them, one by one. Now and then, too, she looked out of the west window and scanned the horizon. Then she went to her room to array her round body in black-and-white dimity.

Her attire evidently astonished the young girl who knocked at the side door. "Why, Aunt Emma, I thought—Are you going out?" she asked.

"I know I invited you over so we could hem those napkins, Mabel," said Mrs. Bassett, "but it's too hot to sew. Anyway, I can do them evenings. I want you should go over to Mrs. Billings's with me. I need more red for that rug I'm making you, and she says she's got plenty I can have."

"It's a long walk in this heat," said Mabel,

"I feel like a long walk," replied Mrs. Bassett. "We don't need to walk home. Ed comes home that way, doesn't he? And Sam's over at South Warfield; I'll come back when he does."

"And the paper says showers."

"Is that so?" Mrs. Bassett looked interestedly out of the west window. "Then you help me shut up the house, and we will start off as quick as ever we can, so's to get there ahead of the shower."

Old Mrs. Billings, who was fond of visitors, enjoyed the call hugely. They examined together her big piece box and listened to the bits of town history that clung to the neat little rolls of cloth. Here was a bit of Joe Billings's army blanket; there, a piece of cloth Aunt Lucinda had woven out of wool that grew on the backs of her own sheep. With this red petticoat Martha Billings had flagged a train, the time of the big spring freshet. That blue cloth was from a coat that had been round the world twice; Mrs. Billings herself had worn it in the days when she sailed the seas with her sea captain husband.

The storm was upon them before they realized it, and there was a frantic rushing to close windows. Mrs. Billings called it a tempest, a "harricane," a "regular ring-tailed pealer." Mrs. Bassett said she rather liked a good hard rain.

"You'll be surprised what a change a brisk rain makes in the look of things," she said contentedly.

When, after an hour of pelting rain, the sun came out, Mrs. Bassett grew almost hilarious. "I just can't help laughing when I look at a rainbow," she explained. "They're so cheerful some way, and this hot sun will do wonders after that drenching, I can tell you."

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"It will help the gardens," agreed Mrs. Billings. "Now I do hope you will stay to supper."

"I wish we could," said Mrs. Bassett, "but I've got Sam's supper to get. Mabel will ride home with Ed. He'll be along in a minute. I'm watching for him now."

The minute that Ed drove into sight she remarked, "I've got something to say to him," and in the same breath started for the door.

As the young people started on, Ed turned inquiringly toward Mabel. "Did you hear that?" he asked. "She told me she wanted me to step over this evening to fix a broken window cord, and she said if I dared to laugh at anything funny I happened to see she'd disown me. Queer, wasn't it?"

"She has seemed a little strange all afternoon," Mabel said; "but she's a dear, anyway."

A little later Sam picked up his sister, and they jogged serenely home. He had enjoyed the auction, which had been lively and sipirited. When they reached the house, Mrs. Bassett went in by the front door, so that the wet grass, she said, should not soil her skirts. She changed her dress, opened the windows and set about preparing supper. She did not glance out of the back windows.

Sam was somewhat glum as he sat down to supper. Now and then he cast a furtive and suspicious look at his placid, unperturbed sister. The "riz" biscuits, melon preserves and raspberry turnovers soothed but did not cheer him.

He rose at once when the meal was done.

"Now, Em," he said, "I want you to look out in the yard a minute. I've got something to show you."

It was a show—that once-prized mahogany. Its sober proportions were veiled and disfigured by intoxicated whirls and swirls and quirls of frenzied or frolicsome veneer. The chairs looked like prehistoric quadrupeds. The headboard of the bed was trying to face three ways at once. The footboard had slipped off its false raiment and showed a striped and spotted surface. The dresser had sprouted horns, hooked claws and a curling tail.

"Oh, your poor mahogany!" said Mrs. Bassett sympathetically.

"Did you ever see the beat of it?" he demanded. "Looks as if it were made in Bedlam, and finished off in the zoo."

"What a shame!" said a hearty young voice. It was Ed Slocumb, coming over to replace the broken window cord. "I'm awfully sorry, Mr. Wilder. Can't I help you mend it? I'd be glad to try."

"You can take the dratted thing off my hands, that's what you can do for me!" said Sam Wilder. "Throw it into the river. I don't want ever to see it or hear of it again, nuther. Here, I'll give you two dollars to cart it off and cut it up for kindling wood."

"Oh, I couldn't take your money! But I'd be glad of the set. I'll scrape it and polish it—fix it up. The lines are splendid, and it's well made."

"Well made!" snorted Sam in deep disguest.

"It's a shame that it got wet."

"Wasn't it?" said Mrs. Bassett pensively. "There I was calling way the other end of the town."

"Well, nobody was to blame for not foreseeing a storm like that." Mr. Wilder was considerably mollified by receiving sympathy when he had feared guffaws. "There's a big mirror upstairs you can have, Ed. if you'll see that nobody has a lot to say about these monstrosities. I hate to feel myself talked about. We won't mention this stuff again, any of us."

"Put it as a favor, if you like," said Ed Slocumb, "but I shan't forget to be grateful for your generosity."

"'Tain't generosity, it's self-defense," retorted Sam, starting for the barn.

"I don't name it a triumph of generosity, either," murmured Mrs. Bassett to the surrounding landscape. "I call it an outcome of diplomacy."

The Earlimart farm center of Tulare County will hold a one day farm management and accounting school under direction of the state university, date to be chosen some time in February.

The Kings City chamber of commerce is urging the state highway commission to proceed with grading and rocking of the Coalinga-San Lucas lateral.

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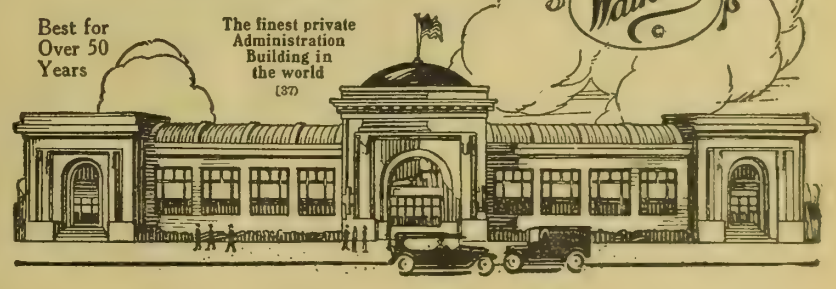

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HINTS FROM HOUSEKEEPERS

Quince Marmalade

It is time for quinces again, and since no one seems to have heard of the following combination I thought I'd like to pass it on. Have been making it myself now for two years and we like it very much.

Quince Marmalade — Take four medium to large quinces to one grapefruit of about the same size (other sizes of the fruit in proportion). Peel and core the quinces and remove the seeds from the grapefruit then put all through the food chopper. Put on to cook with a little water until all the fruit is thoroughly cooked. Then to each cup of fruit add ¾ cup of sugar and cook till done, about 15 minutes. This should stand for a few months before using to be at its best. —Mrs. V. F. Bogle, Walnut Grove.

Correction

I would like to correct the mistake in the recipe for cabbage pickle in your paper of October 22. It should be ½ gallon chopped onions instead of 2 gallons.—Mrs. Geo. Brill, Selma.

Vegetable Soup

Three onions, three carrots, outside leaves of lettuce, one green pepper, clove of garlic, leaves and ends of celery, cauliflower and spinach, in fact, any vegetables you have, with two potatoes all cut into small pieces with three cups of water and simmer in a double boiler for two hours.

In a frying pan place a tablespoon of lard. When hot drop in 2 onions, 1 pepper and handful of parsley chopped fine. Cook 10 minutes, stirring occasionally and add to the soup. When dinner is ready add a pint of hot milk and serve. No meat or stock is necessary for this soup as it is very rich and well flavored. When cooking beans it is well to save the water and use it for making this soup. All water that vegetables are cooked in should be saved for soups or gravies. —Farmers Wife.

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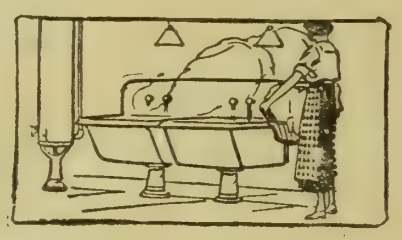

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FALL PRESERVES

By Mrs. Chas. C. Archer

The household department is always helpful. Now that the winter supply shelves are almost filled, perhaps a few recipes to help fill up the remaining vacant corners would be welcome.

Of course we nearly all make watermelon rind preserves, but here are some watermelon recipes which will give variety.

Watermelon Marmalade

Heart of 1 large ripe watermelon, cut into small squares, minus seeds and strings. Allow 2 lemons and ¾ pound sugar to each pound fruit. Cut lemons in slices and cook sugar, fruit and lemon together until syrup thickens. Crystallized ginger and walnuts added before removing from fire changes this into conserve.

Watermelon Meat Preserves

To 1 pound fruit use ¾ pound sugar. Select melons not too ripe and use only the heart. Take fruit and half of sugar and set over slow fire until fruit is saturated with sugar. Remove fruit and set in sun. Add other half of sugar to the syrup in the kettle and cook till a thick syrup. Put in fruit and allow to come to slow boil. Remove and put in jar. Cook syrup a few minutes longer and then pour over the fruit.

Cantaloupe Pickle

Select melons not quite ripe. Halve, scrape out seeds, peel and cut meat in squares. This recipe calls for 4 pounds of the cantaloupe meat. Let lie in brine over night. Next day boil the fruit in a weak alum water (about ½ level teaspoon powdered alum), until transparent. Drain, and rinse fruit in clear water. Make a syrup of 3 pints sugar and 1 quart vinegar. Add 2 tablespoons cloves and 4 tablespoons cinnamon. Let come to boil, drop in fruit, which has been wiped dry after it was rinsed. Boil 20 minutes. Put in jars. The longer it is kept the better it becomes.

Cantaloupe Preserves

To 1 pound cantaloupe use ¾ pound sugar. Prepare in same manner as the cantaloupe pickle, only omitting the vinegar. After making a syrup of the sugar and fruit add allspice, cloves and cinnamon to taste. Cook fruit 20 minutes. Then remove from the syrup. ' Cook syrup until thick, then pour over the fruit in the jars.

Plum Sweetmeat

Six pounds plums (after pitting), 6 pounds sugar. Run 3 oranges and 1 lemon through the meat chopper. Add to plums, together with 2 pounds seeded raisins and 1 pound chopped nuts. Boil slowly until the consistency of jelly. Put in glasses. If plums are very tart use all oranges, omitting the lemon. Some also prefer to omit the nuts.

Tomato Jam

Tomatoes are always inexpensive and abundant in the fall and here is a century old recipe called Mrs. Hodges' special tomato jam. 8 pounds ripe tomatoes peeled and cut in slices, 4 pounds sugar, 1 pint vinegar. Tie in loose meshed bag 1 tablespoon each whole cloves and pepper corns and 6 blades mace. Let all come to good boil. Set back and let cook very slowly, till thick and rich, 4 or 5 hours or longer. Remove spices. Pour into glasses. Owing to the juice in the tomatoes and the vinegar which must be boiled down by long cooking, this only makes a few glasses.

Another Tomato Jam

Here is another one, which is less rich.

Quarter 10 pounds of small uniform sized ripe tomatoes. Add 5 pounds sugar, 1 quart vinegar. Put in bag 1 tablespoon each whole cloves, stick cinnamon and allspice. Boil all gently three hours. Remove spices. Can in small sized jars. Tomatoes may be peeled or unpeeled.

SOME RICE RECIPES

Savory Rice—This dish may be varied in countless ways. First have the rice well cooked; it should be well washed and dropped into rapidly boiling water which has been salted, and allowed to cook until every grain stands out by itself, is tender and yet not mushy. Now take a cupful of cooked rice, put a layer of it in a well buttered dish, then cover with a small layer of chopped chicken giblets or any minced meat, with a broth of white sauce well seasoned and added with each layer. Bake until thoroughly hot, and serve as a main dish or as a substitute for meat. Tomatoes, with onion and a little chopped beef and rice, prepared in this way is another good dish.

Swedish Rice—Boil a cupful of rice until tender in salted water. Drain and dry in the oven. Stir into it two tablespoonfuls of sweet fat, the yolks of two eggs well beaten, a teaspoonful of onion juice, and salt and pepper to taste. Stir over the fire in a dish set in hot water, using a fork to stir with. Turn into a round bowl to mold, then unmold on a platter and heat in the oven. Serve with drawn butter sauce.

Rice with Eggs—Take a quarter of a cupful of washed and drained rice; add a tablespoonful of sweet fat and stir until a light yellow over the heat. Add broth, potato or any other vegetable water, and cook covered until the rice is tender; then season well and stir in two or three fresh eggs; Stir until cooked, then serve at once. This dish tastes like scrambled eggs, but a very few eggs need be used to serve five. Milk may take the place of the broth in cooking the rice. Skim milk may be used in many such dishes to advantage.

Other Uses—A small amount of boiled rice added to gems, muffins or griddle cakes improves them. Plain boiled rice dressed as mashed potato will serve as a vegetable with steak. Rice made into cakes and fried, or into croquettes and served with a sauce, are well liked dishes.

NELL SAVES NELL'S LIFE

The sort of friendship that counts was shown by a dog on the company farm of the General Electric Company at Schenectady, New York, for one of the farm horses. Discovering her chum stalled one night and in danger of strangling to death, the dog roused the foreman of the farm and led him to the stable where the horse lay groaning in her stall.

Both animals are named Nell, and they have been pals for many months past. Almost every night Nell, the dog, will watch for the return of Nell, the horse, waiting half the afternoon for the big gray team, of which Nell is one, to come back from work.

One night about ten o'clock, as Jake Clinton, foreman at the farm, was about to retire, he heard a commotion outside the farm-house, which is two or three hundred feet from the stables. Nell, the dog, was barking and howling persistently and kept it up until Clinton went to the porch to see what was wrong.

The moment she saw him, Nell began to bark excitedly, and dashed toward the stables, then back toward the man, then toward the stables again, keeping up her barking all the time. Clinton followed her to the stables and to Nellie's stall.

There he found the mare on her back, her hind legs wedged into the next stall, her halter drawn tight. She was quite helpless, and in a few hours, perhaps less than an hour, she would have been dead.

Clinton hurriedly summoned help from one of the near-by factory buildings and soon had the horse released and on her feet, out of danger. The moment she saw the horse freed, Nell, the dog, exhibited keen delight, frisking about and barking loudly. It was found that she was the only one of four dogs that were all in the stable together at the time, to notice the distress of the horse, and endeavor to bring help.

The dog was picked up a waif by one of the vice-presidents of the General Electric Company, G. E. Emmons, as he returned home late one evening. Nell, then only a pup, was lying among some leaves by the sidewalk. She crawled up to Mr. Emmons and seemed to be anxious to make friends. Mr. Emmons took her into the house and a few days later gave her into the

The Cultivator Patterns

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PATTERN DEPARTMENT

California Cultivator **Los Angeles**

keeping of R. N. Ramsay, gardener in charge of the farm, to be brought up. She was taken to the company farm, and there made the acquaintance of Nell, the horse, whose life she was to save a few months later.

PERSPIRATION PLUS EDUCATION

Ten years ago a Missouri boy, named William Howell, was working his way through the college of agriculture at the University of Missouri. He got out of bed early in the morning to attend furnaces and waited tables to pay for his board. Likewise he did good work in school, especially in animal husbandry and dairying.

In his senior year he was a member of Missouri's dairy judging team that won first place at the National Dairy Show. Hard work and early rising had only strengthened his standing with faculty and students at the Missouri college of agriculture, for it's a working school.

After his graduation Howell went into extension work in the South and a year ago was placed in charge of the animal husbandry classes and the school dairy at the Sixth District Agricultural and Mechanical School for boys and girls at Barnesville, Georgia. Here he found a herd of 24 cows that were losing the institution $23.50 a month. He cleaned up the dairy barn and instituted the individual tests and individual feeding. In five months, by the elimination of the boarders, the herd had been reduced to 15 cows and the milk flow of these had been increased 78 per cent. From a loss of $23.50, the net monthly balance of the school dairy had been turned to a profit of $410. Still rising early and working hard this Missourian was turning to practical use his college training.

All that was but incidental to his work of teaching profitable dairy methods to the farm boys and girls of the Georgia Sixth District. The team of boys that he trained in stock judging that fall went to the International at Chicago and won first place in competition with similar teams from the entire country.

And now comes the news that William H. Howell has been employed as manager of Georgia's largest private herd of purebred Guernseys. With home, garden, dairy products and a car furnished, he gets a cash salary of $4,000 a year. He still gets up at 4 o'clock in the morning and thrives at it. He has learned to think without forgetting how to work.

AMERICAN INDIANS AID ARMENIANS

It is the irony of fate that one of the oldest civilizations on the earth today is partly dependent for existence on one of the youngest civilizations. Indian maize, the contribution of the American aborigines to agriculture, is now feeding starving thousands in Armenia and the Holy Lands. And American Indians, the last remnants of famous and once strong tribes, are contributing quantities of corn and other grain to the support of Armenian women and children.

The Omaha tribe, which occupies the Omaha Indian reservation in Nebraska, has agreed to support one Armenian child. The Winnebago tribe supports several others and recently four Indian boys attending the Genoa Industrial school each assumed the responsibility of supporting an Armenian child. These Indians, many of whom are farmers, are cooperating in the nation wide grain campaign being conducted by the Near East Relief to collect five million bushels of grain for the relief of orphans and refugees overseas.

Everywhere American farmers are helping in this mercy work. The grain is rolling in to elevators and is being collected and milled into food products. But if the goal is to be reached it must come faster still, especially during October. Winter starts early in Armenia and the grain must be quickly transported across the Atlantic in order to prevent widespread starvation. Your contribution is desperately needed today. Will you join these Indian farmers in their mercy work?—Near East Relief Grain Campaign, 700 Kansas Avenue, Topeka, Kansas.

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At 1 P.M.

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Holsteins at the Southern California Fair

By R. A. Condee

IN BOTH quality and number the Holstein classes at the Riverside show this year surpassed all other livestock displays and brought together some of the best Holsteins in the west. Judge W. H. Standish of Lyons, Ohio, who placed the awards in this class, was high in his praise of the quality he found in the Holstein division.

The aged bull class brought out four good animals. The judge soon found the top in King Segis Pontiac Jannek, owned by the Santa Monica Dairy Company, and later made this bull senior and grand champion in the class. Jannek is a real show bull with splendid shoulders, massive middle, great size and stretch, lots of quality and a great dairy head. This bull is one of the outstanding show bulls of the state and is sure to bring high honors to his owners in whatever company he is shown. The second prize in aged bull class was Prince Aralia, shown by Robert N. Clapp of Nuevo, a good bodied bull but outclassed in such warm company as Jannek furnished. Bost and Johnstone came in for third place with a good bull, and had he been fitted he might have given the Clapp entry a stronger fight. Fourth place was taken by that wonderful breeding bull, King Pontiac Netherland Segis 3rd, also shown in rather rough condition after a heavy breeding season.

Four outstanding two year old bulls faced Judge Standish and kept him guessing for a few minutes. After placing this class, the judge announced to the breeders that this was the best lot of two year old Holstein bulls he had handled this season after judging at 18 state fairs. Sierra Vista Stock Ranch of Perris placed first in this class with Sir Ormsby Skylark Rauwerd, a splendid bull in size, quality and outstanding Holstein type. K. S. P. J. Count, the Clapp entry, placed second, and here also was a great show bull sired by the grand champion at this show, King Segis Pontiac Jannek. Carl Ray of Lankershim drew third place with Prince Julianna Fayne, a bull that would make keen competition in any show. Mrs. Peale Penrose of Pomona was given fourth on her herd sire, Republic Tuebie Korndyke, a grandson of the now famous bull Allenvail Cornucopia Paul. This bull was shown out of condition, but even in his rough state showed great quality and promises to make some keen competition in the three year old class next season.

The senior yearling bull class brought out some outstanding animals. First went to Sir Ormsby Hengerveld Skylark, shown by Maxwell Farms, Hollywood, a wonderful young Holstein and one of the best prospects for bull honors at future shows. This bull was shown in the usual Maxwell form which always means the best. Offering the strongest competition to the Maxwell bull was the Robert N. Clapp senior yearling bull, King Segis Pontiac Aero, placed second in the class, a bull of outstanding quality, sired by King Segis Pontiac and a grandson of the famous three time National Dairy Show grand champion, Paul Calamo Korndyke.

First junior yearling bull went to Dichter Spofford Korndyke Vale, shown by E. G. Stinson of Orange, a son of the this year's grand champion at the California state fair and the first junior yearling at the same show.

The senior bull calves shown were so uniformily good the Holstein talent at the ringside was unable to agree on a top. Judge Standish after a great deal of careful work placed the Ed Stalder calf, Nuevo De Kol Ormsby, first with Berylwood Fobes Korndyke, exhibited by Berylwood Stock Farm, Hueneme, second, with the Sierra Vista Ranch entry third, and Maxwell Farms fourth.

In the junior bull calf class the Berylwood Farm entry, Prince Alcartra Walker Segis, handled by that master show ring expert, Jack Shillcock, carried off first honors and later junior champion, with the Sierra Vista calf second, Maxwell Farm third, and Clapp fourth. The Holstein fans at the ringside all agreed that this was the best class of junior bull calves ever brought together at a California show.

The real fight for honors came in the aged cow class where a string of cows that would do credit to a national show lined up before the judge. Ringside picking was very lively in this class, and there were almost as many tops picked as there were cows in the ring. Judge Standish gave first place to Segis Walker Gelsche, shown by Robert N. Clapp, a wonderful old show cow but not in best condition for showing; second went to the great Maxwell cow, Joy Hengerveld Clothilde; third to Nancy Calamo Korndyke, another Clapp entry, and fourth to the Fred Hartsook Ranch, Lankershim, cow De Kol Reka Ormsby. Anyone of these cows could have been placed first and senior champion cow in any show in the country and left the judge a good reputation.

The three year, two year and senior yearling heifer classes brought out some wonderful individuals, and the judge many times regretted there were not more ribbons to hand out. An outstanding senior heifer calf, Nuevo Aralia Rowena Ormsby, was shown by Ed Stalder and placed first in a hot class of senior calves. The junior heifer calf, Caronlie Wayne Fayne, shown by the Hartsook Ranch, was the first in the class and later was made junior champion. This calf promises great things under the skilful care of Manager Earl Sturgis.

Knows Value of Pure Bred Boar

By Harvey M. Berglund

MANY farmers in California are today using scrub boars for no other reason than that they do not know the real value to them of a pure bred sire. Of course, there are conditions that may vary this value in individual cases, but the results will always be more profitable with a pure bred than with a scrub. Most every community holds instances where hog raisers have materially increased their profits through the use of a well bred boar, but few men have more clearly demonstrated the increased value than has W. C. Scott, a stock raiser in western Yolo County.

The experience of Mr. Scott should be particularly interesting to men interested in hog raising, for two reasons. In the first place, he kept accurate account of his operations with two lots of hogs and, secondly, both lots were handled under ordinary range conditions and were kept together from the time the second lot was farrowed.

The real beginning of this story goes back to the summer of 1919 when Mr. Scott decided to try out for his own information, and in his own way, a pure bred boar. For a good many years he had been raising hogs in a rather large way, but until that summer he could never quite bring himself to the point of buying a pure bred boar. Hogs were hogs, and, anyway, he thought that under his conditions one kind of a boar would be about as good as another. He sure didn't want anything fancy. Well, he finally purchased a registered Duroc-Jersey.

This boar was bred to a number of native sows and during December, 1919, and January and February, 1920, his first crop of pigs was farrowed. At that time Mr. Scott had on hand 36 shotes that had been farrowed during December, 1918, and the first two months of 1919. These shotes, together with the sows that had been bred to the pure bred boar, were running together and continued so after the sows had farrowed. The shotes, sows and pigs were kept on a hill pasture with plenty of green feed and what acorns they could pick up. They were run in that way until June, 1920,

when they were turned on barley stubble, where they remained until January, 1921. At that time there were 56 in lot one and 54 (the pigs sired by the pure bred boar) in lot two. Both lots were weighed and then put on a self feeder containing rolled barley.

At the time of starting on the self fed ration lot one averaged 159 pounds and lot two averaged 166 pounds. Both lots were fed 24 days and lot one averaged 203 pounds and lot two averaged 216 pounds. At the close of the feeding period the hogs in lot one averaged 24 to 26 months old and those in lot two were 11 to 13 months old.

The conclusions from Mr. Scott's experience are obvious. The pigs sired by the pure bred boar outgrew the scrubs. Mr. Scott declares that from now on he will never use anything but a pure bred boar. A year of time, increased weight and a premium on the market ought to mean a lot just now. The boar did not happen to be a $100 boar at that.

SUNFLOWER SILAGE

R. E. Neidig and L. E. Vance of the Idaho experiment station have published the results of silage experiments with sunflowers. In many parts of the Pacific Northwest the selection of a suitable crop for silage purposes is a matter of some difficulty because of the variable climatic conditions. New crops that are more or less resistant to drouth and that will yield a heavy crop of green material are greatly desired for this purpose. The results obtained by Arnett and Tretsven in 1917 on sunflower silage were so encouraging that the Idaho experiment station started to grow for silage. During the early part of September, 1918, the sunflowers were cut and made into silage, and it was with the said silage that the authors undertook chemical experiments with special attention paid to the acid formation. The composition of sunflower silage compares very favorably with that of maize silage. No data are at present available on the digestion coefficients of the sunflower silage. Practical feeding, however, indicates that it is equal to maize silage for many purposes, and may quite well be used as a good substitute in districts where maize can not be grown.

JUDGING SHEEP

Improvement of the sheep industry depends to a great extent upon a more general understanding of what constitutes an inferior animal and a broader appreciation of the methods of judging individuals by a study of their external parts. It is probably true, in the opinion of animal husbandry experts in the United States department of agriculture, that the average person knows less about the methods to follow and the points to look for in judging sheep than with most other types of livestock.

To meet the need for a better knowledge of sheep qualities the department has issued a new Farmers' Bulletin, No. 1199, Judging Sheep, in which the essentials of sheep judging are explained, a score card is given, with illustrated explanations of how to use it, and full directions are given on such special subjects as judging the age of sheep by the teeth and the location of market cuts in the carcass. The bulletin will be sent free on request to the department.

ANNUAL OF SOUTHERN CALIFORNIA HOLSTEIN FRIESIAN ASSOCIATION

The annual meeting of the Southern California Holstein-Friesian Association was held during the Southern California fair at Riverside and was attended by a large number of Southern California Holstein breeders. The following officers were elected for the coming year: President, Robert N. Clapp, Nuevo; treasurer, William R. Harriman, Hondo; secretary, Robert A. Condee, Chino. Executive committee: Frank E. Pellissier, Whittier; E. H. Agee, Rivera. Extensions and awards committee: J. W. Snodgrass, Hueneme; Jack Klein, Hollywood; Earl Sturgis, Lankershim.

Plans for the year include a membership drive and special work through the schools and the extension department of the University of California in forming calf clubs in Southern California.

Nearly every farmer has unsalable roughage that makes good feed if ground, chopped or shredded and mixed with oats, corn, kaffir, or alfalfa. Mixtures of any kind in which are utilized one or more of these unsalable products create a big saving.

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88 REGISTERED HOLSTEINS 88
AT PUBLIC AUCTION

Palo Alto Stock Farm
Palo Alto, Calif.
Wednesday, November 9
at 10 A.M.

This offering, the first individual public sale from this well known herd, is composed very largely of young cows and heifers of famous blood lines, many with excellent short or long time records, or both, and includes a large number of daughters of

KING PONTIAC SEGIS KORNDYKE, who now has 31 A. R. O. daughters. He is a 30-pound son of King Segis De Kol Korndyke, full brother to King Segis Pontiac.

FINDERNE KORNDYKE NETHERLAND, a son of King Pontiac Segis Korndyke, out of a 31-lb. daughter of Gordon Glen Pontiac.

CARNATION SEGIS WALKER, a son of Johanna McKinley Segis, out of a paternal sister to Segis Pietertje Prospect, the world's record milk cow.

RAG APPLE IMPERIAL KORNDYKE, proven son of Rag Apple Korndyke, and whose daughters are now making some excellent long time records.

This sale affords a great opportunity for selection of young females bred in some of the greatest producing lines of the breed.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OLD TUBERCULIN TESTED AND SOLD SUBJECT TO RETEST BY THE BUYER.

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California Breeders Sales and Pedigree Co.
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Bred in the richest Aaggie Acme-De Kol of Valley Mead cross, he should be one of the greatest young sires of the breed.

Five of his seven nearest dams average:

Butter	2 Years	2,040.97	Pounds
Milk	2 Years	41,547.20	Pounds
Butter	1 Year	1,130.66	Pounds
Milk	1 Year	23,096.60	Pounds

His seven nearest dams average:

Butter	7 Days	30.47	Pounds
Milk	7 Days	627.60	Pounds

His calves are just what we could expect from a long succession of great sires and dams, and in their present state of development fulfill every promise in the pedigree of their great sire.

Good business judgment will eventually prompt you to place at the head of your herd a bull of Aaggie Acme-De Kol of Valley Mead breeding.

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Fred Hartsook, LANKERSHIM, CALIF. and A.W. Morris & Sons Corporation, WOODLAND, CALIF.

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Catalog tells all—*write.*

Caution! U. S. Bulletin 201 shows that vibration of the bowl causes *cream waste!* The Melotte bowl is *self-balancing.* Positively cannot get out of balance therefore cannot vibrate. Can't remix cream with milk. *The Melotte has won 264 Grand and International Prizes.*

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Write for new Melotte catalog containing full description of this wonderful cream separator and the story of M. Jules Melotte, its inventor. Don't buy *any* separator until you have found out all you can about the Melotte and details of our 15-year guarantee which is infinitely stronger than any separator guarantee. Write TODAY.

Runs so easily, bowl spins *25 minutes* after you stop cranking unless you apply brake. No other separator needs a brake. Bowl chamber is *porcelain lined.*

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CALIFORNIA'S GREATEST LIVESTOCK EFFORT

(Continued From Page 463.)

show and was expected to win the final purple. However, when it came to the senior championship she was set down below the winning two year old, a good sort, to be sure, but in no way as satisfactory a kind as the Jacks cow. Bocaldo Beauty at least had the satisfaction of downing Lady Joy 2d, grand champion at Portland last year.

The 11 two year olds staged one of the best shows seen in the west. The judge favored the Cook entry, a heifer of considerable scale, a bit off the ground and fronted with a head that lacked sweetness, but quite well covered, over the undeniably attractive Ruth Domino, very deep and very thick and very sweet. Howard was forced to take third rating with his good heifer that won her class at Sacramento. She is a good kind and were she a little smoother about the tail would go far in most any company. Ken-Caryl was fourth with a heifer that handled well over a deeper, well balanced but somewhat smaller heifer from the Rule herd.

Prior "dope" was rather upset when the eight senior yearlings were up for adjucation. Cook came out winner with a rather plain sort that had the redeeming factor of size. Baldwin was in second and Briggs was third, reversing the order at Sacramento, while the state fair winner was set down to fourth place. Some of the "talent" is still trying to "savvy" the placings. Howard was fifth with a heifer that has a lot of style but rather too much daylight under her.

Fifteen cracking good junior yearlings staged as pretty a battle as one would care to see. When the smoke cleared away Cazier's Standard Eyes 4th, was wearing the blue. Howard was in second with a heifer that handled none too well, and Briggs held down third place with his lovely Miss Donald 34th. This last named heifer has made a marvelous improvement since the state fair and she had friends for a higher rating. Cazier was fourth with a mighty sweet little lady that was somewhat handicapped in size. Ken-Caryl was fifth and Cook sixth.

The 17 senior heifers made up the largest Hereford class yet seen in this state. Cazier won the top two ratings with heifers of nice type, the first having the attractive head, stronger top, more substance and greater size. Cook was in third with a nice young thing, and the University, showing the largest one in the class, landed fourth, its entry being a bit up in the air and lacking in bone.

The junior heifers made an attractive class but not especially strong.

Exhibitors: H. A. Balwin, Pleasanton; H. M. Barngrover, Taylorsville; A. H. Barnum, Moro, Oregon; Wm. Briggs & Son, Dixon; John A. Bunting, Jr., Mission San Jose; J. H. Cazier & Sons Co., Wells, Nevada; A. B. Cook, Townsend, Montana; Diablo Stock Farm, Danville; H. H. Gable, Esparto; Chas. S. Howard, Willits; Frank R. Howard, Willits; Romie C. Jacks, Monterey; Ken-Caryl Ranch Co., Littleton, Colorado; John B. McNerney & Sons, Carleton, Oregon; Mission Hereford Farm, Mission San Jose; Chas. Rule, Jenner; Sierra Vista Vineyard Co., Minturn; Henry Thiessen, Sweetwater, Idaho; University of California, Davis.

The awards follow:

Aged bull—1, Roe-Hampton 34th, Rule; 2, Beau Blanchard 48th, McNerney; 3, Carlos 146th, Ken-Caryl; 4, Junior Grove, Diablo Stock; 5, Woodford 34th, Jacks; 6, Frederick Fairfax, Sierra Vista.

Two year olds—Panama 110th, Cook; 2, Marcus Fairfax, Ken-Caryl; 3, The Peer, Mission; 4, Beau Carlos 29th, Cook; 5, Lincoln Domino, Briggs.

Senior yearling bull—1, Panama 126th, Cook; 2, Real Patrician, Barngrover; 3, Rupert's Model 14th, Thiessen; 4, Louis Fairfax, Gable; 5, Donald Blanchard, McNerney; 6, Crimean 1st, Jacks.

Junior yearling bull—1, Blanchard 1st, Cazier; 2, Don Domino, Baldwin; 3, Panama 129th, Cook; 4, Mischief Fairfax, Howard; 5, Rupert's Model 19th, Thiessen; 6, Sonoma 21st, Rule.

Senior bull calf—1, Panama 140th, Cook; 2, Blanchard 4th, Cazier; 3, Laurel Perfection 2d, Jacks; 4, Mission Wing, Bunting; 5, Glenwood, Jacks; 6, Blanchard Donald, McNerney.

Junior bull calf—1, Dales Rupert, Briggs; 2, Mission Van, Mission; 3, Red Rupert, Briggs; 4, J. C. Fairfax, Ken-Caryl; 5, Marvel's Pride 15th, Diablo; 6, Beau Panama 11th, Cook.

Aged cow and calf—1, Miss Joy, Cook; 2, Empress Fairfax, McNerney; 3, Dixie Queen, Barngrover.

Aged cow—1, Bocaldo Beauty, Jacks; 2, Lady Joy 2d, Cook; 3, Vanity Belle, Thiessen; 4, Dorothy, Ken-Caryl; 5, Anxiety Fairfax, Gable.

Two year olds—1, Princess Panama 2d, Cook; 2, Ruth Domino, Jacks; 3, Belle Donald 21st, Howard; 4, Queen's Mischief, Ken-Caryl; 5, Queen Stanley 2d, Rule.

Senior yearling heifer—1, Lady Panama 95th, Cook; 2, Pansy Domino, Baldwin; 3, Miss Donald 31st, Briggs; 4, Carnation 4th, Cazier; 5, Miss Mansell 159th, Howard; 6, Perfect Queen 30th, Thiessen.

Junior yearling heifer—1, Standard Eyes 4th, Cazier; 2, Lady Fairfax 20th, Howard; 3, Miss Donald 34th, Briggs; 4, Aurora 2d, Cazier; 5, Duchess Domino, Ken-Caryl; 6, Lady Panama 100th, Cook.

Senior heifer calf—1, Aloha 2d, Cazier; 2, Miss Defiance 7th, Cazier; 3, Lady Panama 105th, Cook; 4, Ora Fairfax, California; 5, Rebecca 2d, Ken-Caryl; 6, Bonnie May, Thiessen.

Junior heifer calf—1, Bonnie Jane, Thiessen; 2, Lady Panama 108th, Cook; 3, Sylvia Fairfax, Ken-Caryl; 4, Miss Bonnie Lad, Barnum; 5, Mischievous 35th, Rule; 6, Mabel Blanchard 2d, McNerney.

Senior champion bull—Panama 110th; reserve, Rochampton 34th.

Junior champion bull—Blanchard 1st; reserve, Panama 140th.

Senior champion cow—Bocaldo Beauty; reserve, Princess Panama 2d.

Junior champion heifer—Lady Panama 95th; reserve, Standard Eyes 4th.

Grand champion bull—Blanchard 1st; reserve, Panama 110th.

Grand champion female—Lady Panama 95th; reserve, Bocaldo Beauty.

Aged herd—1, Cook; 2, Ken-Caryl; 3, Thiessen; 4, Jacks.

Breeders' young herd—1, Cazier; 2, Cook; 3, Thiessen; 4, Barngrower.

Calf herd—1, Cazier; 2, Cook; 3, Thiessen; 4, Mission.

Get of sire (4)—1, Cook; 2, Cazier; 3, Thiessen; 4, Barngrower.

Produce of dam (2)—1, Cook; 2, Barngrower; 3, Thiessen; 4, McNerney.

The Shorthorns

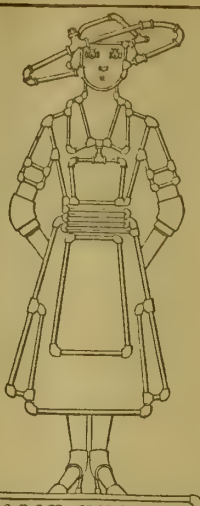
While the Shorthorn exhibitors did not muster as many entries as their Whiteface contemporaries they pointed with a great deal of pride to the fact that they had almost as many and that it was a straight California Shorthorn show. Most of the herds had met at Sacramento earlier in the season but at the final show they were forced to measure strength with several new exhibitors and as a consequence several changes developed from the Sacramento placings. Dean C. F. Curtiss of the Iowa state agricultural college, a Shorthorn breeder of international fame and the president of the world's greatest livestock show, the International, officiated as judge and succeeded in allotting the various awards in a manner that left few sore spots. On the whole the judging was more satisfactory than at the state fair.

Five aged bulls opened up the Shorthorn festivities. Blackhawk Villager, five days too old to show as a two year old, and last year's champion at Los Angeles, was rather outstanding because of his admirable type, though it was admitted that he could have carried considerably more flesh. He is surely a bull of rare character and quality. The red imported Scottish Lord went into second over the somewhat smaller but thick and smooth fellow shown by Vaughn. Pacheco was fourth and Miller was fifth.

The three two year olds yielded to the very low set thick roan from the Ormondale herd. This bull has a lot of real meat under his good handling hide but he needs a stronger head to carry him into hot company. It was his thickness that made him senior champion over the winner of the aged class. Glide was second with a stylish but upstanding sort over the good handling red shown by Miller that suffered for lack of a better spring of rib.

There were just enough senior yearlings to take the five ribbons. The pick of the lot was easily the outstanding white Pacheco Lad 215th that was grand champion at Sacramento and came most awful near repeating. He is a bull that is hard to overlook in any company because of his great quality and smoothness. If his hooks laid in a wee bit neater he would present little to criticize. Miller was in second place with one lacking width behind, and Caledonia Farms took the next place with a youngster of splendid type but a little plain at the tail. Glide was fourth over a white of most unusual scale.

The next class introduced to the public Collynie Prince Lavender, the bull that was personally selected and imported last fall by Easton & Ward from the noted Duthie herd in Scotland, the herd that is recognized as the fountain head, so to speak, of Shorthorn excellence. This beautiful white yearling won his class hands down. He is a beautifully fronted bull, extremely good at the shoulder and in the crops, deep in chest, strong of stop, nice in the flank, and, aside from a little plainness at the rump,



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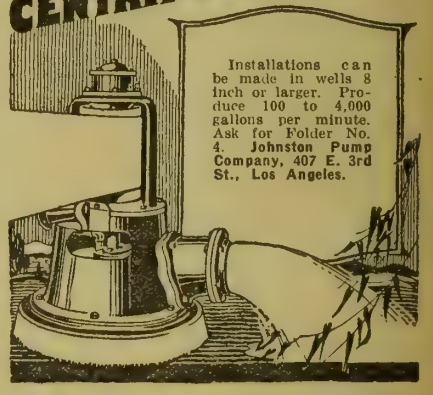
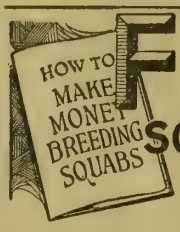


Installations can be made in wells 8 inch or larger. Produce 100 to 4,000 gallons per minute. Ask for Folder No. 4. **Johnston Pump Company, 407 E. 3rd St., Los Angeles.**



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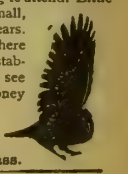

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which seems to be improving, is a most promising youngster. He has ample scale, quite thick, but because of heavy service does not show as smooth as could be asked. Straloch Farm was second with a blocky, good handling calf. Dibblee was third and fourth and a red calf from the Blackhawk Ranch brought up the rear.

The six senior calves were headed by the flashy son of Caledonia that won his class at the state fair. He is a great prospect, in every way a credit to his illustrious sire, and while some did not realize it at the time the junior champions were showing, he received serious consideration. Miller had a good white calf in second and another Caledonia calf was third. Glide was fourth and Dibblee fifth.

The juniors were topped by a beautifully turned calf from the Caledonia herd. He had to be a good one to beat the Straloch entry that stood next. The other four calves were in too swift company.

When the aged cows with calves were called in only one appeared, and those at the ringside who had expected to again see Little Sweetheart were disappointed. Mr. Glide did not enter her at this show as he felt that she had accomplished enough and showed his sportsmanship by passing up a sure chance for another victory to give Shorthorn matrons a chance to wear the purple.

The dry cows, five in number, had an easy top in the great Glenbessie 3d, full of character, very thick and very smooth. A full sister to the famous Little Sweetheart was shown into second place by Ormondale and a very deep and thick matron from the Glide herd third. Bond was fourth and fifth.

The senior and grand champion female appeared at the head of the two year olds, a very desirable white from the Pacheco herd. This "leading lady" is very sweet, nice in her lines and satisfactorily upholds the beef making argument for the Shorthorn breed. Glide was second with a heifer full of quality over a thicker fleshed roan from the herd that furnished the winner.

There were nine senior yearlings and, aside from the top few, were not overly pleasing. Pacheco won with a white of good type and more scale over a very compact and sweet red heifer from the Caledonia herd. Dibblee was third and Ormondale had an attractive roan daughter of Imp. Gartley Landsdowne in fourth. Glide stood fifth.

Eleven junior yearlings paraded before the judge and were led by one of the most satisfactory little ladies seen in many a day, the beautiful roan Mary Ann Rush, junior champion at Portland last year and holder of the same honor at San Francisco this year. She is owned by the university, and about the only fair criticism of her is that she might be a little bigger. Caledonia was second with a cracking good roan. Pacheco was next with a thick roan and Easton & Ward were fourth with a good white. Dibblee was fifth with a roan that would have stood higher had she a stronger top.

The largest class of the show was made up of the 14 senior heifers, and 14 good ones they were too. Straloch won with a heifer of great depth and thickness, evenness and balance, that had more size than those just below her. Miller was second with a white that has improved a lot since the earlier shows but that looked a bit out of place above the thicker, smoother red shown by Caledonia. The latter heifer is a rare type. Pacheco was fourth with a well covered roan. Dibblee was fifth and Miller sixth with a roan heifer that might have stood higher.

The ten juniors again conceded first honors to the remarkable white baby shown by Caledonia Farms.

One of the outstanding features of the Shorthorn exhibit was the splendid showing California breeders made in the group classes, especially in the younger things. Pacheco took the aged herd and the breeders young herd and Caledonia took the calf herd, the get of sire and the produce of dam.

Exhibitors: Wm. Bond, Newark; Caledonia Farms, West Sacramento;

(Continued on Page 487.)

THE SAN FRANCISCO BULLETIN

$1000 PUZZLE PICTURE

Extra Copies of The Puzzle Picture Sent Free on Request.

HOW MANY OBJECTS IN THIS PUZZLE START WITH THE LETTER "S"

The above picture contains a number of visible objects beginning with the letter "S." Take a good look at the picture. See, there are all sorts of objects beginning with the letter "S," like saw, spoon, sack, etc. Nothing is hidden and you don't have to turn the picture upside down or sidewise. Start making a list of all visible objects in the picture, the names of which begin with the letter "S."

Fifteen cash prizes will be awarded for the fifteen best lists of words submitted. The answer having the largest and nearest correct list of visible objects shown in the picture which begin with the letter "S" will be awarded first prize; second best, second prize, etc.

Write down those "S-Words" you have in mind right now. Now is the time to start.

Everybody Join In

The San Francisco Bulletin announces today a most interesting and amusing puzzle—a puzzle that is different. It is a great big fun game in which all can participate, from the youngsters to grandpa and grandma. It really is not a puzzle at all for all the objects have been made perfectly plain with no attempt to disguise or hide them. None are so small but that the poorest eyesight can see them. It is a test of your skill, your ability to find the visible objects beginning with the letter "S" in the picture to determine the prize you win. Gather all the members of your family together this evening, give each one of them a pencil and a sheet of paper, study the picture carefully and see who can find the most "S-Words."

Open To All—Costs Nothing to Try

The Bulletin invites you Mr. and Mrs. Reader and family to join in this puzzle game. We know you will find it the best game ever, full of fun and excitement, educational and interesting to all. Now, that is saying a lot, but wait until you have tried it. We venture to say you will agree with us that you never have had so much fun. It doesn't look hard, and it isn't hard. It is an interesting picture just bubbling over with fun for all.

THE PRIZES

The Premier Prizes

Winning answers will receive prizes as follows:

	Prizes given if no subscriptions are sent.	Prizes given if ONE subscription is sent.	Prizes given if TWO subscriptions are sent.
1st Prize	$35.00	$350.00	$1,000.00
2nd Prize	35.00	350.00	1,000.00
3rd Prize	35.00	350.00	1,000.00
4th Prize	25.00	250.00	500.00
5th Prize	20.00	150.00	300.00
6th Prize	15.00	75.00	150.00
7th Prize	7.50	40.00	80.00
8th Prize	5.00	30.00	60.00
9th Prize	3.00	20.00	40.00
10th Prize	2.00	15.00	30.00
11th Prize	2.00	15.00	30.00
12th Prize	2.00	15.00	30.00
13th Prize	2.00	15.00	30.00
14th Prize	2.00	15.00	30.00
15th Prize	2.00	15.00	30.00

OBSERVE THESE RULES

1. Any man, woman or child, who is not an employee of the San Francisco Bulletin, or a member of an employee's family, may submit an answer. It costs nothing to try.
2. All answers must be mailed by November 19th, 1921, and sent to Robt. Brantone, Puzzle Manager, San Francisco Bulletin.
3. All lists of names should be written on one side of the paper only and numbered consecutively. Write your full name and address on each page in the upper right hand corner. Do not write subscribers' names or anything else on same paper with list of words. Use a separate sheet.
4. Only such words as appear in the English dictionary will be counted. Do not use obsolete words. Where the plural is used, the singular cannot be counted, and vice versa.
5. Words of the same spelling can be used only once, even though used to designate different objects. An object can be named only once. However, any part of the objects may also be named.
6. Do not use hyphenated or compound words, nor words formed by the combination of two or more complete English words, where each word in itself is an object.
7. Answers having the largest and nearest correct list of names of visible objects shown in the picture that begin with the letter "S" will be awarded First Prize, second, Second Prize, etc. Neatness, style or hand-writing have no bearing upon deciding the winners.
8. Candidates may co-operate in answering the puzzle, but only one prize will be awarded to any one household; nor will prizes be awarded to more than one of any group outside of the family where two or more have been working together.
9. In the event of a tie for any prize offered, the full amount of such prize will be awarded to each tied participant.
10. New subscriptions only by mail or carrier will be accepted. A new subscription is anyone who has not been receiving the San Francisco Bulletin by mail or carrier since November 3rd.
11. All new subscriptions will be carefully verified by The Bulletin Puzzle Manager. Candidates sending in old subscriptions as new will positively forfeit the credit on such subscriptions as qualifying for the bonus rewards.
12. All answers will receive the same consideration, regardless of whether or not a subscription for The San Francisco Bulletin is sent in.
13. Three well known Californians, having no connection with the San Francisco Bulletin, will act as judges and decide the winners, and all participants agree to accept the decision of the judges as final and conclusive.
14. The judges will meet on November 29th, and announcements of the prize winners and correct list of words will be published in the San Francisco Bulletin just as quickly thereafter as it is possible.

NOTE—In remitting, use checks, money orders or bank drafts, payable to order of THE SAN FRANCISCO BULLETIN, NOT TO INDIVIDUALS.

You Can Win $1000.00

This "S-Word" picture puzzle game is a campaign to increase the popularity of The San Francisco Bulletin. It costs nothing to take part. It is not a subscription contest, and you do not have to send in a single subscription to win a prize.

If your list of "S-Words" is awarded first prize by the judges you will win $35.00; but if you would like to win more than $35.00, we are making the following special offer during this publicity and booster campaign, whereby you can win bigger cash prizes by sending in ONE or TWO new six months' subscriptions (maximum two) to The San Francisco Bulletin.

HERE'S HOW: If your answer to the "S-Word" picture puzzle is awarded first prize by the three independent judges, and you have sent in ONE new six-months' subscription to The San Francisco Bulletin (new, not renewal), you will receive $350.00 instead of $35.00. (See Rule 10.) Or, if your answer is awarded first prize by the judges, and you have sent in TWO new six-months' subscriptions, or ONE new full year's subscription to The San Francisco Bulletin, you will receive $1000.00 in place of $35.00.

How is that for a liberal offer? But, look, there are three of these large prizes which we will call "The Three Premier Prizes," Therefore, if your answer is awarded First, Second or Third Prize, and you have sent in TWO new six-months' subscriptions, or ONE new yearly subscription, you will win $1000.00, and then, too, we will give extra amounts on all other prizes in the same manner. If your answer is qualified by two subscriptions and you win fourth prize, you will win $500.00, and so on down. (See third column in the prize list above.)

TRUTH IN THE NEWS is The San Francisco Bulletin's slogan. It is the only Pacific Coast newspaper which utilizes all of the three great news services—the Public Ledger Service, The Associated Press, and United Press.

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ROBT. BRANTONE
Puzzle Manager

THE SAN FRANCISCO BULLETIN

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Report of State Dairy Cow Competition, September, 1921

By Prof. F. W. Woll

List of cows producing 50 pounds of butter fat or over during the month:

Adohr Stock Farms, grade Guernseys: C-115, 1,128 lbs. milk, 51.89 lbs. fat.

Arden Certified Dairy, grade Holsteins: 89, 1,038 lbs. milk, 55.01 lbs. fat; 249, 1,200, 50.40.

Anita M. Baldwin, Holsteins: Lady Lilith Walker DeKol, 2,051 lbs. milk, 67.88 lbs. fat; Thelma Riverside Walker, 1,512, 50.95.

Dean Beeman, Holsteins: Jacobina, 1,856 lbs. milk, 59.02 lbs. fat; Capunista, 1,516, 51.08; Bernice NaDean DeKol, 1,410, 50.63.

Eugene Biondini, grade Jerseys: Midget, 1,242 lbs. milk, 70.79 lbs. fat; Rachel, 1,272, 69.96; 62, 1,041, 59.34; Shortie's Best, 849, 57.73; Brownie, 1,056, 53.86; Twinnie, 954, 53.42; Hannah, 873, 53.25; Judy, 996, 50.80.

N. L. Browning, Holsteins: Segis DeKol Bess, 1,706 lbs. milk, 58.01 lbs. fat.

Leo Christen, grades: Mama Jersey, 1,011 lbs. milk, 59.65 lbs. fat; Newberg, 1,464, 55.63; Black Beauty, 1,131, 53.16; Mousie, 918, 52.33.

W. F. Early, grades: Butterfly, 1,038 lbs. milk, 52.94 lbs. fat; Pencil, 1,014, 50.70; Roany, 1,230, 50.43.

J. A. Genzoli, grades: Dollie, 1,086 lbs. milk, 64.07 lbs. fat; Jill, 837, 59.43; Blue Spot, 1,215, 58.32; Fannie, 888, 55.94; Pansy, 891, 51.68.

Earl Graham, Holsteins and grades: Princess Maide Veeman, 2,131 lbs. milk, 73.53 lbs. fat; Niger, 1,569, 65.89; Pinkie, 1,500, 60.00; Gamma Sarcastic of L., 1,635, 61.84; Hauser, 1,530, 56.61; May Walker G. Korndyke, 1,291, 50.47; Pansy, 1170, 50.31.

H. G. Gross, Jerseys: Lydia's Valentine, 748 lbs. milk, 53.30 lbs. fat.

J. B. Harbers, grade Jerseys: Daisy, 894 lbs. milk, 57.22 lbs. fat; Nellie, 894, 53.64; Polly, 996, 51.79.

Nate Hauck, grades: Brindle, 1,338 lbs. milk, 76.27 lbs. fat; Chub, 1,386, 67.91; Red, 1,281, 67.89; Lily, 1,116, 65.84; Speck, 1,308, 58.86; Nigger, 1,317, 56.63; Bird, 1,047, 55.49; Bally, 1,602, 54.47; Slow, 930, 52.08; Ring, 1,005, 51.25; Brownie, 927, 50.06.

C. D. Hayworth, Jerseys: Lorna of Rico, 1,031 lbs. milk, 50.19 lbs. fat.

A. B. Humphrey, Guernseys: Calla Grove Itchen, M., 1,017 lbs. milk, 62.25 lbs. fat.

Peter Iversen, grades: Old Jersey, 918 lbs. milk, 60.59 lbs. fat; Kicker, 1,260, 57.96; Poor, 918, 53.24; Holstein Heifer, 1,077, 52.77; Yellow Jersey, 798, 51.07; Marcella, 879, 50.98; Baby, 774, 50.31.

Los Angeles County Farm, Holsteins: Whittier Pontiac N. Iv., 1,663 lbs. milk, 58.21 lbs. fat.

Palo Alto Stock Farm, Holsteins: Kiatta Pontiac Pride, 2,756 lbs. milk, 79.64 lbs. fat; Thelma Hartog S. DeKol, 1,958, 68.52; Irene Segis Pontiac, 1,741, 65.80; Alta Pappoose, 1,787, 60.77.

F. F. Pellissier, Holsteins and grades: Princess Tolia Walker, 1,539 lbs. milk, 60.02 lbs. fat; 2479, 1,902, 58.96; 2403, 1,395, 57.20; 2640, 1,617, 56.60; 1772, 1,551, 52.73; Mamie Pontiac, 1,164, 50.05.

M. L. Pontoni, grade Jerseys: Paddy, 1,002 lbs. milk; 58.12 lbs. fat; Rolly, 1,140, 57.00; Klamath, 999, 54.95; Beauty, 924, 52.67; Mabel, 1,074, 51.55.

H. F. Richards, Jerseys: Victor's Lady Queen II, 988 lbs. milk, 58.08 lbs. fat; Teddy R.'s Silver Beauty, 1,044, 55.72; Teddy R.'s Poppy Girl II, 806, 50.60.

Olga Saxer, Holsteins: Moorland Colantha Rose, 1,740 lbs. milk, 57.24 lbs. fat.

W. Terkelsen, grade Jerseys: Laura, 927 lbs. milk, 50.06 lbs. fat.

Completed Ten-Month Records

No.	Name of Cow.	Age Yr.-Mo.	Days in Milk beg. of Record	Milk Lbs.	Butterfat Pct.	Butterfat Lbs.
1.	651, gr. H.	....	9	18,484	3.60	666.11
2.	Leota of Sunny S. W. G.	5-9	5	9,641	5.60	539.74
3.	C-329, gr. G.	....	5	8,541	5.50	469.40
4.	Marie of Golden G. G.	3-4	8	7,094	5.29	374.99
5.	C-88, gr. G. (1)	M.	5	7,078	5.20	368.38
6.	C-86, gr. G. (2)	M.	5	8,277	4.23	350.08
7.	Vera of Golden G. G.	3-7	6	4,973	4.95	245.01
8.	May Queen of A. G.	2-4	5	4,474	5.16	230.70
9.	976, gr. H. (1)	....	60	9,584	4.27	409.63
10.	963, gr. H. (3)	....	86	7,095	4.89	346.83
11.	970, gr. H. (4)	....	10	9,703	3.52	341.24
12.	968, gr. H. (4)	....	6	8,343	4.06	338.55
13.	43, gr. H. (3)	....	86	8,907	3.54	315.12
14.	971, gr. H. (3)	....	67	6,642	4.69	311.26
15.	890, gr. H. (5)	....	102	5,311	4.24	225.35
16.	19, gr. H. (6)	....	120	4,902	4.35	213.14
17.	Anoakia Walker Johanna H.	3-4	5	12,207	3.54	432.16
18.	Anoakia of R. H.	2-7	5	10,050	3.69	371.02
19.	Canary Fanny S. V. H.	2-11	5	16,048	2.99	480.33
20.	Lady Veeman H. T. H.	2-8	7	13,361	3.56	475.85
21.	Skylark Sarcastic gr. H.	4-8	11	9,508	4.33	411.28
22.	Canon Sarcastic, gr. H.	4-6	5	8,022	3.88	311.21
23.	Clothilde Sarcastic, gr. H.	4-11	5	7,983	3.80	303.53
24.	Emmy Hengerveld, gr. H.	2-8	5	7,928	3.71	294.00
25.	Goldy Pontiac Walker Col. H.	2-10	6	7,175	3.35	240.52
26.	112, gr. H.	7-	5	11,645	4.89	569.86
27.	Silverine P. Duchess, J.	4-3	5	8,770	5.91	518.84
28.	Jewell of Tintagel, J.	1-11	5	7,315	4.78	349.92
29.	Teresa, gr. H. (7)	9-	5	9,400	4.04	379.92
30.	Bill, gr. H.	1-9	5	8,918	4.12	368.03
31.	Primo, gr. H.	2-1	5	10,085	3.61	363.76
32.	General, gr. H.	5-0	5	8,229	4.40	361.86
33.	Miss Segis Pont. W. H.	2-3	6	14,773	3.67	542.13
34.	Raleigh's Peggy M. J. (8)	5-2	5	7,621	6.41	488.44
35.	Blossom, gr. H.	2-8	5	15,804	3.31	522.57
36.	Orange, gr. H.	2-9	6	10,696	4.27	457.14
37.	Ventura, gr. H.	5-0	5	12,173	3.68	448.18
38.	Butte, gr. H. (9)	4-2	7	10,093	3.85	388.71
39.	663, gr. H.	....	14	15,558	3.59	560.05
40.	786, gr. H.	....	13	15,863	3.17	503.17
41.	Brudorin, H.	10-2	5	17,017	3.39	577.16
42.	1943, gr. H.	....	9	12,768	3.57	455.46
43.	1681, gr. H.	....	39	14,543	3.05	444.05
44.	Miss Pontiac M. P. H.	2-4	7	13,786	3.14	433.38
45.	Ramona, gr. H.	6-0	5	15,650	3.41	534.86
46.	Wild Cow, gr. J.	2-11	5	8,155	6.37	519.11
47.	Jap, gr. J.	6-0	11	10,609	4.61	489.09
48.	Rose, gr. J.	7-	5	11,307	3.86	435.92

(1) 263 days. (2) 286 days. (3) 243 days. (4) 212 days. (5) 267 days. (6) 258 days. (7) 300 days. (8) 301 days. (9) 262 days.

Owners of cows: Nos. 1 and 39-40, Napa State Hospital, Imola; 2-8, Adohr Stock Farms, Van Nuys; 9-16, Arden Certified Dairy, El Monte; 17-18, Anita M. Baldwin, Santa Anita; 19-20, Burr Farms, Los Angeles; 21-25, J. M. Christen, Pacheco; 26, El Mirador Dairy, Pasadena; 27-28, M. Fortini, Orland; 29-32, S. G. Gambonini, Petaluma; 33, Earl Graham, Compton; 34, H. G. Gross Eureka; 35-38, L. A. County Farm, Hondo; 41-44, F. F. Pellissier, Whittier; 45, University of California, Davis; 46-47, H. L. Wakeham, Santa Ana; 48, R. H. Walrath, El Centro.

The reports for September so far received show that 376 cows in milk during the full month produced an average of 868 pounds milk and 40.07 pounds butter fat (average number of days in milk at the beginnig of the month, 193). The highest producing cow for the month was a pure bred Holstein Kiatta Pontiac Pride, owned by Palo Alto Stock Farm (2,756 pounds milk, 79.64 pounds butter fat, at 123 days from freshening). Four cows produced between 70 and 80 pounds butter fat during the month and 15 between 60 and 70 pounds.

The prize offered by the California Cultivator, Los Angeles, for the highest average production by the five grades for the month of September was won for the second time by N. Hauck of Alton. The average production of the five highest grades eligible to compete for this prize was 59.16 pounds butter fat during the month (average milk 1,216 pounds test, 4.86 per cent; average distance from freshening 126 days). The production of the individual cows ranged from 52.1 to 67.9 pounds butter fat. These cows stood first among similar groups of five grades in 21 dairy herds in different parts of the state that competed for the Cultivator prize the past month. The average production of butter fat for nine of the groups came about 50 pounds, the lowest producing grades averaging 27.60 pounds. Five grades owned by the following dairy farmers produced an average of over 50 pounds fat during the month, viz., N. Hauck, 59.13 lbs.; Earl Graham, 56.23 lbs.; P. Iversen, 55.13 lbs.; M. Pontoni, 54.86 lbs.; Leo Christen, 53.73 lbs.; University Dairy, 52.53 lbs.; J. A. Harbers, 51.27 lbs.; J. A. Genzoli, 51.08 lbs.; and W. D. Early, 50.01 lbs.

The following cows completed the record period of ten months (305 days) in the competition during the past month. They are given in the order of their owners, alphabetically arranged, except for the record cow for the month, which is placed first:

Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins

November 3, A. W. Morris & Sons, Inc., Woodland.
November 9, Palo Alto Stock Farm, Palo Alto.

Herefords

November 1, J. H. Cazier and Sons, Sacramento.

According to the Ayrshire Digest of October 15, two California Ayrshires headed their respective classes for the month of July. The two cows are the senior four year old, California Barcheskie, owned by the University of California, and the senior two year old, Elkhorn Kirsty, owned by the Elkhorn Farm, Watsonville. The former headed her class with 81.74 pounds fat and the latter had 70.47 pounds.

E. A. Gammon of Hood has sold his Hope Farm and entire hard of registered Holsteins to Max Manlock of San Francisco. The Holstein herd consisted of 25 head that were the tops in the Kiesel sale last spring.

One of the largest deals in grade Holsteins reported in several months was the sale of 140 head of cows from the G. B. Borcher herd, Sacramento, to Archer and Scarlett. The buyers are developing a large dairy plant in the West Sacramento district. It is reported that the 140 head sold for an average of $130.

The annual meeting of the California Cattlemen's Association will be held at San Francisco, December 10. Secretary Hagen reports that the membership in the association is increasing rapidly and that now since the association is for the first time rendering some definite and practical assistance to the cattlemen he has hopes of increasing the membership to 4,000 during the coming year.

The dispersal sale of the W. J. Bemmerly Herefords last week proved a disappointment. About 150 head were offered but owing to the small crowd, not more than half of the offering was disposed of for an average of $180.

A senior Berkshire boar pig bred by the Italian Vineyard Co., Guasti, was second in class at the recent National Swine Show held at Peoria, Illinois.

Imp. Corston Masher, senior champion Shorthorn bull at the recent state fair, owned by the Warm Creek Land and Livestock Co., Wells, Nevada, repeated his winning at the Utah state fair.

W. S. Guilford, Butte City Ranch, Butte City, says that farmers of Northern California are manifesting more interest in all kinds of registered livestock than at any time he can recall.

Thirty-five Holstein females sold in the annual sale of the Stanislaus County Holstein Breeders' Association at Modesto last week for an average of $297. Only two bulls were offered. No bids were received for one and the other was bid in by the consignor, H. E. Cornwell, for $5,000.

The threatened railroad strike is holding up shipment of two fine young Holstein bulls from the Maxwell Farms, Hollywood, to the East. One calf by Tritomia Pietertje Ormsby, the champion of this year's National Dairy show, and out of Joy Ormsby Skylark, a daughter of the great Sir Ormsby Skylark, with a junior two-year-old rec-

(Continued on Page 487)

Red Top GUARANTEED **Steel Fence Posts**

RED TOPS save you money in three ways—in setting, in repairs, and in replacements.

It costs one cent to set a RED TOP against 10 to 20 cents for a wood post. No holes to dig; it drives like a stake. Holds staples always tight—does not burn, rot or break. Built for years of service.

If you want to know fence satisfaction try RED TOPS on your next new fence—or in repairing an old fence. Made in angles and tees.

Send for Circular giving all the facts

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Prevent **Blackleg** by using **Blacklegoids**

Scientifically Prepared and Tested Blackleg Vaccine in Pill Form

Consult your veterinarian or druggist. Write for free booklet on blackleg. No. 351.

Animal Industry Department of
Parke, Davis & Company
DETROIT, MICH.

IMPORTED
Corston Masher

Senior Champion at 1921 California State Fair heads our selected herd of
SHORTHORNS
and we can offer some rare bargains in Scotch and Scotch topped cows and heifers, some with calves at foot, and rebred to the above bull. Most of the heifers are by Double Callant, a grandson of Avondale. Write us for prices and particulars.

Warm Creek Land and Livestock Co.
J. Selby Badt, Pres. & Mgr., Wells, Nevada

A pipe won't burn your tongue if you smoke P. A.!

Get that pipe-party-bee buzzing in your smokesection! Know for a fact what a joy'us jimmy pipe and some P. A. can and will do for your peace and content!

And, you can wager your week's wad that Prince Albert's quality and flavor and coolness—and its freedom from bite and parch (cut out by our exclusive patented process)—will ring up records in your little old smokemeter the likes of which you never before could believe possible!

You don't get tired of a pipe when it's packed with Prince Albert! Paste that in your hat! Each fire up makes you happier! My, my, how P. A. and a jimmy pipe do ring the bell!

Prince Albert is sold in toppy red bags, tidy red tins, handsome pound and half pound tin humidors and in the pound crystal glass humidor with sponge moistener top.

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PRINCE ALBERT
the national joy smoke

Topped Market Every Time

Geo. H. Darrington, Honey Creek, Ia., has topped the Omaha market four times this year—every time he shipped—with Shorthorns of his own raising, twice with steers, once with heifers and once with cows that were twelve years old when marketed. They were purebreds.

It pays to grow Shorthorn beef.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION
13 Dexter Park Ave., Chicago, Ill.

Straloch Farm
Davis, Cal.
(2½ Miles West on Highway)

Shorthorns
Herd Sires:
California Model 635776
Imp. Braywood Collynie 951409

Poland China Swine
Big—Prolific—Easy Feeders—
The Farmers' Kind.
Prices Reasonable

Hampshire Sheep

The top and the high average at the 1921 Davis sale. The kind that sire early market topping lambs. We have what you want at prices you can afford to pay.

Visit the farm at any time.

J. I. Thompson, Manager — C. Harold Hopkins, Owner

A. M. Easton — Wm. A. Ward
Blackhawk Ranch Shorthorn Cattle

One of the most select herds in America. Only Scotch females of the best families headed by
ROAN RADIUM
COLLYNIE PRINCE LAVENDER
Imported direct from the famous Duthie herd.

SHIRE HORSES
A great opportunity for interested parties to buy a stallion at the San Francisco show. For prices and particulars see E. LOVELL, Mgr.
Diablo, Contra Costa Co., California

Rosebud Shorthorns
A Choice Herd of Fifty Females
Headed by Milmar Stamp
a Cruickshank Secret

We can now offer a few extra good young bulls that we do not hesitate to recommend. They are well grown and correct in type and quality. We invite you to visit our herd or to write us your needs.

Edinger-Johnston Company
Hood, California
(Just south of Sacramento.)

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The direct selling method from producer to consumer, and a clearing house for over 40,000 subscribers. Weekly Liner rates: Single insertion 4½ cents per word; 45c per issue minimum charge. Cash with Order.

Mail all classified copy to Los Angeles Office.

POULTRY

Continued requests are being received by the California Cultivator for varieties of poultry not advertised in our columns. If any of you, our readers and friends, have any you wish to dispose of, send a small advertisement to this office and you will be doing our readers a service as well as yourselves.

Day Old Pullets—Here is your chance to get day old White Leghorn and Ancona chicks, guaranteed at least 90 per cent pullets. We are taking orders fast for October and November delivery. We also have R. I. Red and Barred Rock chicks but do not separate the sex. All chicks are from strictly thoroughbred laying stock and are hatched right and shipped by Special Delivery Parcel Post. Send for prices and get your orders in at once. Orange County Hatchery, Santa Ana, California.

LEAD BY TEST

The Queen Incubators after a three years test in a Northern University were found to hatch 9% more chicks than any competing machine among all makes. This should guide you in buying. Write for full particulars and catalogue. Get your name in for our 1922 catalogue on general supplies for Poultryman and Dairyman. Order Baby Chix now. Demand heavy on our Tom Barron White Leghorn.

C. E. HILL COMPANY
418 11th Street Oakland, Calif.

We Are Now Booking Orders for S. C. White Leghorn Baby Chicks, from strong, healthy, vigorous stock. Bred especially for heavy egg production, from two hundred to two hundred and eighty egg strain. If you want strong, healthy baby chicks, place your orders with the Vineburg Hatchery. All baby chicks guaranteed safe delivery. Vineburg Hatchery, Vineburg, California.

It's no wonder so many poultry raisers make a failure of the business. Without any knowledge of raising poultry people will branch out expecting to make a success. By putting in practice the valuable contents of POULTRY FOR PROFIT, $1.00 postpaid, success is assured in the poultry business. Cultivator Publishing Company, Los Angeles, California.

Sly's Single Comb Rhode Island Reds again show their quality, winning at San Fernando and Ventura seven first prizes, two silver cups, many special honors and other ribbons. Am offering a limited number of line-bred cockerels at $7.50, $10.00 and $15.00; excellent breeders. Send for yours today. Albert Sly, 1642 Middleton Place, Los Angeles.

White Leghorn Baby Chicks: Walter Hogan stock. We get all our eggs from one flock of over 4,000 Walter Hogan hens that have been carefully Hoganized. Our specialty is first class White Leghorn chicks that satisfy our customers. We will have chicks every week. Lyon Hatchery, Gardena, California.

White Leghorn Baby Chicks from heaviest laying (Hoganized) stock. Safe delivery live, vigorous chicks guaranteed. No money in advance; pay on delivery. Prices on request. Established 1898. MUST HATCH INCUBATOR CO., 438 Seventh St., Petaluma, California.

Baby Chicks from 227 egg strain of heavy winter laying S. C. White Leghorns. Book your order now for 1922 delivery of guaranteed chicks and hatching eggs. Pullets and breeding stock. Meyer Poultry Farm, Route A, Box 17-C, Modesto, California.

Baby Chicks—Booking now for 1922 delivery. Order early. White Leghorns, R. I. Reds. Brown Leghorns, Barred Rocks. Write for circular. Stubbe Poultry Ranch and Hatchery, P. O. Box 67-E, Palo Alto, California.

Your Opportunity to Start with Black Minorcas. 200 pullets for sale. Act quick as they are priced right and are absolutely the finest Black Minorcas in Santa Cruz County. A. C. Landon, Route 2, box 182, Watsonville, Calif.

For Sale—Barred Plymouth Rocks; prize winners; some extra fine cockerels for sale now. Eggs for hatching in season; satisfaction guaranteed. Mrs. J. W. Snodgrass, Los Olivos, California.

Barred Plymouth Rocks — "Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Vodden, Los Gatos, California.

White Leghorn Baby Chix from Petaluma's heaviest producing stock. We guarantee safe arrival. Literature on request. Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

For Sale: Buff Leghorn cockerels, hens and pullets. Excellent strain of prize winners. W. L. Bartholomew, Chino, California.

Hudson White Leghorns: Cockerels from 200 egg hens. Official records made in five egg-laying contests. Hudson Ranch, Escondido, California.

Anconas, Our Sixth Year—Cockerels, single birds, $3.50 and $5.00. Satisfaction guaranteed. A. S. Wilkinson, Winton, California.

Buff Leghorn Breeding Cockerels. Write M. E. Sayer, Neb. Ave., Caruthers, California.

Watch Us Grow: Fall chicks, Rhode Island Reds, B. Rocks, White and Brown Leghorns and Anconas. E. W. Oblee, Campbell, California.

Success in business is attained by experience and knowledge. The poultry business can be made to pay by following the teachings and information contained in POULTRY FOR PROFIT, $1.00 postpaid. Cultivator Publishing Company, Los Angeles, California.

POULTRY

Baby Chicks—Barred Rocks and Reds 25, $5; 50, $10; 100, $20. We have a hatch off every Sunday. We ship by Special Delivery Parcel Post, pay all charges, safe arrival guaranteed. Order your spring chicks now. Established 1915. Hargett & Son, Route 2, Box C, Compton, California.

FARM LAND FOR SALE

WE WANT "GO-GETTERS"

Sutter Basin is ready for "Go-Getters." It is a practical farming project in crops today. Deep, rich soil with irrigation and drainage system, river and rail transportation. In the heart of the Sacramento Valley. Very liberal terms to men who know how and will work. Write today. Sutter Basin Company, California Fruit Building, Sacramento.

For Sale: 850 acres improved and equipped farm and pasture ranch. Seventy-five cows and modern dairy outfit. Unexcelled market, social and climatic conditions. A bargain. Address the Cultivator or Superintendent Indian Hot Springs, Eden, Arizona.

For Sale—595 acre improved mountain ranch; hog tight, irrigation; no exchange; particulars. R. W. Lipkeman, Box 591, Sonora, California.

For Sale — Ranches, Homes, Acres, etc. List. Wilson Bros., Santa Cruz, California

SEEDS AND PLANTS

Oregon Grown Reset Strawberry Plants for Sale—Extra strong reset strawberry plants, grown on new ground for plants only on rich alluvial soil of Oregon to be sure to give entire satisfaction. New Oregon, Magoon, Gold Dollar, Marshall, Wilson and Clark's Seedling for fall planting. Plants ready middle of November, $1.00 per hundred; $8.00 per thousand; $70.00 per ten thousand and $600.00 per hundred thousand. Orders should be placed at once as supply is only 500,000 plants. Apply to the Padre's Botanical Gardens, 125 S. Milpas Street, Santa Barbara, California.

Berries and Small Fruit Plants, of all standard varieties, grown and shipped direct from my large berry farm here of almost 100 acres. The largest berry farm managed by one person. All plants properly selected from improved and record producing vines, carefully graded and packed; sure to give satisfaction. Now is the time to order to assure early delivery. Twenty-five years of practical experience. State your wants and send for price list today. M. J. Moniz, Berry Specialist, P. O. Box 264, Sebastopol, California.

ROOTED VINES

For Sale — Clicante-Bouchet. Malaga, Thompson Seedless and Zinfandel rooted vines. These vines are guaranteed A No. 1, true to name; certified and from clean producing vines. Chapman & Son, Modesto, California, P. O. Box 906, Phone 663.

Sweet Clover Seed for Sale—Buy direct from the producer and save money. Fine clean seed 15c per lb., cheaper rates on 100 lb. lots. Order early for fall seeding. Write for samples. Address George Forest, Standish, California.

For Fall Planting Carolina strawberry plants, 150,000 strong, vigorous plants best and most productive, good shipper, good crop first year. Enquire or write for prices. Olive Ranch, Lakeside, San Diego County, California.

Strawberry Plants for Sale—Extra strong "Happy Valley" Marshall plants for fall planting vigorous plants that will insure best results. $1.00 per hundred, $8.00 per thousand. Address Jack McCrory, Olinda, Shasta County, California.

For Sale—Cabbage and Cauliflower plants, Rhubarb, Strawberry and other berry plants. Grape vines. Get our prices. The Hopkins Nursery, 153 S. Hartwick Ave., Eagle Rock, California.

Strawberries Six Months in the year. Plant Everbearers, Superb, Progressive; $2.00 hundred. EVERBEARING RASPBERRIES six $1.00. Inspected. Fred Leissler, Route 6, Seattle, Washington.

Cory Thornless Blackberry — I have a limited number of extra good strong plants that will bear first year. Wm. Mortenson, Lodi, California.

Cory Thornless Blackberry Extra Large Plants, ready; 12 $2.40; 24 $4.40 postpaid. Illustrated price list. Write Chas. E. Mortenson, Route 1, Lodi, California.

500,000 Grape Rootings, 25 kinds. Order quick—75 per cent of wine grape rootings now sold. Box 501, Fowler, California.

Alfalfa Seed — Certified Hairy Peruvian, Smooth Peruvian, Common. Write for samples and prices. Delta Seed & Feed Co., Yuma, Arizona.

TURKEYS

Turkeys—Mammoth White Holland. Have a number of prize winners till Holidays. Toms $10, Hens $5. Mrs. U. S. Smith, Route A, Box 123, Tulare, California.

Bourbon Red Turkeys, Buff Orpingtons. The Ferris Ranch, Reservoir Street, Pomona, California

Bourbon Red Turkeys—Prices reasonable. Mrs. L. S. Grosse, Scottsdale, Arizona.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

GEESE

For Sale—Thoroughbred African Gander. Price $7.00. P. Kirch, Santa Rosa, Route 3, California

TREES

FOR SALE — 100,000 SOUR ORANGE SEED BED STOCK; WASHINGTON NAVEL, VALENCIA LATE ORANGES AND EUREKA LEMON TREES; ALSO FUERTE, LYON, PUEBLA AND DICKEY "A" AVOCADO TREES. T. J. WALKER, FIRST NATIONAL BANK BUILDING, SAN FERNANDO, CALIFORNIA.

Nursery Stock at bargain prices. Prune 10c each; grafted walnuts $1.00 each; pears 20c each; Black caps $20.00 per 1,000; other stocks at bargain prices. Submit your want list, and send for planters list. 31 years in business. Carlton Nursery Co., Carlton, Oregon.

For Sale—Placentia Perfection and Eureka grafted walnut trees. Prices 1-3 off from last season. Our stock is grafted from choice grafted orchards. See our stock before buying. The Walnut Nursery, Whittier, California. Phone 6294.

For Sale—Walnut Trees—Placentia and Eureka grafted on black root—4 to 6 feet in height, $1.00; 6-8, $1.25; 8-10, $1.50; Placentias 12-14, $2.00; Eurekas, 10-12, $1.75. La Puente Walnut Nursery, Puente, California. Phone 103.

For Sale—Grafted walnut trees, also citrus and deciduous trees. Order now for 1922 delivery. Get my prices. Ketscher's Nursery, 1101 E. 4th Street, Santa Ana, California. Phone 572-W.

Reliable Trees and grapevines at a fair price. Write us for price list. We ship on approval. J. F. Miller & Sons, Healdsburg, Cal.

Trees—Tuscan Kling peaches, Sugar and French prunes, five to eight foot trees $35.00 per hundred. Johnson's Nurseries, Almaden Road, Los Gatos, California.

For Sale—Grafted Walnut Trees, Placentia Perfection and Eureka. These are well rooted and first class in every way. Rivera, California, C. E. Bullock.

For Sale—One and two year old Wonderful Pomegranate trees, fine stock. J. W. Irwin, Lindsay, California.

Citrus Nurseries, Murphy Oil Company, East Whittier California. Selected stock for sale; inspection invited.

DUROC-JERSEYS

Weanling Boars and Gilts by Pathfinder Wonder (Great Wonder I Am ex an 800 lb. Pathfinder sow) for $10 each. Bred sows and gilts. Derryfield Farm, Capital National Bank Bldg., Sacramento, California

For Sale—My entire herd of Durocs. The very best breeding, some bred, some with young pigs, five good boars. Write what you want, I have it; sell all as am quitting business. John Kincaid, East Bakersfield, California.

Greenwood Farm Durocs — Moderate prices on bred gilts and weanling boars. Select individuals. Most popular breeding. H. C. Witherow, Mgr., Live Oak, Sutter County, California.

Boyanna Big Type Durocs — Breeding stock, priced right for sale. Inquiries invited. Satisfaction guaranteed. J. Boyd Harrold, Dixon, California.

Big Type Durocs—Better Durocs at right prices. Harvey M. Berglund, Dixon, California.

Winsor Ranch Durocs—The best of stock at reasonable prices. BONITA, CALIFORNIA.

BERKSHIRES

Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Calac Orchards, Martinez, California.

POLAND-CHINAS

Lendorris Ranch Polands — Big type Poland Chinas of all ages for sale. The kind that makes weight quickly. Weanling boars and gilts sired by Lendorris Liberator out of Lendorris Liberty Bond sows. Now ready for delivery. W. L. Haag & Son, Hanford, California.

Big Type Poland China open and bred gilts, young and service boars and young pigs. Your letter expressing your wants will bring a quick reply. California Swine Corporation, H. A. Patten, Manager, Route 2, Box 38, Escalon, California.

Big Boned Poland Chinas—Bred gilts and young boars priced to sell at once. Young stock, either sex, for sale at all times. Bassett Bros., Hanford, California.

CHESTER WHITES

Chester White Swine—Service boars and gilts bred for November farrow. Best of breeding at reasonable prices. Howard Vaughn, Dixon, California.

MISCELLANEOUS

Avoid Law Suits by having your property lines properly surveyed and established by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

For Sale—Orchard Heaters—5,000 7-gallon "Citrus" Heaters, 500 "Hislop" Heaters. Practically as good as new, having been used but very little. Will sell at bargain prices. Call or write. Charles C. Chapman, Fullerton, California.

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

Earn $25 to $50 weekly in spare time selling hosiery direct to consumer from mills, exp. unnecessary. Bristol Hosiery Mills, West Coast Branch, 430 S. Broadway, Los Angeles.

GOATS

For Service—Pure Swiss Toggenberg Buck—Sire California Chief — Heavy Milk Strain. Arcadia Goatery, 50 R 11, Arcadia, California.

RABBITS

Pure Bred New Zealand Reds—Improve your stock with a good buck. Prices reasonable. Armstrong's Rabbit Farm, Petaluma, California.

Pedigreed Flemish Giants — No fancy prices. Maud Beeching, 1578 W. 46th St. Los Angeles.

CATTLE

Guernseys — Grape Wild Farms—Berkshires—Young bulls, from calf age up to 16 months old, of May Rose breeding and out of A. R. cows. Bred sows and gilts, service boars and pigs of both sexes for sale. Grape Wild Farms, Escalon, California. A. B. Humphrey, Proprietor

3 Extra Fine Registered Holstein Heifers —Two freshened September with heifer calves, one not bred. From Edward Walker's stock, Lakeside. Henry Bennett, R. D. Box 90 B, San Diego, California.

Berrywood Stock Farm—Breeders of registered Holstein cattle and Duroc-Jersey swine. Every cow an A. R. O. and T. B. tested. Bulls and females for sale. J. W. Snodgrass, Hueneme, California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1,000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

For Sale—Family and Dairy cows at all times. Guernseys a specialty. Phone Blackwood Ranch, Glendora 345, Glendora, California. A. G. McIntosh.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Polled Herefords and Durocs — Diablo Stock Farm, G. W. Emmons, Prop., Danville, California.

Some Choice registered Holstein heifers and bulls of serviceable age for sale. [illegible] W. Scudder Escalon, California.

Winsor Ranch Jerseys—Bull calves with production behind them, at reasonable [illegible]

For Sale or Exchange—Shorthorn roan registered bull, 6 years old. Peter Herlick, Helendale, Cal.

ROOFING MATERIAL

Save Your Roof for 15c a gallon with Asphaltoid. Direct from producer to consumer permits this low price of 15c a gallon. The finest roofing and preservative paint under sun. This is a natural product—why pay more for acid treated asphalt that eats your roof? Mail orders, barrel lots promptly shipped. Equally good for shingle, paper or metal roofs. Woolner Oil Co., 4th and Commonwealth, Los Angeles.

Roofing Paper—
Firsts complete with nails and cement, 1-Ply $1.25; 2-Ply $1.60; 3-Ply $2.20.
Lead & Oil Paint.....$2.20 a gal.
Roof Paint Special.....35c a gal.
Prompt Deliveries on Mail Orders.
ANGELUS ROOFING & PAPER CO.
764-766-768 So. San Pedro Street,
Phone Bdway 5401. Los Angeles, Calif.

WANTED

Wanted—Established California concern wants men, with rigs preferred, to represent it. Good pay. Can use local agents working during spare time also. Address J. H. Yetter, 317 Central Ave., Los Angeles.

Wanted—Walnuts Meats and cull walnuts. We solicit culls for cracking only, paying cash. Fred L. Mitchell & Son, 214 French St., Santa Ana, California. Phone 551-M.

Wanted to Buy—Any kind of dried fruit, honey or walnuts. Mail samples to W. A. Collins Co., Box 397, Santa Ana, California. Phone 71.

We Will Buy your Calla Lily roots. If you have 100 or more, write us. Sevin-Vincent Co., 512 Washington St., San Francisco, California.

Wanted—Avocado Seed. G. P. Sherwood, 216 S. Bunker Hill, Phone 19776, Los Angeles.

HORTICULTURAL PRINTING

Catalogues and Booklets, office forms and correspondence stationery for the nursery, seed and florist trade; half-tone cuts of many standard plants. Correspondence invited. The Kruckeberg Press, 236 Court St., Los Angeles.

MACHINERY

For Sale — Another big drop. Rebuilt windmills, tanks, pumps, cylinders. Why pay more. We make galzanized tanks, 400 gallons, $16.25; 600, $26.25; 1000, $37.25; 2000 capacity, $48.25. New irrigating pipe, 3-in., $13.50; 4-in., $17.50. Demmitt Co., office 120 N. Main, L. A. Phone 15191.

For Sale—One C. L. Best 12-25 Tractor, in fine shape. Might take as part pay span of good mules or horses. Terms to responsible party. Address Box 279, Sawtelle, California.

Land Leveler—For Rent or For Sale cheap on easy terms. Satisfaction guaranteed. Sizes five to ten feet. James A. Johnson, Box 425, Stockton, Calif.

Heavy Yuba No. 99 Disc Plow, five 24 inch discs, $200.00. La Mesa Country Club, La Mesa, Calif.

SOME BORROWERS

"The United States has a telephone for every eight inhabitants."

"Then I'm not getting a square deal."

"Huh!"

"More people than that are using mine!"—Detroit Free Press.

FATE'S REWARDS

"There's a guy I used to do his arithmetic for when we were at school together."

"Well?"

"Now I'm his bookkeeper."

LIVESTOCK NEWS NOTES

ord of 236 pounds butter in 7 days and 907.6 pounds butter from 19,173.2 pounds milk in 365 days, goes to the Adina Farms, a prominent Holstein breeding place at Dover, Kentucky. The other calf is also a son of Tritomia Pietertje Ormsby and is out of K. S. P. Queen Burke who has a senior four-year-old record of 31.12 pounds butter in 7 days. He is to be shipped to John Winn of Detroit, Michigan, whose senior herd sire is also out of K. S. P. Queen Burke by Sir Ormsby Skylark.

CALIFORNIA'S GREATEST LIVESTOCK EFFORT

(Continued From Page 483.)

Thomas B. Dibblee Estate of, Santa Barbara; Easton & Ward, Diablo; T. S. Glide, Davis; Thomas T. Miller, Hollister; Ormondale Ranch, Redwood City; Pacheco Cattle Company, Hollister; Straloch Farm, Woodland; University of California, Davis; Howard Vaughn, Dixon.

The awards follow:

Aged bull—1, Blackhawk Villager, Easton & Ward; 2, Imp. Scottish Lord, Glide; 3, Right Sort Jr., Vaughn; 4, Dalmeny Count, Pacheco; 5, Sultan Benito, Miller.

Two year olds—1, Ormondale Radium 2d, Ormondale; 2, Cheerful Count, Glide; 3, Milmar Matchless, Miller.

Senior yearling—1, Pacheco Lad 215th, Pacheco; 2, Milmar Sultan, Miller; 3, Pine Grove King 21st, Caledonia; 4, Kings Count, Glide; 5, Blackhawk White Beau, Easton & Ward.

Junior yearling—1, Collynie Prince Lavender, Easton & Ward; 2, Straloch Adjutant, Straloch; 3, Knight Avon, Dibblee; 4, Star of Cluny, Dibblee; 5, Blackhawk Renown, Easton & Ward; 6, Cumberland Goods 2d, Bond.

Senior bull calf—1, The Caledonia, Caledonia; 2, Stamp of Milmar, Miller; 3, Caledonia Marshal, Caledonia; 4, Hillcrest Lord, Glide; 5, Royal Crescent, Dibblee; 6, Village Marshal 2d, Easton & Ward.

Junior bull—1, Matchless King, Caledonia; 2, Helmsman, Straloch; 3, Pacheco Lad 284th, Pacheco; 4, Milmar Sultan Roan 5th, Miller; 5, Blackhawk Royal Hero, Easton & Ward; 6, Boquhan of Maple Hill, Ormondale.

Aged cow and calf—1, Pacheco Lass 118th, Pacheco.

Aged cow—1, Glenbessie 3d, Caledonia; 2, Little Sweetheart 2d, Ormondale; 3, Village Lassie, Glide; 4, Mayfield Victoria 2d, Bond; 5, Mayfield Victoria, Bond.

Two year olds—1, White Pacheco, Pacheco; 2, Village Rose, Glide; 3, Pacheco Doris, Pacheco; 4, Blackhawk Roan Lady 2d, Easton & Ward; 5, Cumberland Pacheco, Pacheco.

Senior yearling heifer—1, Sultan's Dale, Pacheco; 2, King's Honour, Caledonia; 3, Village Ruby, Dibblee; 4, Ormondale Lady, Ormondale; 5, Hillcrest Mary 4th, Glide; 6, Hillcrest Flower 3d, Glide.

Junior yearling heifer—1, Mary Ann Rush, California; 2, Glenbrook's Memory 43d, Caledonia Farms; 3, Pacheco Doris 2d, Pacheco; 4, Village Blossom 3d, Easton & Ward; 5, Princess Royal, Dibblee; 6, Pacheco Lass 213th, Pacheco.

Senior heifer calf—1, Straloch Maria, Straloch; 2, White Milmar, Miller; 3, Caledonia Queen, Caledonia; 4, Knights Lassie, Pacheco; 5, Ruby's Gem, Dibblee; 6, Choice Beauty Milmar 4th, Miller.

Junior heifer calf—1, Caledonia Mischief 2d, Caledonia; 2, Village Lassie 2d, Glide; 3, Village Rose 2d, Glide; 4, Marchys Lass, Pacheco; 5, Milmar Mistletoe 2d, Miler; 6, Lady Lustre, Vaughn.

Senior champion bull, Ormondale Radium 2d; reserve, Blackhawk Villager.

Junior champion, Collynie Prince Lavender; reserve, Pacheco Lad 215th.

Senior champion cow, White Pacheco; reserve, Glenbessie 3d.

Junior champion heifer, Mary Ann Rush; reserve, Caledonia Mischief 2d.

Grand champion bull, Collynie Prince Lavender; reserve, Pacheco Lad 215th.

Grand champion female, White Pacheco; reserve, Mary Ann Rush.

Aged herd—1, Pacheco; 2, Glide.

Breeders' young herd—1, Pacheco; 2, Caledonia; 3, Glide; 4, Dibblee.

Calf herd—1, Caledonia; 2, Glide; 3, Miller; 4, Dibblee.

Get of sire (4)—1, Caledonia; 2, Pacheco; 3, Glide; 4, Easton & Ward; 5, Glide.

Produce of dam (2)—1, Caledonia; 2, Pacheco; 3, Dibblee; 4, Pacheco; 5, Dibblee.

Aberdeen-Angus

Notwithstanding the fact that a number of good Angus herds have been established in this state during the last few years, the doddies have not staged strong shows this year. F. F. Peabody of Santa Barbara was the sole exhibitor and was represented by the imported aged bull Proud Eric of Aberlour and the two year old heifer Bashful Idol of French Broad.

Fat Steers

As yet our California shows have not developed as strong steer classes as might be expected in view of the growth of the breeding classes but considerable interest is always manifested and it is certain that in time this feature of our shows will grow. Certainly no state in the Union is in greater need of the stimulating influence of these classes from an educational standpoint.

McNerney and Son of Oregon showed a two year old Hereford. The University of California won the class for yearlings with a cross bred Hereford-Angus that is a full brother to the sensational heifer they showed two years ago. He was a comparatively easy top over a field of five. This steer, with ample size and well covered throughout and fitted to perfection by that master fitter, Alex McDonald, not only won his class but went through to the championship.

Straloch Farm won the class for steers under a year with a thick and sappy roan that was later made reserve champion.

The Holsteins

The Holsteins developed into a first class show after it appeared earlier in the season that the Black and Whites would not be creditably represented. California is a great Holstein state and our breeders have accomplished much and can usually be depended upon to hold up their end of any show, but this has in a way been an off year for a number of the leading exhibitors, and throughout the season the Holstein classes at the different shows, except the Southern California shows, have not been so strong numerically as they have on quality.

Hugh G. Van Pelt of Waterloo, Iowa, rated the classes.

One of the interesting contests of the show started just as soon as the aged bulls stepped into the ring. There were only two, but they represented the two best aged bulls that have come together for some time. Bridgford, showing his several times grand champion, King Segis Alcartra Prilly, met for the first time the great bull, King Segis Pontiac Jannek, owned by the Santa Monica Dairy and shown so successfully at the southern fairs. Both bulls had friends backing them and all realized that it would be a real battle for the honors, and when the smoke cleared the Bridgford bull was wearing the blue but he knew he had been to a "bull show." The winner went through to the final championship.

No two year olds appeared and but two senior yearlings came forward. The Maxwell entry led the Bridgford bull. Morris took the next class.

The senior bull calves made a strong showing and the winner was shown by Maxwell Farms. The junior calves appeared not to be placed according to popular demand.

The aged cows put up an excellent show that was marked by the reappearance of the popular Betsy Lamb Prilly, now carrying the Morris colors. This grand cow was generally accorded first rating over the Maxwell entry. Azavedo turned the tables on Holmes when his entry was placed above Ida Lotta Winnifred Burke. The two cows had met at Sacramento and the latter was the state fair grand champion.

Maxwell Farms won the next two classes over stiff competition. Bridgford had the winning senior yearling heifer and the university showed the junior yearling winner. Maxwell took the next class and Hartsook won the baby class.

Exhibitors: Bridgford Holstein Company, Patterson; Maxwell Farms, Los Angeles; A. W. Morris & Sons, Inc., Woodland; Fred Hartsook, Lankershim; M. Azavedo & Sons, Patterson; R. L. Holmes, Modesto; San Juan Mission Herd, San Juan; University of California; E. Swift Train, San Francisco; Santa Monica Dairy, Santa Monica.

The awards follow:

Aged bull—1, King Segis Alcartra Prilly, Bridgford; 2, King Segis Pontiac Jannek, Santa Monica.

Senior yearling bull—1, Sir Ormsby Hengerveld Skylark, Maxwell; 2, King Tora Pontiac Prilly, Azavedo.

Junior yearling bull—Aaggie Tuebie Mead, Morris.

Senior bull calf—1, Sir Pontiac Segis Prilly, Bridgford; 2, Tritomia Pietertje Ormsby Fayne, Maxwell; 3, Sir Aaggie Johanna Alcartra, Morris; 4, King Aaggie Prilly Alcartra, Bridgford; 5, King Inka Hengerveld Prilly, Bridgford.

Junior bull calf—1, Lady Panzie Tritomia Ormsby, Maxwell; 2, San Juan Ignaro Burke, San Juan; 3, King Pontiac Saltertia Prilly, Bridgford; 4, Unnamed, Holmes.

Aged cow—1, Betsy Lamb Prilly, Morris; 2, Joy Hengerveld Clothilde, Maxwell; 3, Yama Princess Alcartra Lass, Azavedo; 4, Ida Lotta Winnifred Burke, Holmes; 5, Anoakia Korndyke, Bridgford.

Three year olds—1, Stanislaus Belle Hengerveld, Maxwell; 2, Fobes Ormsby Skylark, Maxwell; 3, Steno Alta Pietertje Posch, San Juan.

Two year olds—1, Queen Ormsby Netherland Parthenia, Maxwell; 2, Flush Ormsby Skylark, Maxwell; 3, Luzette Abbekerk Prilly, Bridgford; 4, Miss Colantha Korndyke Contenta, Morris; 5, Johanna de Kol of Plant View, Holmes.

Senior yearling—1, Katie Hengerveld Prilly, Bridgford; 2, Lily McKinley Ormsby Skylark, Maxwell; 3, Maid Pontiac Prilly, Bridgford; 4, Wadnak Ormsby Skylark, Maxwell; 5, Miss Aaggie Cream Cup Mead, Morris.

Junior yearling—1, Colantha Juliana Agnes, California; 2, Miss Abbekerk Prilly, Bridgford; 3, Stanislaus Leda Ormsby Jewell, San Juan; 4, Betty Segis Netherland, Azavedo.

Senior heifer calf—1, Panzie Skylark Tritomia Ormsby, Maxwell; 2, Lilly Waldorf Pietertje Pontiac, Bridgford; 3, Tora Pontiac Prilly, Bridgford; 4, Segis Beets Tritomia Ormsby, Maxwell; 5, Aaggie Bloom Mead de Kol, California.

Junior heifer calf—1, Caroline Wayne Fayne, Hartsook; 2, Adeline Pontiac Segis Prilly, Bridgford; 3, Flush Ormsby Tritomia, Maxwell; 4, Jennie Korndyke Walker 2d, Bridgford; 5, San Juan Marie Ilyaide, San Juan.

Senior champion bull, King Segis Alcartra Prilly.

Junior champion bull, Sir Pontiac Segis Prilly; reserve, Sir Ormsby Hengerveld Skylark.

Senior champion cow, Betsy Lamb Prilly; reserve, Queen Ormsby Parthenia.

Junior champion heifer, Panzie Skylark Tritomia Ormsby; reserve, Caroline Wayne Fayne.

Grand champion bull, King Segis Alcartra Prilly; reserve, Sir Pontiac Segis Prilly.

Grand champion cow, Betsy Lamb Prilly; reserve, Panzie Skylark Tritomia Ormsby.

Aged herd—Bridgford.

Breeders' young herd—1, Bridgford; 2, Maxwell.

Calf herd—1, Bridgford; 2, Maxwell.

Get of sire (4)—1, Maxwell; 2, Bridgford; 3, Maxwell; 4, Bridgford.

Produce of dam—1, Maxwell; 2, Bridgford.

Five cows in milk—Maxwell.

The Jerseys

The Jersey show was made possible through the exhibit of J. E. Thorp of Lockeford who had the only full herd. Thorp won all the classes except the junior yearling bull, senior bull calf and junior yearling heifer. M. Fortini of Orland showed the senior bull calf and the university showed the two junior yearlings. The university had the junior champion bull that was also reserve grand champion and Thorp had the other champions. Hugh G. Van Pelt made the awards.

The Guernseys

But two herds of Guernseys were on hand, those of A. B. Humphrey of Escalon and Brant Rancho, Owensmouth. Both herds have been fighting it out all season with varying results. At this show it was the Brant herd that found most favor with the judge. Brant had the senior and grand champion bull on the aged May King of Fern Ridge. Humphrey's senior bull calf, Escalon Princess Whiteface, was junior champion. Brant's aged cow, Princess of

(Continued on Page 491.)

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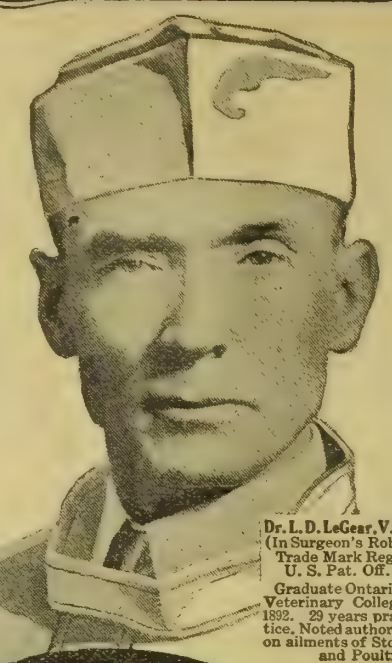

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Brooder Houses for Large Flocks

By Jean A. Koethen

INTENSIVE poultry keeping calls for the rearing of chicks in large flocks. Just how large they must be is a question that has not been fully answered. There are those who prefer to start their chicks in brooders which hold but 100 at the most and who are firm in the belief that chicks and pullets do better if they are kept always in flocks of this size or smaller. Others would increase the size of the flocks to 200 or thereabouts, and others again are satisfied that 500 is the largest number that can be advantageously reared aand housed together. On the other hand there are not a few who claim to be able to brood 1000 or even 2000 chicks together around one of the big brooder stoves and are not afraid to keep as many pullets in one flock.

Small Flock Brooder House

The chicks in this house on the McAllister Ranch at Inglewood are brooded in units of 100 each. Each inside run is connected with its own outside run, so that the units are kept entirely separate.

The fair minded poultryman admits frankly that there is no one best way of doing anything. He also admits that the personality of the caretaker is an overwhelming factor in determining method. Experience counts tremendously but disposition to take pains is still more important. I visited a woman last spring who brooded 2000 chicks in a flock with very slight loss, but she slept on a cot in the play room for a week or more so that she might watch the stove all night. Not every poultry keeper is willing to take so much trouble for a few chicks.

Brooder House Types

Two types of brooder houses are in use for large flocks. One is the long house divided crosswise into three foot runs all facing south, so that the sunshine may be equally distributed, and each run connecting at its inner end with a brooder heated by hot water or hot air and designed for 100 chicks. Such a house, 20 feet long and 10 or 12 feet wide, divided into six runs, will accommodate from 500 to 600 chicks at first. If it is filled at the beginning, however, some of the chicks will need to be moved by the end of the third week. Poultrymen who wish to raise their chicks by the thousand usually build with extra runs which are filled as the chicks outgrow their first quarters.

The other type of house may be of almost any size, though 12 by 20 is a good average. It may have shed or gable roof, but, like the first house, should be mostly glass on the south. It is divided into two rooms, brooder room and play room and the play room connects with an outside run so that the chicks after the first four days have their choice of three temperatures. Heat is supplied by one of the many types of oil or coal or gas brooder stoves or by an electric hover which can be used in any house.

Two Purpose Houses

High prices of lumber have driven not a few poultrymen to the use of a simpler and cheaper house than either of the above. This is a colony laying house about 8 by 12, a light frame of 1 by 3, covered with tarred paper. On a good many ranches these little houses are being built instead of the more expensive long houses. They will house from 50 to 75 layers and in the hatching season are easily heated for use as brooder houses. One I saw recently was so arranged that the space under the droppings board could be turned into a brooder and warmed by pipes connecting with a stove outside. An electric hover could easily be used in such a house and with less danger of fire than the use of a brooder stove inside would involve. A house of this sort can be built for about $15 and will house at least 200 baby chicks the first two weeks or longer. By the end of the third week the number should be reduced half in order to give each chick a chance for growth and development.

The outside run is an important adjunct to every brooder house. When the house is divided into runs so that the chicks may be kept in units of 100 or less there should be an outside run corresponding to each inside run. When the chicks are in one large unit a double yard system is frequently used. The yards are as large as possible, one in front and the other at the rear, or, if more convenient, both in front. While the chicks run in one a crop of barley is grown in the other. A third yard, planted to alfalfa, on which the chicks can be turned for a short time each day, is a valuable addition to the regular runs.

There is no standard size for chick runs, but this rule may be safely laid down: the more room the chicks have to run in the more rapidly will they grow and the fewer runts will there be among them.

Quite as important as artificial heat at night and room to run by day is sunshine for the growing chick. All brooder houses should face either south or east. As a rule south is best

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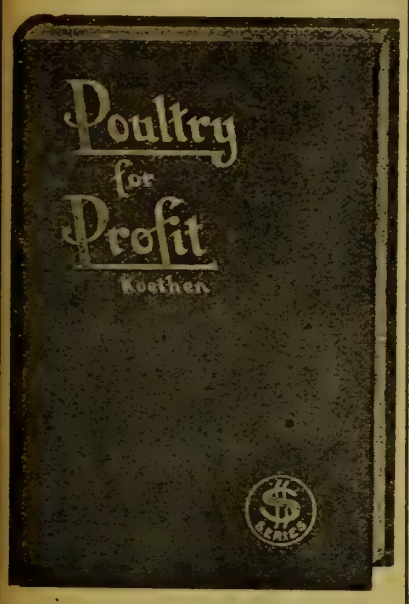

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because in January and February the sun will shine into the runs from 9 till 4. In order to get the early morning sun, however, there must be some glass on the east, and some poultrymen think it best to face their houses east and do without the afternoon sun. My own idea would be to have the south side all glass and in addition one east window near the floor so that the chicks may get the first rays of the sun in the morning. No amount of artificial heat can take the place of sunshine in growing chicks, and the wise poultryman will study his situation and employ every possible device for keeping his chicks in the sun in winter. It means cheaper brooding, greater vigor, less disease.

Single Unit Brooder House
Twelve hundred chicks are brooded about one stove in this house on the Bandini Ranch, Riverside.

Poultry Queries

Conducted by Jean A. Koethen

Tapeworms

My hens are affected with very small worms which stretched out may be about one-eighth inch long, but when they draw up are almost round. I have tried tobacco and other remedies without results.—Subscriber, Inglewood.

From your description it would seem that these small worms are tapeworm segments instead of round worms, which are considerably longer. If your birds have tapeworms tobacco will do them no good. Oil of turpentine, pumpkin seed, areca nut and male fern are the standard remedies, of which pumpkin seed is easiest to use. Chop the seeds to a size that the birds like, say about like cracked corn, set them before the hens and let them eat what they will. Then follow two hours after the seeds have been eaten with Epsom salts, one-half teaspoon for each bird, dissolved in water and mixed in a little moist mash. This treatment can be repeated several times a few days apart. If the pumpkin seed gives no results, try oil of turpentine mixed with an equal quantity of olive oil and 20 to 30 drops of mixture given at a dose. Follow in two hours with two or three teaspoons of castor oil. Powdered areca nut is one of the best remedies for tapeworm in fowls but should not be given to geese or turkeys. It may be given in doses of 30 to 45 grains mixed with butter and made into pills. Male fern may be used in the form of powder (dose 30 grains) or of liquid extract (dose 15 to 30 drops). Whatever remedy is used, the dose should be given when the birds are fasting and followed with a dose of Epsom salts or castor oil. Individual treatment is quite troublesome and should not be attempted till the simpler pumpkin seed treatment has been tried. It is understood, of course, that there will be immediate reinfestation unless the birds are moved to fresh grounds or the soil on which they are running disinfected with quicklime or a ten per cent solution of sulphuric acid.

White Minorca Legs

In your issue of October 8 you state that slate colored legs are a sign of pure bred White Minorcas. If you are right I never have seen White Minorcas, and I have been breeding them for several years. All the White Minorcas I have seen have white to pinkish legs, almost white or quite white, and white bills, and are much larger than White Leghorns. The only slate colored legs I have seen occur when a White Minorca male is crossed with White Leghorn hens; then many slate colored legs occur and some black feathers. If I am wrong I want to be corrected. I think much of the White Minorcas; they lay the largest eggs of any breed I know, larger even than the Black Minorca.—C. E. Hoover, Friendswood, Texas.

You are right, and I am glad to be corrected. The American Standard says, "Shanks and Toes: Pinkish White."

Lice on Chickens

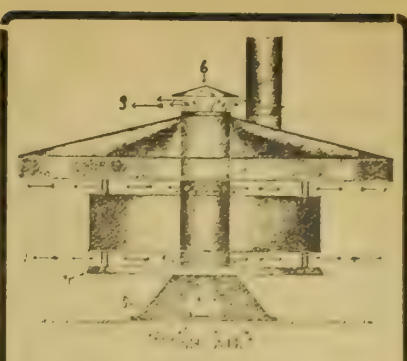
What is the cause, preventive and cure for lice on chickens?—Subscriber, Escondido.

Filth is the cause of lice on poultry as well as on human beings. If the bodies of chickens could be kept clean there would be nothing for lice to live on and therefore no lice. The only preventive is also the cure, some treatment which will kill the lice and nits. A dust bath of soft, moist dirt is all some hens need to keep them comparatively clean. Others, especially the heavier breeds, require dusting with louse powder from time to time. Sodium fluoride has been recommended for this purpose by the government, and quite generally used. There are also numerous prepared powders. Greasing with lard is a very effective remedy but is not advisable in cold weather and always makes the hens look bad. Blue ointment, a mercury preparation, mixed with an equal amount of vaseline and used on the skin about the vent is preferred by some experiment stations to powder.

Roupy Turkeys

Two of my turkeys have swellings under both eyes. Eyes are clear. Odorless, thin discharge from the nostril. Eat well and apparently in good health. Is it contagious and can it be cured?—Subscriber, San Joaquin.

Your turkeys have a slight attack of swellhead, a form of roup which is not contagious but may run through a flock if all the birds are kept under the same conditions. In other cases it seems to be congenital and attacks only the weaker birds. You may need to open the swellings, but first try the permanganate treatment. Dissolve a few crystals of permanganate of potash in about a quart of slightly warm water. Massage the nostril, rubbing toward the eyes to loosen any mucus that has collected, then dip the head in the permanganate solution and hold it there a few seconds. Do this twice a day, preparing a fresh solution each time, for it loses its strength quickly. Another solution that may be used in the same way is 1¼ ounces boric acid and ½ ounce borate of soda to a quart of water. If the swelling under the eyes persists after a few days of this treatment, open it with a sharp, clean knife, remove the secretion and cleanse thoroughly with boric acid solution.



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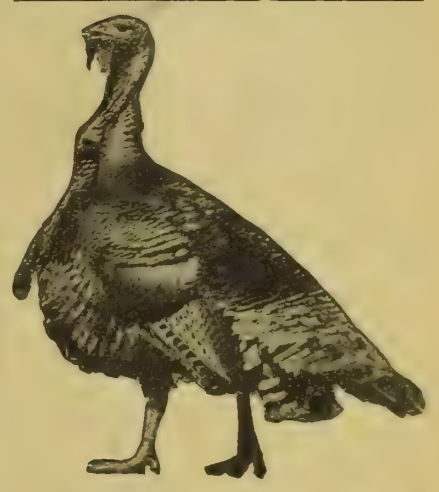

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Weather proof. Rat proof. Large capacity. Taper body prevents clogging. Height, 19 inches.

In three sizes:

No.			Each
35—Width	8½	in.	$1.85
36—Width	12	in.	2.20
37—Width	24	in.	3.10

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HOEFT & COMPANY, INC.
220 No. Alameda St. Los Angeles, Cal.

Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.

Los Angeles Markets

Los Angeles, November 2, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price 51 cents.

CHEESE

Brokers prices:
California flats, 23@25.

EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 63; case count, 57; pullets, 48; pewee pullets, 32.

POULTRY

Price to producers: Hens, 25; colored, 32; broilers, 40; roasters, 28; old roosters, 16; fryers, 30; ducks, old, 14; ducklings, Pekin, 3½ up, 25, others, 25; geese, 25; turkeys, live, young tom, 32; dr., 38; old, live, 27; dr., 38; hens, live, 32; dr., 38; squabs, 45@47.

Belgian hares, 12@17; old, 8.

LIVESTOCK

Los Angeles, Nov. 1:—Weighed and delivered off cars without food or water: Hogs (hard grain fed), 125 to 175 lbs., 9.00; 175 to 225 lbs., 9.50.

Cattle (on foot, gross weight): Steers, good, 6.50; medium, 6.00; cows, good, 5.00; medium, 4.50; bulls and stags, 3.00; calves, 125 to 150 lbs., 8.00; 175 to 225 lbs., 7.00.

Sheep: Ewes, 3.50@4.00; lambs, 7.00@7.50.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, November 1, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.

Potatoes: Demand and movement moderate, market weaker. Lugs mostly 1.00@1.25. Stocktons: Burbanks per cwt., best, 2.75@2.90; poorer, 2.00@2.50. Idahos: Russets, 2.60@2.90; baking stock, 3.50@3.75. Sweets: Supplies moderate, movement slow, market steady. Locals: No. 1, mostly 75@90; No. 2, 50@60 per lug.

Onions: Supplies moderate, movement moderate. Locals: Spanish, per cwt., 3.75@4.00; per lug, 1.10@1.25. Stocktons: Per cwt., White Globes, best, 5.00@5.50; Yellows, 4.00@4.50; per lug, Whites and Browns, 1.40@1.60.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock, November 1, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Supplies liberal, demand slow, market weak. Per lb., Kentucky Wonders, mostly 5@6; green pods, 3½@4; limas, 5@6.

Bunch vegetables: Per dozen bunches: Beets, 50@55; carrots and turnips, mostly 40@45; radishes and parsley, 15; green onions, 10@15; spinach, 25@30.

Cabbage: Supplies liberal, market steady. Per field crate, 1.50@2.00; mostly 1.50@1.75.

Cauliflower: Supplies moderate, market stronger, 1.50@2.00, according to quality.

Celery: Supplies moderate, market steady. Per crate, 3.00@3.50; poorer, 2.50@2.75.

Cucumbers: Market stronger. Locals: Lugs, mostly 75@1.00.

Lettuce: Supplies liberal, demand moderate, market firm. Mostly leafy stock. Locals: Field crates, best, 60@75; poorer, 40@50.

Peas: Supplies light, market firm, mostly 7@10; fy., 11@12.

Peppers: Supplies liberal, market firm on bells. Locals: Bells, green, per lug 60@65; Red Pimientos, 65@80; Chilis, 35@40 per lug.

Pumpkins: Supplies liberal, market steady, 1@1½ lb.

Squash: Supplies moderate, market steady, movement slow. Summer squash, mostly 40@60 per lug; Hubbard squash, 1@1½ lb.

Tomatoes: Supplies light, demand and movement good, market stronger. Locals: No. 1, per lug; Pinks and Ripes, Mostly 1.75@2.25; poorer, 1.25@1.50.

FRESH FRUITS

Apples: Supplies very heavy. Demand and movement slow, market weak. Locals: Windfalls, 1¾@2, fair quality, various varieties 3@4 lb, few best Delicious and Jonathans Yucaipa section 5@6 lb.; few 7 lb. Watsonville: Fancy 4 tier Bellefleurs, 1.45@1.50; poorer, 1.20@1.25; 4½ tier, 1.15@1.25; B grade, 4 tier, 1.00@1.10. Utahs: Jonathans, 5@6 lb. Washingtons: Jonathans, extra fancy medium sizes, 2.90@3.00; fancy, 2.75@2.85; small sizes fancy, 2.50; jumble pack, 5½ lb. Oregons: Spitzenburgs, extra fancy medium sizes, 2.75@3.00; small size Jonathans, extra fancy, 2.50@2.60. Idahos: Jonathans, large extra fancy, 3.00.

Cranberries: Supplies limited, market steady. Early Blacks, 17.00 bbl.; one-third bbl., 4.50@5.00; half bbl., 9.00; Late Howes, 23.00 bbl.

Avocados: 3.00@6.00 doz.

Feijoa: Lb., 11@12.

Figs: Supplies light, demand moderate, market steady. Locals: Per box, 1.00@1.25; few best, 1.50; various, 8@10 lb.

Grapes: Supplies liberal, demand good, market steady. Per lb.: Muscats, 5@6; Malagas, Virdels and Red Emperors, 6@7; Cornichons, 5@7; Tokays, 5½@8. Per ton, black wine grapes, 100.00@140.00; white wine grapes, 60.00@80.00.

Melons: Honeydews, 1½@2 per lb.; Casabas, 1@2½ lb. Watermelons, 1 lb. Persian melons, 3@4 lb.

Pears: Demand and movement slow, market weak. Bartletts mostly 4@5; few 6; poorer, 3@3½ per lb.

Persimmons: Lb., 10@15.

Pomegranates: Supplies moderate, lb., 5@8.

CITRUS FRUITS

Grapefruit: Supplies moderate, movement moderate, market firm. Local market pack mostly, 4.00@5.00; small, 3.00@3.50; special packed, 4.00@5.00; Arizonas, 4.75@5.50.

Lemons: Supplies liberal, demand moderate. Locals: Special pack, 4.50@5.00; market pack, 3.25@3.50; poorer, 2.75@3.00; loose boxes, 1.50@2.25; lugs 75@1.25.

Oranges: Supplies light, demand moderate, market steady. Special brands mostly 6.00@6.25; market pack, 4.00@4.50; small sizes, 3.00@3.25; loose boxes, 75@1.00; mostly 1.00@1.25.

HONEY

The honey market has been very quiet during the past two weeks. Demand is falling off sharply, but prices remain firm account light California crop and limited supplies light colored honeys on hand. Supplies of amber grades fairly liberal. The lower grades of honey enter into competition with sugar to some extent, but higher grades sell strictly on their own merits as honey. Carloads f. o. b. usual terms at loading points: Per lb.: White Orange Blossom, dealers holding for 12@12½; White Sage, 11@12; Light Amber Sage, 7½@8½; old crop White Sage, 10½; Light Amber Alfalfa, 6½. Hawaiian Amber offered at 4½.

Beeswax: Practically no demand or movement. No sales reported.

NUTS

Cal. Walnut Growers Assoc.:
Opening prices to wholesalers:

No. 1 Softshell	27
No. 2 Softshell	20
Standard Budded	31

GRAIN AND FEEDS

Grain Exch. price bid Nov. 1:
Barley: 100 ton lots, Dec. del., 1.27.
Milo: 100 ton lots, Dec. del., 1.40.

HAY

Alfalfa Growers of California report:

The market last week was strong and active in all parts of the state. Prices were firm and unchanged to slightly higher in some of the markets, sharply higher in others which had been ruling below and are now catching up.

Stocks in hands of dealers and users lighter than usual at end of producing season.

There were 1,130 tons of grain and alfalfa hay received on the Los Angeles tracks the week ending October 29, with 230 tons held over.

Prevailing prices last week, delivered in the vicinity of Los Angeles:

No. 1 Dairy Alfalfa	22.00
Standard Alfalfa	17.00

Quotations by Nichols - Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay

Tame Oats	20.00@26.00
Barley	16.00@24.00
Alfalfa, Rabbit	24.00@28.00
Alfalfa, No. 1 Dairy	19.00@21.00
Standard	16.00@18.00
Straw	12.00

San Francisco Markets

San Francisco, November 1, 1921.

BUTTER

Extras	50
Prime Firsts	47½

CHEESE

Dairy Exchange quotations

Cal. Flats	30½
Cal. Y. A.	29
Ore. Trips	26
Ore. Y. A.	30

EGGS

Dairy Exchange quotations:

Extra	69
Extra Firsts	66
Extra Pullets	53
Pullets, Firsts	50
Undersized No. 1	45

POULTRY

Wholesale prices are:

Poultry: Young chickens, Leghorns, 1 to 1¼ lbs., 48@50 per lb.; above 1¼ lbs., 34@36 per lb.; heavy breeds, 30@32 per lb.; staggy roosters, 20@25 per lb.; old roosters, Leghorns, 16 per lb.; heavy breeds, 18 per lb.; hens, Leghorns, large, 25@28 per lb.; small to medium, 24 per lb.; heavy breeds, 30@32 per lb.

Ducks: 20@22 per lb.

Geese: 30@33 per lb.

Turkeys: Live, old, 35 per lb.; spring, 40 per lb.; extra large, 42 per lb.; do, dressed, 52@54.

Squabs: Fancy, 50; do, common, per dozen, 3.50; old pigeons, 3.50 per dozen.

Belgian hares: Live, 16@18 per lb.; do, dressed, 25@28 per lb.

LIVESTOCK

Western Meat Co. quotes:

Weighed off cars at our yards in South San Francisco:

Cattle—No. 1 steers, 5¾@6¼; do, second quality, 4½@5½; cows and heifers, No. 1, 4½@5; do, second quality, 3¾@4½; bulls and stags, 2¾@3¼.

Calves: Light weight, 7@8; heavy, 5½@6.

Sheep: Wethers, 4@4½; ewes, 2¾@3¼.

Lambs: 7@7½.

No.	Hogs	Ave. Wt.	Dock	Price

Hogs — Hard, fat, grain-fed, weighing 125 to 200 lbs., 10; 200 to 250 lbs., 9; 250 to 300 lbs., 8; light sows, 8; heavy, 7.

California Farm Bureau Marketing Association reports:

Tulare, October 25

3	110	.....	$10.95
26	172	.....	10.60
93	160	10	10.30
82	190	.....	10.30
83	187	.....	10.25
78	203	50	10.10
52	232	10	9.85
19	229	.....	9.30
21	335	180	7.80
1	450	180	7.10

Six cars, 42 consignors, $9,013.72.

Stanley Station, Fresno County, Oct. 25

571	Feeders		10.00

Four cars, 1 consignor, $5,952.00.

Visalia, Oct. 26

90	186	.....	10.70
72	184	30	10.55
50	202	280	10.55
29	235	.....	10.05
5	314	80	7.65
1 Stag	400	.....	5.75

Three cars, 17 consignors, $5,066.74.

Fresno, Oct. 27

84	192	.....	10.00

One car, 1 consignor, $1,638.60.

Hanford, Oct. 27

73	192	.....	10.50
90	165	.....	10.50
35	200	40	10.35
36	142	20	9.85
1	230	.....	8.50
2	605	40	7.35

Three cars, 20 consignors, $4,388.17.

Stratford, Oct. 27

83	179	.....	10.40

One car, 1 consignor, $1,496.35.

McFarland, Oct. 28

77	191	.....	10.35
89	181	.....	10.35
13	112	.....	10.10
65	160	.....	10.00
17	238	.....	9.00
1	270	30	8.00

Three cars, 17 consignors, $4,780.93.

Total for the week: 21 cars, 99 consignors, $32,336.61.

These prices are f. o. b. shipping point to the farmer, while the prices quoted by the newspapers are off cars at their packing houses.

POTATOES AND ONIONS

Street prices:

Potatoes: Street prices: River, 2.50@2.75; second grade, 2.00@2.25; Oregon Burbanks, 2.65@2.75; Salinas, 3.50@3.75; netted gems, 2.75@3.00. Sweets, 3@3½ per lb.

Onions: New crop Yellow, 3.25; Brown, 4.00@4.25; Green, 1.50@2.00 per box.

Garlic: 3@5 per lb.

VEGETABLES

Wholesale selling price:

Artichokes: 9.00@11.00 case.

Beans: String, 3@5 lb.; Lima, 3@5. fy. 9@10; Wax, 4@5.

Brussel Sprouts: 6½@8 per lb.

Carrots: Sk., 1.00@1.25.

Celery: 2.00@3.50 cr., bunch 25@35; bleached 4.00@4.50 cr.

Cucumbers: Lug, 50@75; hothouse 1.00@1.25; Yellow, 50@65.

Eggplant: 1.00@1.25 lug.

Lettuce: Crate, 75@1.00.

Okra: 1.00@1.50 per box of about 10 lbs.

Peas: 5@10 lb.; fy., 12½.

Peppers: Bells, 3@4 lb.; 50@75 lug; Chili, 3@5.

Pumpkins: 1.00@1.25 sk.; lb., 3.

Crookneck, 4.

Spinach: 4 per lb.

Tomatoes: 1.25@1.50; few, 1.75.

FRESH FRUITS

Apples — California: Bellflower, 90@1.25; B grade, 75@90; Newton Pippins, 3½ and 4 tier, 1.75@2.00; 4½ tier, 1.60@1.75; B grade, 1.25@1.35; Spitzenburg, 4 tier, 1.50@1.75; 4½ tier, 1.15@1.50; Baldwin, 4 tier, 1.40@1.60; 4½ tier, 1.15@1.35; Langford, 3½ and 4 tier, 1.50@1.75; 4½ tier, 1.25@1.50. Northwestern: Spitzenburg, extra fancy, 2.50@2.75; fancy, 2.25@2.50; choice, 1.75@2.00; Rome Beauty, fancy, 3.00@3.25; choice, 2.50@2.75; banana, extra fancy, 3.25@3.50; fancy and delicious, 2.75@3.00; Jonathan, extra fancy, 2.00@2.50; fancy, 1.75@2.00.

Avocados: California, doz., large, 3.00@5.00; small, 1.00@2.00; Fla., 3.00@5.00.

Bananas: Eastern, 6@7; Hawaiian, 7@8.

Chestnuts: 18@25 per lb.

Cranberries: Bx., 4.50@5.50; Cope Cod, 15.00@16.00 bbl.

Figs: Black, double layer, 1.25@1.50; single layer, 75@1.25; do, white, single, 75@1.00.

Grapes: Per crate: Seedless, 1.50@2.00; Tokay, 75@1.25; Black, 75@1.50; Malaga, 75@1.50; Seedless, 2.00@3.00; Black, 1.75@2.50; Tokay, 1.50@1.75; Muscat, 1.75@2.50 per lug; Isabella, 2.50@2.75. Wine grapes, black, 120.00@140.00; do white, 65.00@100.00 per ton

Huckleberries: 8@11 lb.; fy., 15@18.

Melons: Persian, 1.00@1.25 per small cr., 1.50 large; Honeydew, 1.00@1.25 per standard crate; Casabas, 50@75 per dozen.

Olives: Large, 8; small, 5.

Persimmons: 2.50@3.00 bx.

Pineapples: 4.00@4.50 dozen.

Pomegranates: 2.00@3.00.

Quinces: 1.25@1.50 lug.

Raspberries: 75@1.00.

Strawberries: Cr., 1.70@1.75; dr., 75@1.50.

CITRUS FRUITS

Oranges: Valencias, 4.00@6.50 per box. Lemons, 3.00@5.25 per box; lemonettes, 1.50@3.00 per box. Grapefruit, 4.00@5.00 per box for California and Arizona. Limes, Mexican, 2.50 box.

BEANS

Below California Bean Growers Association shippers prices choice recleaned

Large Whites	5.00
Small Whites	4.85
Pinks	4.70
Mexican Reds	4.50
Red Kidney	7.00
Henderson Bush	5.45
Cranberries	5.65
Bayos	4.90
Blackeyes	3.75

HAY AND FEED

Francisco:

Choice Dairy Alfalfa	16.00
Standard	15.00

A. W. Scott Co. says:

Receipts past week, 691 tons. The possibility of a change in freight rates is likely to hold off and delay shipping for a time. It is reported that a general average of about 16 per cent reduction is likely to be made. Arrivals of alfalfa have been light and the market quiet. Practically everything has been cleaned up out of the fields in the vicinity of San Francisco, and holders of alfalfa in warehouses have been asking higher prices to cover expense of storage.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the markets in San Francisco (for prices to consumers, charges of switching, cartage, commission and handling expenses must be added, according to conditions).

Wheat Hay No. 1	16.00@18.00
Wheat Hay, fair grade	13.00@16.00
Tame Oat Hay	13.00@16.00
Wild Oat Hay	10.00@12.00
Alfalfa Hay	12.00@15.00
Stock Hay	8.00@10.00
Straw	10.00@12.00
Rolled Barley	29.00@30.00
Ground Barley	31.00@33.00
Oats, Rolled Feed	34.00@36.00
Bran and Millrun	24.00@27.00
Middlings	40.00@44.00
Cocoanut Meal	24.00@26.00
Alfalfa Meal	21.00@23.00
Cottonseed Meal	40.00@42.00
Sugar Beet Pulp	29.00@30.00
Molasses Tanks	21.00 Barr. 25.00
Milo Maize, Corn Meal and Cracked Corn	38.00@41.00
Scratch Feed	44.00@46.00

GRAIN

Sales on Grain Exchange:

Barley: Feed, 1.22½@1.27½; shipping, 1.27½@1.37½.

Red Feed Oats: 1.40@1.60; do, seed, 1.75@2.10.

Mill Wheat: 1.90@1.95.

Corn: California yellow, 1.45@1.50; eastern yellow No. 2, 1.40@1.42; No. 3, 1.36@1.38; No. 3 Kaffir, in bulk, nominal; white Egyptian, 1.70@1.72½; California red milo, 1.65@1.70.

Citrus Markets

Los Angeles, Nov. 2, 1921.

The shipping year closed October 31. There are still a few Valencias to go and it will be two weeks before new crop Navels start from Central California. Definite prices are not yet made but shippers are hoping the first car will command around 4.00@4.50 f. o. b. Butte County announces that it will make the effort to get cars out the first of next week. Arizona Navels are already moving and made one sale on a basis of $6.50 per box f. o. b. Arizona's first shipment last year was $8.00. Florida is already shipping at the rate of nearly 50 cars daily. Florida prices are ranging in auctions from 2.70@4.50. Much of the fruit is showing a decidedly green color.

Shipments

Record of complete shipments for the year are not yet available. Will be given next week.

November 1

New York: 25 or., 6 lem. Val. 1.95@8.60, lem. 1.80@5.90.

Boston: 12 or., 4 lem. Val. 2.55@7.25, lem. 3.25@6.80.

Philadelphia: 7 or., 1 lem. Val. 3.25@8.20, lem. 1.80@3.50.

St. Louis: 4 or., 1 lem. Val. 2.25@3.70, lem. 3.30@4.65.

Pittsburg: 2 Val. 3.25@4.90.

CALIFORNIA CATTLEMEN'S ASSOCIATION REPORT

San Francisco, October 24.—Additional sales have been reported at prices equal to those quoted last week. Sales within a quarter of a cent freight rate are for 6½c f. o. b. ranch for immediate delivery. Sales in the northern part of the state continue for 5½c f. o. b. ranch.

The Weekly Market Report quotes only highest prices being paid for prime cattle. You will be informed of the lowest prices by the buyer who visits you. The Weekly Market Report quotes sales as reported by members of the association and will inform you of the highest prices being paid for prime cattle f. o. b. ranch, regardless of the prices quoted in newspapers f. o. b. packing company yards. Prices quoted in this report are actual sales and not our idea of what the price should be.

Considerable money is being secured by cattlemen through the War Finance Corporation. The application forms for securing loans have been considerably simplified and further changes are being planned in order to make funds available as easily as possible.

The Annual Meeting of the California Cattlemen's Association will be held in San Francisco on December 10, 1921, at 10 a. m., in the Palace Hotel.

The price paid for prime steers f. o. b. ranch in California continues to be higher in proportion than at eastern points. A few cattle are being imported into California, while it remains impossible to ship California cattle to eastern markets with profit.

Sell only f. o. b. ranch. Do not ship on consignment. Sell first and second quality steers separately. This means money to you. Your good cattle do not sell the poor ones.—R. M. Hagen, Secretary.

WEATHER REPORT

San Francisco, Cal., Oct. 29, 1921.

Stations	Rainfall Wk.	Season	Norm.	Temp. Max.	Min.
Eureka	1.22	1.85	5.77	61	42
Red Bluff	1.17	1.43	2.30	80	38
Sacramento	.70	.78	1.37	78	42
San Francisco	.28	.87	1.49	76	50
San Jose	.16	.42	1.21	80	40
Fresno	T	.21	.95	78	44
San Luis Obispo	.01	.55	1.75	92	40
Los Angeles	.30	1.20	.79	92	50
San Diego	.20	1.88	.49	86	51

FINANCING RICE GROWERS

The banks of the Sacramento Valley have decided to set aside a fund of $1,400,000 to market the rice crop. The War Finance Corporation also has been requested to aid in the undertaking with a loan of $1,250,000.

The success of the reorganization of the rice growers can now be considered complete, according to Market Director Maddox.

State Market Director Maddox is now in the southern bean growing districts preaching the gospel of cooperation to the producers of that section with gratifying results.

CALIFORNIA'S GREATEST LIVESTOCK EFFORT

(Continued from page 487)

Meadowbrook, was liked well enough by the judge, despite her age, to again be made senior and grand champion. The junior calf from the Humphrey herd, Escalon Naomi, was junior champion.

Aged bull—1, May King of Fern Ridge, Brant; 2, Nobleman of Maple Hill, Humphrey.

Two year olds—1, Itchen Daisy's King of Revada, Brant.

Junior yearling—1, Escalon Rex, Humphrey; 2, May Day of the Rancho, Brant.

Senior bull calf—1, Escalon Princess Whiteface, Humphrey; 2, Royal of the Rancho, Brant.

Junior bull calf—1, Golden Glow of the Rancho, Brant; 2, Escalon Itchen Prince, Humphrey; 3, Escalon Searchlight, Humphrey.

Aged cow—1, Princess of Meadowbrook, Brant; 2, Sylvia of Frankland, Brant; 3, Golden Glen Pansy, Brant; 4, Golden Anna's Fairy, Humphrey.

Three year olds—1, Little Queen of the Rancho, Brant; 2, Lucky Girl of the Rancho, Brant; 3, Nevada Lily Belle, Humphrey.

Two year olds—1, Rosemary of the Rancho, Brant; 2, Escalon Lassie, Humphrey.

Senior yearling heifer—1, Jeannie of the Rancho, Brant; 2, Pearl Souffle of Revada, Humphrey.

Junior yearling heifer—1, Felois Tungsten Priscilla, Brant; 2, Ansilla of the Rancho, Brant; 3, Escalon Queen, Humphrey; 4, Escalon Golden Anna, Humphrey.

Senior heifer calf—1, Escalon Pearl, Humphrey; 2, Fascination of the Rancho, Brant; 3, Escalon Marigold, Humphrey; 4, Elsie III of the Rancho, Brant.

Junior heifer calf—1, Escalon Naomi, Humphrey; 2, Gypsy Girl of the Rancho, Brant; 3, Fonix of the Rancho, Humphrey; 4, Escalon Phyllis, Humphrey.

Senior champion bull—May King of Fern Ridge; reserve, Itchen Daisy's King of Revada.

Junior champion bull—Escalon Princess Whiteface; reserve, Golden Glow of the Rancho.

Senior champion cow — Princess of Meadowbrook; reserve, Little Queen of the Rancho.

Junior champion female — Escalon Naomi; reserve, Felois Tungsten Priscilla.

Grand champion bull—May King of Fern Ridge; reserve, Escalon Princess Whiteface.

Grand champion female—Princess of Meadowbrook; reserve, Escalon Naomi.

Aged herd—1, Brant Rancho; 2, Humphrey.

Young herd—1, Humphrey; 2, Brant Rancho.

Calf herd—1, Humphrey; 2, Brant Rancho.

Produce of dam (2)—1, Brant Rancho; 2, Brant Rancho.

Get of sire (4)—1, Humphrey; 2, Brant Rancho; 3, Brant Rancho.

Five cows in milk—Brant Rancho.

The Ayrshires

The Ayrshire show was very light. E. B. MacFarland had out his full herd which, with the exception of a few from the Woodside herd, constituted the entire exhibit. MacFarland won all firsts and championships.

The Milking Shorthorns

J. D. Rowe & Sons, Davis, and Thos. Harrison of Santa Rosa staged the milking Shorthorn show, and as on former occasions when these two herds have met a good show ensued. Honors were practically the same as at Sacramento. Rowe had the grand champion female in the unbeatable Bellevue Daisy, and Harrison added another championship to Count Tickford's string.

The Horse Show

In many respects the showing of horses at San Francisco can be rated as one of the best exhibits seen in California in many a day. It is no doubt true that on former occasions various shows have had more entries in the draft classes, but it has been a long time since any show registered more quality throughout and fewer common things.

In point of numbers the Percherons led this division and the show had the virtue of bringing before the public many new animals not seen heretofore. The feature of the show was the splendid lot of mares and fillies shown by Miller and Lux. This firm came forward for the first time with a highly creditable display that for general type, quality and soundness could hold its own in any western show. Their good imported black mare, Lila, was champion. The champion stallion was the aged black shown by Thos. Harrison of Santa Rosa. He is a rather toppy old boy with a gay way of moving but hardly looked of championship caliber beside the good gray shown by the university.

The Shire exhibit was staged altogether by entries from the Blackhawk stable, and that fact is sufficient weight to attest to the character of the show. It is doubtful if any firm in America can produce more good Shires than are owned by Messrs. Easton and Ward. Their aged stud, Blackhawk Senator, was champion, and their wonderful black mare, Blackhawk Chessie, was the winning mare. This firm also had several hitches entered in the night horse shows and wherever entered won their classes.

Ratto Stock Farm, Napa, upheld the Belgian banner with a nice lot of mares and stallions. They had no competition and therefore won all the championships.

The Dibblee Estate, Santa Barbara, was on hand with a nice lot of Clydesdales that were without competition.

Each evening of the show there was staged a brilliant horse show under the management of Walter Palmer. The classes were invariably well filled and the manner in which they were run off was a delight to horse show fans.

The Sheep Show

Except in a few classes competition was not keen in the sheep division, but Professor R. F. Miller of the university who judged the various breeds declared that on the whole the show would rank high as to quality.

Bullard Brothers, Woodland, made a clean sweep in the Rambouillet classes. The Corriedale Sheep Company of Hollister did likewise with Corriedales. F. C. Needham was the only exhibitor of Dorsets. Some very excellent Leicesters were shown by Walter Sporle, Jr., of Canada. Bishop Brothers, San Ramon, were the heavy winners in the Shropshire classes. J. S. Hubbard and Sons, Monroe, Oregon, and Wm. Reddell and Sons of Monmouth, Oregon, had the principal Lincoln exhibits. Hubbard and Sons divided honors with the Corriedale Sheep Company in the Southdown classes. Perhaps the strongest competition developed in the Hampshire classes. In that division Hubbard and Sons fought it out with Straloch Farm, Davis, and Calla Grove Farm, Manteca. Hubbard had the two champions and Straloch won with a pen of lambs. S. C. Starr, Bellfountain, Oregon, Oxfords and Reddell had the only Cotswolds.

The University of California put on a splendid exhibit of fat sheep and as it had no competition it won all awards.

HEREFORDS WERE BARGAINS IN ASSOCIATION SALE

Ten members of the Pacific Coast Hereford Cattle Breeders Association consigned 28 head of bulls and females to the seventh sale held under the direction of that association during the California National Livestock Show at San Francisco. On the whole the offering was very attractive but did not meet with as ready appreciation at the hands of the buying public as had been expected. The average price of $270 hardly represents a true measure of value for the offering. There is no question but that the fact that the various breeders refrained from buying in order that new men would have an open field affected the final results. However, the consignors were generally well pleased with the fact that practically the entire lot went to men new to the business.

Henry Thiessen of Sweetwater, Idaho, had the satisfaction of selling the top female and the top bull. R. C. Jacks of Monterey was the buyer of the top female, paying $675 for the extremely well bred two year old heifer, Miss Rupert 7th. P. W. Snyder of Los Molinos secured a real value when he got the good young bull, Ruperts Model 14th, for $1,000.

To enumerate all the good buys would necessitate detail mention of the sale list. Mr. Jacks made another pickup when Chas. Rule's aged bull, Roehampton 34th, first in class at the show, fell to his bid of $425. Cazier and Sons sacrificed a good young heifer for $350.

Among the heaviest buyers were Owen Duffy, representing the Napa State Farm and C. B. Orvis of Stockton.

The sale was managed by the California Breeders Sales & Pedigree Company. Col. H. L. Hull was the auctioneer and John A. Bunting and Col. Davis worked the ringside.

Following is list of sales:

H. M. Barngrover, Taylorville
1, Lord Patricia 2d, bull, Oct., 1919; Tooby & Prior, Blacksburg, $225.
3, Byrdie Woodford, Nov., 1919; Napa State Farm, Yountville, $225.
4, Dixie Queen, Feb., 1916; C. B. Orvis, Stockton, $235.
5, Maida Rosemont, Jan., 1920; A. E. Perley, Hollister, $1.00.

A. H. Barnum, Moro, Oregon.
6, Donald Carlos 2d, bull, Apr., 1919; W. A. Frederick, Sunol, $375.
7, Princess Valley 15th, Apr., 1920; Cowell Portland Cement Co., $185.
8, Princess Carlos, Apr., 1920; Wm. Briggs & Son, Dixon, $195.

Wm. Briggs & Son, Dixon
9, Bourbon Columbus 30th, bull, Feb., 1920; A. E. Perley, $210.

John A. Bunting, Mission San Jose
10, Miss C 39th, Feb., 1920; C. B. Orvis, $185.
11, Miss C 38th, Feb., 1920; C. B. Orvis, $125.
12, Miss C 32d, Nov., 1919; Napa State Farm, $275.
13, Mission Lass, Sept., 1919; Cowell Portland Cement Co., $210.

J. H. Cazier & Sons Co., Wells, Nevada
14, Miss Defiance 7th, Oct., 1920; Napa State Farm, $350.

James B. McNerney & Son, Carlton, Ore.
15, Blanchard Donald, bull, Sept., 1920; Cowell Portland Cement Co., $325.
17, Jean Blanchard, Jan., 1920; Howard Tilton, Madrone, $200.
18, Lady Blanchard 25th, Jan., 1920; J. H. Cazier & Sons Co., Wells, Nev., $210.

Chas. Rule, Duncan Mills
19, Roehampton, 34th, bull, Feb., 1917; R. C. Jacks, $425.

H. Thiessen, Sweetwater, Idaho
20, Ruperts Model 14th, bull, Sept., 1919; P. W. Snyder, Los Molinos, $1,000.
21, Miss Rupert 7th, Mar., 1919; R. C. Jacks, $675.
22, Bonnie Belle, Feb., 1920; T. A. Work, Monterey, $185.
23, Perfect Queen, Sept., 1919; C. B. Orvis, $235.
24, Vanity Belle, Jan., 1917; R. C. Jacks, $300.

University of California
25, Bright Fairfax, Apr., 1920; Napa State Farm, $180.

W. J. Bemmerly, Woodland
26, Baby Clark, Dec., 1919; C. B. Orvis, $125.
27, Nellie Barton, Sept., 1919; Howard Tilton, $175.
28, Arlette, Apr., 1917; T. A. Work, $135.
29, Sally Clark, Feb., 1917; C. B. Orvis, $180.
30, Melba Cook, Jan., 1918; T. A. Work, $225.

LIVE OAK PIG CLUB WINNERS

Saturday afternoon, October 15, was an eventful time for the members of the Live Oak Duroc-Jersey pig club as it marked the end of the pig feeding contest. The judging of the pigs, scoring of the records, and announcing of the winners took place at the J. L. Ames place south of Live Oak, and it was an intensely interested group of contestants and parents that were present. The pigs were judged by Frank Spurrier of the University of California, and the scoring of the records was the work of a committee composed of Mr. Spurrier and Wm. Hudson. The awards were made on the basis of the following points: Value of the pig as a breeding animal, 40 per cent; economy of feeding, 40 per cent; neatness of record, 10 per cent; story of the contest, 10 per cent.

Cash prizes were offered by J. L. Ames and Witherow & Stafford to the four contestants making the best showing. The contestants winning prizes were Horace Vantress, first, $12; J. L. Ames, Jr., second, $8; Charles Vantress, third, $3.50; Grace Eloise Ames, fourth, $3.50. These four members were also the recipients of a trip to the University farm at Davis.

All members of the club will enter a sow and litter contest which will probably begin in November or December. At that time an opportunity will be given for any other boy or girl who may wish to join the club to get a bred gilt and begin with the sow and litter contest. It is anticipated that there will result from this contest a fine lot of pigs that will be shown in the pig club section at the state fair next year.

After feeding these Duroc pigs for four months every boy and girl in the club believes that they are fortunate in the selection of this breed, and all are satisfied that there is much to be gained by taking part in this contest.

DOES IT PAY TO RAISE RUNTS?

A questionnaire conducted among 1,000 leading farmers and breeders by the United States department of agriculture indicates that about 7 per cent of the annual production of farm livestock in the United States consists of runts and undersized specimens of the various breeds and classes. Farmers report that their annual incomes from livestock would be increased an average of 13 per cent if runts could be eliminated. Better methods of feeding and breeding better stock, the use of purebred registered sires, good care and systematic attention, better housing and sanitation, proper care of the dam before the birth of young, practical control of such objectionable parasites as worms and lice, the control of disease, and the culling from the farm of all stunted stock which indicates no possibilities of successful reformation and rehabilitation are the control methods recommended by these experienced farmers. About three-quarters of them say that it does not pay to raise runts, while the balance maintain that the Tom Thumbs of the livestock world can be raised successfully only when well bred and when plenty of cheap feed is available and dependable markets are readily accessible.

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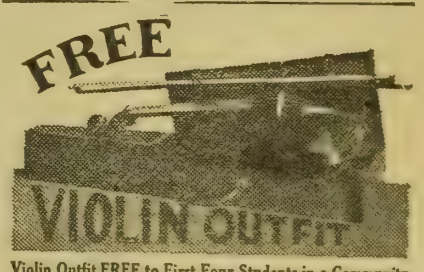

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

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UNIVERSITY OF ILLINOIS NOV 17

Advantages of Conservation of Moisture in the Soil

HILGARD'S "Soils," published some 16 years ago, referred to the power of dry soils to absorb beneficial gases, particularly referring to carbonic acid gas and its value in the soil. But he called attention to the fact the absorptive power was largely with the near-surface soils. Other books on soils and fertilizers a half a dozen to a dozen years later stated that "recent investigations seem to indicate that carbon dioxide is probably taken into the plant through the roots and that forms of carbon other than carbon dioxide may be found useful to some extent in supplying plants with their carbon food." In all cases investigators have found that the power of absorption is greatly increased by thorough and deep culture. We believe deep culture is generally secured by the orchardist in order that moisture may be more perfectly conserved. But if in addition to holding of soil moisture we encourage absorption of gases and better bacterial action then all the more there is profit in deep tillage.

One who has been most careful in his observation of the work of experimenters and specialists writes:

"That carbon plays an important part in the building of growing plant structures has been known for a long time. In fact, if water is taken from most forms of plant life, almost half the remainder (49 per cent) consists of carbon.

"In the breathing process human beings take oxygen from the air and exhale carbon dioxide. Plants, on the other hand, require the carbon dioxide in air and release the oxygen from their breathing organs in leaves, bark, roots, etc. The various bacteria native to soils and the chemical changes constantly present release a quantity of this gas, carbon dioxide, and if the surface crust is kept broken so that the gas may escape from the soil continually as generated, the plant structure is benefited accordingly.

"One of the experimenters, Riedel by name, found no exception to the rule that carbon fertilization increases the size and weight of fruits and roots. The smallest gain of any was 15 per cent. In all other experiments the gain was above 36—and sometimes as high as 100 and even 200 per cent. He declares that carbon fertilization produces greater results than other fertilizers, such as nitrogen, when each is used without the other, and finds that fields fertilized with both nitrogen and carbon dioxide increase their yields on an average of 82 per cent.

"The natural supply of this gas is in the air and is carried into the soil by falling rain, etc. In some of the experiments he obtained additional gas from factory chimneys, etc. He maintains that fertilization with nitrates is generally overdone and that part of its cost is useless without sufficient carbon to assist it and in nearly all cases finds that carbon is lacking in proper amount. He declares that limited carbon fertilization can be attained, if soil is well supplied with organic matter, by keeping the surface looser than is at present the rule. We have been taught in our agricultural schools that this process aired the land and assisted oxidation processes and so benefited growth, but it appears that much of the benefit, though little realized, was due to assisting carbon released from the soil to rise freely to the leaves above. One experimenter shows that the amount of carbon dioxide released by well cultivated soil is three times as great as from a crusted soil.

"From these interesting experiments it would appear crop increases from proper treatment of soil to assist carbon fertilization can be gained by every practical farmer by proper cultivation."

To summarize some of the great needs for orchard soils:

Store more water.

Once stored, keep it.

Break up plow sole and open the way for the lower reservoirs to supply even surface growing roots. In other words, employ tools or implements which will let nature do her best.

In all soils, (Continued on Page 503)

Good Work with Subsoiler

Works Well with Heavy Soils

Established 1877 Forty-fourth Year

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and LIVESTOCK and DAIRY JOURNAL

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We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

If among the more than 40,000 Cultivator's weekly circulation any fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

EDITORIALETTES

Just a word as to the value of subsoiling given on this week's cover. This is the period of the year when the subsoiler should be worked. Soils which take in only a limited quantity may have their water holding capacity greatly increased by stirring and loosening up the subsoil. California farmers as a rule have the tools and they have their farms equipped with power to move them. The day of the light draft tool has passed for California farms.

* * *

Almost every mail brings information from the War Finance Corporation of thousands, sometimes millions, being advanced to a financial institution in Iowa or another in Nebraska or South Dakota or Minnesota or Wyoming, to be used for agricultural loans or often on livestock. The largest loan referred to in the report which comes in the last mail is of a million to a financial institution in New Orleans to finance the export of wheat and cotton. Some are disappointed because the activities of the corporation have not resulted in more complete return to normal conditions, but it is to be presumed that it will take many months, possibly years of time, and much patience and forbearance before we see a return of our former "good times." Some have insisted that they could not begin to return until the loans made by this government to foreign countries are cancelled either by payment or by voluntary action on the part of the U. S. A. If we wait for full payment it will be a long time coming.

* * *

Near East Relief is with us. It seems years since we began to learn of the terrible suffering of the people of those countries under the heel of the Turk. It has been years, and the appeal has been regular and persistent. This same appeal will doubtless continue until civilization takes a hand and prevents the slaughter. A special drive is now on. Meantime the people are starving and there is an especial appeal for relief to be secured during the coming Holiday season.

* * *

Pure breds are sometimes poor breeds. Therein is where cow testing associations are doing some excellent work for the dairymen, in eliminating a whole lot of the poor breds. Look for performance as well as pedigrees.

* * *

After 20 years connection with the University of California Prof. C. W. Woodworth will now transfer his activities to Kiangsu, China. Prof. Woodworth has been a persistent student of insect life on the Pacific Coast.

* * *

It's time for a bit of shrinkage in our tax rate. This is tax paying end of the year and we are reminded that "taxes are high." This seems a very familiar quotation. We began using it very many years ago before the world knew what high taxes were. Since then there has been regularity in the annual increase. The Pacific Coast is not to be outdone in this particular, and of all the cities in the United States Los Angeles ranks fourth in its per capita tax. In fact, that city is the highest of all the cities of the world in its tax for schools, which aggregates $10.88 per capita. Its total tax for every man, woman and child is $26.62. It is exceeded only by Boston, Pittsburg and New York in this latter total. One trouble with this tax business is that we of the Pacific Coast are growing so fast and we are bound to maintain, or rather exceed, conditions in older settled communities, and it appeals to us at bond election times that nothing is too good for California, so we vote, and perhaps too often get what we vote for, higher taxes.

BEETS ON 50-50 BASIS

Ventura County sugar beet growers are demanding a more just division of the returns from beet sugar. Stung by the injustice of former methods of division the growers have united and appointed a committee to make investigation and determine as to what will be a fair demand for them to make on the factory people. At a special meeting held recently at Oxnard under the general direction of the Ventura County farm bureau the committee reported. The first step of the committee's work was the formulation of a questionnaire which was sent to 50 growers, business farmers, who knew their own methods and the costs thereof and could furnish proof as to those costs. From the responses to this questionnaire it was learned that the total average cost per acre from fall plowing to payment of taxes was $57.53 per acre. The average tonnage per acre was 9.02. The average per cent of sugar was 18.4. Total average receipts were $58.26. This left a net profit per acre for the period of 12 months of 73 cents.

On the other hand it was determined that the gross factory receipt per acre, less the amount paid the rancher, was $91.11.

The report of this committee with extended discussion of the growers present resulted in:

"We, the committee, recommend the following prices for beets for future contracts: The growers to pay for seed, grow harvest and deliver beets at dumps. Factory to manufacture and sell sugar on the market. Growers to receive in payment for same a 50-50 division of the average whosesale selling price of sugar for the year on San Francisco basis.

"Also, the grower to receive a just share of beet pulp after factory has been allowed enough to cover all expenses such as drying, sacking, marketing and interest on investment on pulp equipment."

The growers are not attempting to make unfair comparison in referring to their own net profit and at the same time to the gross amount received by the factory people. Presumably the producers have no very definite information as to the net return the sugar factory receives on each acre the farmer grows but, beside paying his own expense and even providing a sinking fund, the manufacturer is receiving more net returns from each acre of sugar beets grown than does the owner and grower. A fifty-fifty basis of division looks eminently fair.

As to capitalization of sugar factory and that required by farms which grow the beets for the factory, it has been definitely proved that the investment of the producer is proportionately vastly greater than that of the manufacturer.

In this connection we believe there have also been some exceptionally interesting figures as to the amount invested in overland railways and in California orchards.

FREIGHT RATES—FARM RATES

In the November issue of the National City Bank Review of Economic Conditions, the leading article has to do with the railroad situation. It calls attention to the terrible burden of the increased freight charges on all kinds of industry and at the same time refers to the plight of railroad finances and the efforts of managers to reduce operating expenses. The railway executives are now bound in many particulars, especially by the requirements of the railroad labor board. There have been slight reductions in railway men's wages, and even this slight reduction was almost sufficient to cause a strike by the employes.

The railways have likewise made slight, very slight, reductions in rates on a few farm products. In discussing the situation the National City Bank quotes from a letter written by an Illinois farmer to his implement manufacturer:

"I need a wagon and my dealer wants the price of 650 bushels of corn for the same wagon I could buy with 200 bushels of corn before the war. The harness man wants the price of a wagon load of hides for a No. 1 harness. I simply cannot see my way clear to buy wagon, harness or anything else that I can possibly manage to get along without."

The manufacturer replied:

"Our present price, F. O. B. factory, on a farm wagon, is 100 per cent higher than our price of 1914. At this price we are selling this wagon at approximately 20 per cent less than our cost. The cost to you, however, does not bear the same relation to the prewar price, for the reason that in 1914 the freight on a farm wagon from our factory to you was $1.37 a hundred; the present rate, including the war tax, is $2.32.

"A farm wagon weighs 1200 pounds. The difference in freight of 95 cents per hundred makes the transportation on this wagon alone cost $11.40 more than it did before the war. The increased transportation costs upon the materials that go into the wagon are even greater than this amount.

"When you come to pay for this wagon through the sale of corn in the Chicago market you have a still greater disadvantage, due to the fact that corn has declined since 1914. The freight on corn from your station to Chicago in 1914 was 24½ cents a hundred, or approximately 14 cents a bushel; today, with the 3 per cent war tax included, it is 47 cents a hundred, or approximately 26 cents per bushel, so that you pay 12 cents a bushel more to get your corn to Chicago than you did in 1914.

"You state that it requires 650 bushels of corn to buy a wagon today. At 12 cents a bushel increased freight this means that you are paying the railroads $78.00 more transportation on the corn necessary to buy this wagon, therefore your increased contribution to the railroad company in getting this wagon out there and shipping corn enough to Chicago to pay for it, is $89.40.

"You can well see from this that it is absolutely impossible for any of us to get back to a normal basis of prices until the cost of transportation is very materially reduced. You ask us when conditions will change; we tell you, when transportation costs are gotten back upon a reasonable basis. The great difficulty in getting this adjustment now is the expense the railroads are put to for labor, for example, here in this community, while the going rate of labor is 30 cents an hour, at the Rock Island shops 43 cents per hour is being paid for eight hours a day and time-and-a-half for overtime, with the proviso that if more than one hours' overtime is worked, even though it be ten minutes, five hours' additional compensation is charged. Locomotive engineers are getting from $3,500 to $5,000 a year. A good deal the same condition obtains in our coal mines.

"We all must work, through our congressmen and through a united public sentiment, to secure a readjustment of these railroad and mining costs before any of us can hope to resume business in a normal way. As far as we here are concerned, we have already made substantial reductions in our prices and expect to continue to do so in future as reduced costs of production permit. We are continually operating at a very substantial loss. The business world, outside of transportation and mining, has gone as far as it can until it gets relief through these channels."

As to return to the farmer: The department of agriculture has found that:

"Compared with a five year average before the war as 100, the purchasing power of some farm products at prices paid to farmers in June, 1921, were as follows: Corn 61, oats 60, barley 53, wheat 93, rye 101, buckwheat 101, flaxseed 55, beans 81, cotton 51, cottonseed 52, hay 68, cabbage 111, onions 73, potatoes 64, sweet potatoes 89, peanuts 48, apples 91, chickens 116, eggs 77, butter 83, milk cows 80, beef cattle 69, veal calves 73, sheep 66, lambs 79, wool 58, hogs 67, horses 45. Practically nothing that the farmer sells can be exchanged for the usual quantity of other things. It is physically impossible for farmers to absorb the products of factories. Farm prices have dropped much more than wholesale or retail prices of farm products."

The prices used in these comparisons were those of some four or five months ago. For instance, corn at that time, 60 cents a bushel, has dropped until it is now worth little more than 45 cents. Wheat has done the impossible and is today under the dollar mark, yet the railway laborer is demanding that his salary remain at the $3000 to $4000 level while the farmer is ruined.

On the other hand, as shown by the manufacturer in the letters above referred to: "At the beginning of the war farm products went up much faster than the products of labor, and for a time the farmer had the best of it. In the readjustment period after the war, which we are having now, the reverse is true." But we think we may safely add that the readjustment is vastly more extended than was the inflation period, and it is becoming a question as to how long the farmer can grit his teeth and hold on.

California Cultivator

Vol. LVII, No. 20 Los Angeles, November 12, 1921 One Dollar Yearly

The Problem of the Old Orchard

By Charles C. Chapman Before State Fruit Growers

CITRUS trees planted in the fertile soil of California usually bear bountifully while young and vigorous, producing heavy crops, even though given but little cultural attention, but we find that as they grow older passing, say, 25 years of age, we must give them increasingly greater care and attention if we are to expect from them a profitable quantity of good fruit. In this characteristic they might be compared to a young team of horses or mules, which will display wonderful energy, doing a vast amount of work, whatever the attention given them, but as the years pass and they begin to age we find we must favor them, giving them more rest and better attention if we are to conserve their strength.

It requires no expert farming to grow good crops from young trees; ordinary cultural attention will usually bring satisfactory results. But when the foliage is less dense and the leaves are small and not so glossy; when the branches are numerous, the fruit small and the crops light; when, in other words, we see every evidence of age and gradual decline, then we must give them thoughtful attention, if we are to enable them in their old age and decrepitude to be profitable and not simply cumberers of the ground. We must then be like the scientist who recently grafted into the body of an old man a monkey gland in order to give him the "pep" of youth. What can we do to inject renewed vigor into our old trees? is a question worthy of our consideration. Many of our orchards are getting along to the time when we can call them old. This question has not bothered us heretofore, for most of our orchards were young and vigorous, but from now on, I predict, the problem of our old orchards will be a popular subject for discussion before gatherings of our citrus growers.

It has been reported that in Florida, where the citrus industry is older than it is here, they are now largely up against the problem of old orchards and recently have been making experiments with 50 year old trees in the way of heavy pruning and breaking up of hard subsoil with dynamite. They should soon know something definite in regard to results obtained from such treatment, and we perhaps can benefit from their experience. However, while there are a few fundamentals in the care and treatment of old orchards, local conditions have so much bearing upon this, as they do upon almost every other cultural problem, that it is difficult to suggest a definite treatment adapted to all localities and all conditions.

Let me pause to say, by way of admonition, that the best time to take care of an old orchard is in the days of its youth. Keep it continuously in good condition, not permitting it to get out of condition at any period or during any season of the year. The day of decrepitude will be longer deferred when this even and proper treatment prevails.

Age, however, will tell even though the best of care is given an orchard. Just how many years from the planting of an orange tree must pass before we are forced to call it of questionable age cannot be definitely stated. Varieties, and conditions that we may call local, and cultural treatment, will have much to do with the apparent age of a tree. In Spain and Italy we are told trees live to be 100 and even 200 years old and still are in bearing. I do not think, however, that we can with our more intensive farming expect any of our trees to continue profitable bearing so long even should they live to that age.

Perhaps the most satisfactory discussion of this question, especially the practical cultural phase of it, will be to briefly describe the methods we have followed in the treatment of our older orchards. These orchards had given every evidence of age and demanded more than ordinary attention in order to bring them back to normal production of good fruit. I am pleased to state that the methods followed have thus far proven satisfactory and I believe that in general they may be followed with a fair degree of confidence in almost any locality.

Nature in many ways helps the young orchard. Perhaps most important among these is a wealth of sunshine, which is so essential to the proper functioning of the leaves and also to aid in the process of nitrification that takes place in the soil; but in the older orchard we have the large trees growing closer together, preventing the sunshine from having effective influence either on the leaves or on the soil. It is therefore essential to put the older tree back, to some extent at least, into the condition prevailing in the earlier years of its life. This we have done by heavy pruning. In some of these older trees we have taken out large main branches at the top, opening up the tree to the sunshine, and also cut off large extending branches, permitting the sun to reach much of the soil heretofore shaded.

We have found that as our trees grow older and larger the overhanging branches prevent the cultivation of the ground beneath them. Thus a large portion of the ground allotted to a tree becomes hard and dry and furnishes it no nourishment. The tree, while growing larger and demanding a greater supply of plant food is permitted to encroach upon the soil and cut off or diminish its own food supply. We have found it quite as necessary to cultivate the soil under the tree, that is, around and about the trunk, as it is in the open spaces between the trees. For this purpose we have tried various types of cultivators, but none has proven entirely satisfactory. To do this cultivating under the large trees would appear to call for larger implements, but to the present time none has been presented to us which seems practical for the work.

We have therefore had to resort to hand work, digging up the soil, before and after the winter rains, with hand picks. We are in this way keeping most of the soil in fairly good condition so that the root system of the tree may have opportunity for development. We found that under most of our older trees the ground was hard and dry and that there were no feeders upon the main root system for from four to eight feet from the trunk of the tree. Breaking up this soil, fertilizing and irrigating it has developed in it a considerable feeder root system which undoubtedly is largely responsible for a rejuvenated appearance of the trees. To this, at least in conjunction with the heavy pruning, is to be largely credited the bringing back of the trees to their normal production of good fruit.

Possibly the greatest problem we have to contend with in the care of an old orchard is the eradication of the various scale and other pests. It seems almost impossible when an orchard of large trees is once heavily infested to get a uniform kill in all parts of the tree, due largely either to imperfect diffusion of gas or unevenness of the hatch. The shaded condition of the old orchard, however, is doubtless to some extent the cause of both the increase of these pests and of the difficulty of eradication. Fumigation is therefore an item that may add to a considerable extent to the debit side of the account with the tree and must be taken into consideration in deciding whether it is profitable or not.

Of late years considerable attention has been given to individual tree performance records. It stands to reason that such records become particularly valuable in the case of old orchards where trees begin to fall off in production due to old age, the evidence of which may appear in varying degrees and years apart in the different trees. There is an average amount of fruit which a tree must produce in order to pay for the necessary labor and material supplied to it and also give some return on the capital invested in it, and when a tree falls below this average it is time to make investigation as to the cause. Generally speaking something can be done to bring it back to profitable production, but if our best efforts fail the sooner the tree is taken out the better. And even after everything has been done to rejuvenate a tree, there comes a time when it is incapable of producing a profitable crop. When that time comes we should know it and be prepared to take out the old tree and fill its place with a young one. Procrastination will simply mean a greater loss and put farther and farther away the time when we can look for a profitable return from our orchard.

Many of our citrus growers have doubtless had greater experience in dealing with this problem than I have, and will, therefore, be able to make a more valuable contribution to the discussion of the question than I have made. Anyway, it is not good farming for us to permit our trees to deteriorate to the point of becoming unprofitable without a determined and studious fight. Our growers have successfully met all other problems that have come up from time to time,—and they have been many, and some perplexingly difficult, and I am certain they will meet this one and conquer. They will not permit our orchards to permaturely grow old. In California we drink at the fountain of perpetual youth. We therefore find our people in their prime at an age which in the East would be called old. I am confident, therefore, that we will discover some method of injecting into our orange trees an anti-age toxin that will keep them in the vigor and beauty of their youth until they pass at least the half century point.

* * *

Continuing discussion of citrus tree deterioration, A. D. Shamel of the department of agriculture considered orchard practices and rebuilding methods from practically every angle. From his address we have taken only that portion touching upon the improvement of orchard soils and resurfacing, together with summary, or conclusions.

* * *

By A. D. Shamel

Old citrus trees which have declined in production as a result of neglect of essential cultural treatments can usually be brought back to normal production. There are illustrations of this possibility in every important citrus district in California with which I am familiar. In fact, some of the most profitable investments in the citrus industry that have come to my attention have been where old and neglected orchards have been purchased and brought back to satisfactory production by good cultural and individual tree care. Experience has demonstrated in these instances that one of the first considerations is the improvement of the orchard soils.

One of the most important factors is the application of adequate amounts of organic materials during the proper season. Of these materials, stable manure, alfalfa hay and bean straw are most available and commonly used. These should be purchased and applied on the basis of their nitrogen and humus or organic content. In most instances sufficient materials should be used so that not less than 150 pounds of nitrogen be applied per acre. In a few cases under my observation of the care of old citrus orchards very much larger amounts have been used with profitable results.

The application of stable manure, alfalfa hay, bean straw or similar organic fertilizers during the late summer or the autumn months has usually given the best results. This treat-

(Continued on Page 498.)

Agricultural News Notes of the Pacific Coast

Northern California

Practically all rice is now harvested.

Onions are bringing $4 a hundred in car lots f. o. b. shipping points.

There is discussion of transferring Colusa County's fair from Arbuckle to Colusa.

R. L. Williams of Oroville has been named deputy county bee inspector of Butte County.

An agricultural club has been organized on the Capay Rancho in Tehama County.

The short course in poultry management has just closed at the Sebastopol high school.

Some of the rice growers of Colusa are planning to ship their paddy in bulk to tidewater.

Rice growers in Colusa County report that serious damage has been done by wild ducks.

The Earl Fruit Company has shipped nearly 1,200 carloads of grapes from Lodi this season.

There has been an exceptionally heavy production of rye grain in Siskiyou County this year.

A strawberry club was organized at Del Paso among boys of the Sacramento County farm bureau.

The Placer County Growers Canning Association is installing machinery in the Lincoln plant.

A cold storage plant has been installed at the creamery station on the state land colony at Durham.

The next regional conference of the Smith-Hughes agricultural instructors will be held at Colusa, December 2 and 3.

Lodi has wound up its grape shipping season. The calling off of the railroad strike boosted prices for the last carloads.

Roosevelt Day, October 27, was observed in the schools of the state in accordance with proclamation by Governor Stephens.

The state reclamation board has let contracts for concrete highway on the levee on the east bank of the Sacramento River at Hood.

Bean and rice growers of District 70 are rushing harvest operations in order to get their crops in before the first rains. Yields are heavy.

At the hog auction held by the Sutter County farm bureau last week on the Noyes ranch near Sutter City 211 hogs were sold at from $7.90 to $10.25.

Field Representative Schmidt of the Sutter Peach Growers reports signing up of 50 per cent of the tonnage in the Linden district of San Joaquin County.

Two hundred head of cattle owned by the state university have been brought down from mountain ranges to the stock farm near Shingle Springs in El Dorado County.

Banks of the Sacramento valley have set aside $1,400,000 to assist rice growers in marketing this years' crop. Probably another $1,250,000 will be made available by the war finance corporation.

Reports from the Sacramento-Yolo Cow Testing Association for September show Tromp Brothers of Clarksburg owners of the highest testing cow. They also hold the yearly record in the association.

Central California

The farm bureau of Poplar, Tulare County, will build a cold storage plant next spring.

Orange picking in Tulare County will start about the middle of November. A heavy crop of good quality is promised.

There was an attendance of nearly 2,000 at the annual picnic of the Fresno County farm bureau at Kearney Park.

Riverdale, Fresno County, celebrated Armistice Day with a procession, barbecue and other entertainment features.

Hog auction sales will be held in Kern County at Bakersfield, November 19; McFarland, 25; Wasco, December 3; Bakersfield, 17; McFarland, 23.

The organization committee of the Kern County irrigation district is going forward with plans to put water from the Kern River on 292,000 acres.

A number of grain farmers near Los Banos, Merced County, have been running day and night shifts to get their grain sown before the rains start.

Over 60 carloads of dried peaches, raisins, canned goods and grape juice during the week have been consigned to various points in the United States from Kingsburg.

At the recent meeting of the Central California Wool Growers Association at Stockton it was recommended that the annual meeting of the state association be held in Fresno.

A boys' pig feeding club is being organized in the Owens Valley of Inyo County. The pigs are furnished by the Owens Valley bank. The corn club contest closes today.

The Central California Wool Growers Association has decided to reduce wages of sheep herders to $40 a month and found. The San Joaquin Valley association has already adopted the same wage.

Farm home department meetings will be held in Kern County at Shafter, November 8; McFarland, 9; Arvin, 10; Weed Patch, 15; Inyo-Kern, 25; Kern Delta, 28; Wasco, December 1; Edison-Fairfax, 2.

At a recent meeting of the directors of the Valley Fruit Growers Association at Fresno it was decided to extend the scope of the association's activities to cover practically every branch of agriculture.

The Valley Fruit Growers Association has adopted a new wage scale for farm labor. Ranch labor will be paid $1.75 to $2.00 with board, $3.00 to $3.50 without. Wages for pruners and others will be announced about December 1.

The San Joaquin Valley Citrus Fair will be held at Visalia, December 10-17. Madera, Fresno, Kings, Kern and Tulare Counties are joining in preparations for the fair which will be opened by President Harding pressing a button in Washington.

Recently elected officers of the Central Wool Growers Association are: P. J. Connolly, president; S. Arbius, vice-president; W. Bristol, secretary; C. G. Owens, treasurer. Directors: E. Cady, J. S. Concannon, Jas. Gallagher, J. McGlinchey, E. H. Tyron, A. Denton, H. Arbius, P. Arbius.

Southern California

The quail season opened November 1.

Elsinore is holding a four day carnival and rodeo, November 10-13.

Foggy weather has delayed drying of walnuts in Ventura and Santa Barbara Counties.

A calf club has been organized among the boys and girls of the Santa Paula farm bureau.

The fall flower show of the Redlands Horticultural Society was held last Friday and Saturday.

Work has started on the new highway to be known as the Oxnard-San Juan Capistrano road.

The annual meeting and election of the Los Angeles County farm bureau will be held early in December.

Santa Barbara County farm bureau has established a marketing exchange. Admission fee to members is $25.

Covina, Los Angeles County, shipped 632 cars of Valencias through the California Fruit Growers Exchange.

The apple crop of the Yucaipa Valley is practically cleaned up. It appears that the output will be more than 800,000 boxes.

Howard Pressey will take up the management of the Rancho Sespe in Ventura County which was so long managed by W. H. Fleet.

More than a million dollars damage was done last week by fire to the Los Alamitos sugar factory in Orange County near Long Beach.

A special session of the League of the Southwest will be held in Riverside early in December to discuss power problems on the Colorado.

The Lima Bean Growers Association expects to receive funds from the War Finance Corporation to aid growers in marketing the present crop.

At the last meeting of the directors of the San Bernardino County farm bureau it was decided to organize a department of the Mojave to consider problems of desert centers.

Checks are being mailed by the California Lima Bean Growers Association, making final payment on the 1920 crop. This brings the total payment up to about $5.36 net to the growers.

Albert R. Gould, who writes the garden calendar for northern California in the Cultivator each month, addressed a meeting at the Ventura County fair on "Garden Cities and Landscape Gardening."

The Southern California Poultry Association show will be held at Santa Ana, Orange County, December 13-17. It is expected to house the show in the packing house of the Santa Ana Walnut Growers Association.

An Ojai, Ventura County, farmer spent a day at the county fair and returning found his entire grape crop had been picked and hauled away. Neighbors saw a truck with crew of 12 or 15 men at work but supposed their activities to be entirely legitimate.

The state highway commission is making surveys and getting work under way for the paving of the Banning to Indio road. The road will extend along the northern side of the Southern Pacific and save the detour against the southern hills, thus shortening the route by at least five miles.

The Coast and General

The Salt River Valley is shipping citrus fruits.

Seligman, Arizona, shipped out 50 carloads of feeder cattle, October 27.

The National Grange will hold its annual meeting at Portland, Oregon, November 16-26.

In the Yuma Valley of Arizona oranges are coloring up nicely but few have been shipped yet.

Heavy drying winds have taken the moisture out of range grasses in Northern Arizona and New Mexico.

The Maricopa County Poultry Association is holding its eighth annual show at Phoenix, Arizona, this week.

Farm bureau members in Umatilla County, Oregon, have marketed over 200 bushels of certified seed wheat.

The 1921 crop of watermelons broke all records according to the bureau of markets reports from the eastern states. It was more than double the crop of 1918.

The 1921 production of alfalfa seed in the United States is slightly larger than last year. The greatest increase in production is in Utah, South Dakota and Arizona.

The great Pacific International Show at Portland, Oregon, closes today. Last years' exhibits of livestock numbered 3,000. This year they ran well over 4,000.

The honey movement from the western mountain states was very heavy during September. More interest in extracted is reported than at any time since the spring of 1920.

Contract sales by potato growers of the Yakima Valley of Washington this year started at $15 to $20 per ton, increased rapidly to a peak of $34, and then eased off to a level of $25 to $28 per ton with but little activity.

North Dakota stepped into the front rank of potato shipping states the first week of October with shipments of 1,672 cars, compared with 175 cars for the corresponding week a year ago and 1,825 cars for the whole of last season.

The third week of November is "club week" at the Ohio state university at Columbus when 600 boys and girls, members of agricultural clubs who have won county championships, will gather for a season of conference and inspiration.

The 1921-22 currant crop of Greece has been estimated at approximately 275,000,000 pounds, as compared with 190,000,000 pounds last year, reports the American consul at Kalamata. The currant season in Greece begins on September 1.

The harvest of Jonathan apples in the Yakima and Wenatchee Valleys of Washington was at its height the first part of October, a week to 10 days in advance of the usual season. The early movement from the Wenatchee district was heavier than from the Yakima Valley.

The potato crop for the entire Yakima Valley, Washington, district will probably total 2,500 to 2,800 cars, principally Netted Gems, according to local estimates. The crop in general is showing excellent quality, although some wire-worm injury and second growth are reported.

Trees Near Line Trespassers

FEW questions have come to the office of the Cultivator oftener than those having to do with injury to one orchard by eucalyptus or other trees set on or at least near line on adjoining property. It is well known that roots of eucalyptus trees affect fertility and moisture content of the soil 40, 50 or even 100 feet from the trunk. As a rule courts have held that while the injured party may on his own land trench or otherwise restrict growth of trespassing roots there is no definite enactment which enables him to compel the trespasser to cease doing the injury, but where he can make definite proof of a certain amount of damage because of such trespassing roots or tops, he can collect damages. Such was the decision of the superior court of Los Angeles County in an action brought some months ago. The plaintiff appealed from the decision and it was carried up to the district court of appeal of the Second Appellate District of California. The appellant was represented by Attorney L. B. Stanton, who has answered legal questions in the columns of the California Cultivator for many years. From the copy of the decision of Judge Shaw, which was concurred in by Judges Conrey and James, a decision which was filed October 31, we are permitted to quote:

"Action for damages and injunctive relief against defendant, who, on her own land adjoining that of plaintiff, maintains a row of growing eucalyptus trees set one foot from the common boundary line. Judgment went for defendant, from which plaintiff appeals. It appears without controversy that plaintiff and defendant are owners of adjoining tracts of land, that of plaintiff lying immediately west of defendant's tract. Plaintiff has growing on his land a walnut orchard set out in 1914, the easterly row of trees being 20 feet distant from the boundary line common to the tracts of land; that set in place at about the same time and one foot east of said boundary line, defendant maintains a row of eucalyptus trees 300 feet in length, which, at the time of the planting had attained a height of upwards of 100 feet.

"This being the situation, plaintiff on March 9, 1920, filed his complaint alleging, among other things, that the roots of the eucalyptus trees had at the time extended into and through the northerly 350 feet of the eastern portion of his land a distance of upwards of 50 feet, by reason of which fact the east row of walnut trees were dwarfed and stunted and the soil for a distance of 50 feet from such boundary line had been deprived of moisture and plant food necessary and required in their growth and production of walnuts, all to his damage in the sum of $590.80; that by reason of the rapid growth and far reaching extent of the root system of said trees unless checked, he will be continuously and further damaged and that row of trees next east distant 60 feet from said boundary line will, due to the increasing root growth, be likewise affected and the strip of land 60 feet in width adjoining said row of eucalyptus trees rendered valueless in the growing of walnuts or of crops of any kind. Prayer for damages sustained by reason of injury due to the facts alleged in the complaint and for an injunction requiring defendant to abate the nuisance by checking the growth of the roots of said trees upon and into plaintiff's land."

The defendant denied many of the allegations and referred to the fact that she had materially reduced the tops of the trees wherever they had projected over the lands of the plaintiff and granted that the plaintiff had the right to reduce the root growth on his own land. Many authorities of lower courts were quoted but the decision concludes:

"It does appear without contradiction that the roots of the eucalyptus trees do intrude into plaintiff's land to a distance of some 50 feet; that in many cases the roots surrounded the trees in the first row next to defendant's land whereon the eucalyptus trees were growing and that by reason of the extent of such root system and the voracious feeding qualities of eucalyptus trees they had in their growth absorbed from plaintiff's land the moisture and food value which but for their presence would have supported the growth and production of the walnut trees and that where they were stunted and dwarfed bore little or no fruit. Respondent attracts our attention to no testimony whatever which supports the findings. Her sole concontention is that since plaintiff can abate the nuisance by cutting off the roots that is his sole remedy, by reason of which fact she argues that even conceding the findings are not supported by the evidence, nevertheless, under section 4½ of Article VI of the constitution, it is the duty of this court to affirm the judgment. The contention is without merit.

"As to the judgment in the justice's court pleaded in bar, it appears from the record that it was an action for damages alleged to have been sustained by reason of defendant's acts prior to the filing of the complaint therein on December 20, 1918, in growing said row of eucalyptus trees. Conceding that such judgment might bar recovery for damages prior to such time, it could not affect plaintiff's right to recover for damages sustained subsequent to said date. In no event could it bar his equitable rights to an injunction to prevent a continuance of the injury. Moreover, it appears that the action was dismissed by plaintiff. Nor is there any finding as to the truth of such matter pleaded in bar. Since it was not a judgment of a court of record and the allegations of the answer touching the matter are deemed denied, a finding thereon should have been made.

"The judgment is reversed."

A Rational System of Pruning Walnut Trees

By Vincent F. Blanchard

WITH the coming of the dormant period for trees walnut growers are again asking the question, "What is a rational system for pruning walnut trees?" For a number of years walnut growers have been practicing pruning, but in general their work consisted largely in cutting off lower branches and in the elimination of dead wood. They did not consider pruning as a means to increased production and better nuts but took it for granted that branches would hang low and wood must die in the center.

Deciduous fruit trees have been studied for many years and a rational system of pruning has been worked out for them. Citrus trees have been studied to a great extent and much has been learned for a rational system of pruning that class of trees. Walnut trees have not been studied so extensively as either of the above mentioned classes of fruit trees, and not as much definite knowledge has been accumulated concerning them in relation to pruning. It is hoped, however, that investigations now under way on this subject at the citrus experiment station under the supervision of Dr. H. S. Reed may eventually result in a better understanding of the principles involved. The knowedge which has already been acquired of the fundamental principles of pruning deciduous fruits and citrus will go far towards the solution of this problem. In fact, there is enough evidence at hand of the fundamental factors to consider in pruning walnuts to give us a working basis until the experiments underway at the citrus experiment station and be worked out.

Sunlight Important

In studying the activity of walnut trees it has been observed that there are a number of factors to consider in the determination of a system of pruning. In old groves, with the trees almost touching, it has been observed that the trees in the outside rows are the greatest producers and in those same orchards where a tree has been taken out the trees around the vacant place produce more nuts than the average trees in the orchard. A close examination will show that by far the greatest amount of the nuts are borne on the portion of the trees away from the orchard in the case of the outside rows, and towards the vacancy in the case where one tree had been removed. The important factor to consider there is that the portions of the trees receiving the most light produced the greater amount of nuts. That holds true throughout the entire orchard for where the branches are shaded most of the time only a small amount of nuts is produced. Wherever sunlight strikes the foliage nuts can be seen.

Light is an exceedingly important factor in all plant life. If leaves do not receive sunlight they cease to function normally, they become parasitic and do not help to supply food. An examination of any unpruned walnut tree will show that. As stated in the first part of this article the walnut grower has taken it for granted that branches and foliage on the inside of the tree will die back but he failed to figure out why the branches died. The explanation is simple for it comes right back to the important factor of light coming in contact with foliage. Since the trees have been left to grow year after year without pruning they have become so dense that it is impossible for sunlight to penetrate to the interior foliage. Foliage on the inside soon dies for the leaves have failed to receive the sunlight necessary to permit transformation of plant food to forms which can be utilized for tissue building.

Pruning Mature Trees

A walnut tree in order to bear a maximum crop of good nuts should have all its leaves in good working condition. Since the greater source of food comes from the air through the leaves in the form of carbon dioxide it is all important that those leaves be in a healthy condition throughout the entire season. In order to get such a condition it is necessary that the tree be opened sufficiently to allow sunlight to penetrate to all parts. Some trees are naturally open and do not require artificial opening up but since most walnut trees have been left to grow with no pruning outside of removal of dead wood and under cutting it is necessary for the greatest portion to have a moderate opening up.

The pruner should examine the tree carefully before making any cuts and determine what limbs can be taken out which will allow sunlight to penetrate and yet not injure the tree. In most cases there are large limbs growing straight up in the center of the tree whose removal will hardly be noticed from the outside. It is better to take out whole limbs rather than many small branches. That simplifies the work and makes it less expensive. It might seem as if a large portion of the bearing area is removed by so doing, but in fact the bearing area is increased, for sunlight is allowed to penetrate and fruit wood forms on the inside where before none could grow. Nuts are consequently borne both outside and on the interior fruit wood. The pruner should use good judgement in determining how much to thin out. If there is a large number of limbs to take out, the job should be spread over more than one year for there is danger of shocking the tree by excessive cutting at one time. If such a method of pruning is practiced the amount of pruning in future years will be reduced for little wood will die on the inside from shading out. It might well be stated at this point that all of the dead wood in walnut trees is not caused by shading out for in many instances drouth injury will cause it.

This method of opening up the top of old walnut trees has been used by a number of progressive walnut growers with success. Among those who are using this practice successfully is Carlyle Thorpe, general manager of the California Walnut Growers Association.

In order to make cultural work easier it is necessary to cut off some of the lower branches. Every year there are a few lower branches which hang down in the way, and these should be cut off. Such branches should be cut back to the point from which they came and not headed back. That applies as well to thinning out within the tree, for heading back walnut branches results in weak growth. The cuts should be made so that they will heal quickly. A cut on top of a limb will not heal over, while one on the under side will heal quickly.

Some walnut growers use the axe as the chief pruning tool. Although some think they become very efficient in using such a tool, it is a poor practice. An axe cut is very smooth and a wound dressing will not cling to it as well as to a wound made by a saw. A saw is the best pruning tool to use, and for quick work one attached to a long handle is very efficient. With such a tool much of the work can be done from the ground and it relieves the pruner of much climbing. The cuts should be close to the trunk or limb to facilitate healing over. Soon after the cuts are made a good wound dressing should be applied to prevent the entrance of heart rot fungi. A paint should be

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PROBLEM OF THE ORCHARD

(Continued from Page 495.)

ment is usually followed during the late winter or early spring months by applications of more concentrated and more quickly available nitrogenous fertilizer.

The use of liberal quantities of suitable organic materials supplemented by reasonable amounts of quickly soluble nitrogenous fertilizers has given commercially successful results in improving old and neglected orchard soil and tree conditions in a large number of instances under our observation.

There are a number of striking illustrations of the recovery of an extensive acreage of decadent citrus trees in several districts in California during recent years. A study of the methods used in handling the soil problems in these orchards will be worth while for every interested citrus grower.

Resurfacing Orchard Soils

The trees in some of the older citrus orchards, particularly where the surface soil was scraped off in leveling the land for planting and irrigation, have been found to be unproductive, primarily as a result of the removal of the original surface soil. In some of these instances the experiment has been tried of hauling additional soil onto the scraped off areas and resurfacing them with several inches of fresh or virgin soil. The trees in the resurfaced areas have shown marked improvement both in foliage and fruit within a short period of time. In one case the increased yield of the trees in the resurfaced area the first year after this treatment was applied as compared with the production of the trees in a similar but untreated area was sufficient to pay the entire cost of resurfacing. The beneficial effect of resurfacing was not confined to the year following the treatment, but has continued to be apparent during eight subsequent years.

In the orchards under my observation where resurfacing is being carried on the fresh soil is hauled onto the orchard and spread between the trees to a depth of five to six inches. After resurfacing the orchard is plowed so as to mix the fresh with the older soil to some extent. Care is used not to pile the fresh dirt around the tree trunks or near them so as to avoid possible subsequent damage to the trees from this cause. Downhill hauls are arranged wherever possible in order to reduce the cost of moving the dirt. This work is best done when labor and ranch equipment are least engaged with regular orchard work.

Data are being collected in the East Highlands district as to the details of cost, amount of soil needed for resurfacing under different conditions and the value of improved tree production resulting from this treatment.

Conclusion

The maintenance of citrus orchards for long periods of time under California conditions in healthy condition of growth and profitable production is receiving the best thought and attention of many growers and highly trained specialists. There is adequate evidence at hand which shows that under favorable conditions citrus trees can often be maintained in satisfactory fruiting condition for more than 50 years. With accumulating knowledge and experience I believe the future will show greater possibilities along this line. In this connection information secured from studies of tree conditions in productive and healthy old citrus orchards, not only in California but in other citrus regions of the world as well, will certainly prove to be valuable.

The old orchards in which the trees now show evidence of decline require immediate attention. The problems in such orchards are usually many and no single factor can usually be held responsible for the unsatisfactory behavior of the trees. The condition of the soil, the kind of cultural treatment, the effect of previous frost or wind damage, the injuries from insect pests and fungus diseases, the inherent characteristics, condition of growth and other factors must receive careful study and consideration.

It has been demonstrated that decadent old citrus orchards can often be handled so as to renew their vegetative growth and bring about a recovery of normal production. Whether the expense and care will be justified by returns can only be decided after consideration of each orchard.

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PROBLEM OF CITRUS ORCHARD DECLINE

By C. B. Messenger Before State Fruit Growers Convention

WHILE I do not think our friends, the trees, have the attributes of humans which some enthusiastic tree lovers have ascribed to them, still there is a close enough parallel that I may change my subject for about 60 seconds, to "Problem of Folks' Decline."

The particular old folk, the victim for purpose of this illustration, finds himself with occasional uneasiness of joints and lacking in the color of skin which indicates superabundant health and youth. The orchardist would say: "He has chlorosis and is slightly bark-bound." As soon as the victim discovers his condition he rushes to his family doctor and gets a pill. Result nil. He seeks the specialist and is told "Turkish baths and massage will do the trick." Another specialist finds that the whole trouble has been caused by the "falling arch" or breaking down of the instep, which takes weeks to correct, with possibly no results to general health. The next rearranges the spinal column. The next finds poison in sacks at the roots of the teeth—he extracts them. The next takes the appendix. The next says "It's all due to eye-strain—a new pair of glasses—$50 please." And on forever or at least so long as any thing remains in the pocketbook to be extracted—then——! Old Man Common Sense comes along and points to a figure in stone, or is it bronze, a work by Rodin called "The Thinker."

"The Thinker" has a faculty of starting something, and our victim finds himself repeating: "Eat less—drink more (water)". "Burn less gas—more body wastes with vigorous exercise and prespiration". "Jazz less—sleep more". "Inhale deeply of pure air and California sunshine". By following these and other simple paths by pleasant brooks to the fountain of youth we are renewed like the eagle.

But the orchard, the old run-down orchard with yellow leaves, dead twigs, gum disease, scaly bark, scale on the bark, fruit, leaf and twig, no aphis, perhaps, for aphis like lush tender growth, but there is red spider, mealy bug; occasionally fruit—half sized, alleged fruit. The grower is dismayed—disheartened. He seeks a panacea, a cure-all. He wants it quick. It must work instantly for the mortgage is due. It must work cheaply for there are no funds to work with. He appeals to agricultural department folk, to the university, to horticultural commissioners, to farm advisers, to the farm paper, and there are heart aches for he has not yet appealed to "The Thinker", and help is impossible except through him.

But one day there comes promise of cure. Two bits worth of dope, an auger and a hole into the heart of the tree are to do the work and perform wonders. The dope is plugged into the hole and the orchardist sits down to see the miracle. The next specialist finds the tree bark-bound—slits through bark from branches to ground will renew the life and productivity, or perhaps the tree should be ringed or should have rusty nails driven into the trunk or should have the entire top removed that it may form a new head, or "earth salts", or smelling salts, or star dust should be spread about or incantations recited or sung.

Why smile! This is not comedy; it is tragedy, tragedy, because more common than most of you who attend this state convention anticipate.

This is not an arraignment of the vast majority of citrus orchardists, those who are supplying the great bulk of oranges, lemons and grapefruit which are required to fill the continuous procession of cars—only ten minutes apart for 365 days of every year, for those orchardists do not have bark-bound, yellow leaved, dead twigged, root bound, scale infested trees.

How do they do it?

Ask them, the next door neighbors, of the one who drives rusty nails in his trees, who if they would succeed must worship at the shrine of "The Thinker" and open their eyes to the procedure of others. And the great fundamental is successful soil building.

Building soil is not an overnight process. California's rich foothills have not had their fertility destroyed in a day nor a month nor in many years, but ultimately some have succumbed. They may be rebuilt? Surely! But after many days and by "The Thinker". It involves so many steps under such varying conditions that a volume is necessary—at least these few minutes would not start the subject.

But remember and don't expect to inject, or electrify, or dynamite, or apply in one dose the cure for all the ills of the soil and the orchard.

Of course there are ills above ground —frost, heat, bugs, birds, fungus, bacteria, pruning, rebudding, a thousand —or, at least a dozen—other angles of tree culture.

But, honestly, is there one here who has ever seen a run down orchard on soil kept in perfect tilth?

However, please bear in mind that the lesson I would convey is that the maintenance of the profitable commercial orchard calls for many interviews with "The Thinker". If one imagines that perfect tilth would give to the tree sufficient strength to overcome the ravages of insect and fungous pests then again he is mistaken. Perfect tilth adds to the resistance the tree may put up in face of fierce insect attacks, but the use of spray pump, of gas tent, and, sometimes, a bit of moral suasion on the part of horticultural commissioners, needed.

STATE FOREST WORK

By Charles H. Shinn

The movement towards better and better forest work by each state is gaining strength, and cooperation increases between the state and the national government in such matters as fire protection, and reforestation. Here are some items about state forest work:

Louisiana puts a tax of 12½ cents on every 1,000 feet of lumber sold in the state. This money is used in forestry. The Texas Forest Association is trying to get the same sort of a tax. The Oklahoma Forest Association asks for protection of the forests from fire, insects, etc.; for more county, city, state and national forests, and for fuller support of the forest policy of the United States.

In Pennsylvania the salary of the state forester (Gifford Pinchot) has been increased from $5,000 a year to $8,000. Recent reports show that this state, which once produced its own lumber supply and much more, now suffers a financial loss of $80,000,000 a year because of the destruction of her forests but has 6,000.000 acres of now unused and neglected land which might be again covered with good forests. The campaign is therefore to fully utilize this great area.

A wide awake announcement of one of the great lumber companies of Minnesota says that America uses lumber "for everything from matches to motor cars," and quotes the forester's recent remark that this country "contains manufacturing industries which use wood exceeding in volume of product and in variety all the rest of the world put together."

PLANTINGS OF THOMPSON SEEDLESS

There is much valuable information contained in the latest bulletin of the viticulture service of the state department of agriculture which should be known to every grower in California. It is interesting to know that in 1920 the planting of Thompson Seedless grapes increased over 80 per cent. The total acreage of Thompson Seedless in 1919 was 78,827. Plantings from 1919 to 1921 inclusive were 63,200 acres.

It is estimated that an average crop of Thompson Seedless grapes is one ton per acre. At this rate, providing no more Thompson Seedless are planted, the Thompson raisin crop in 1924 should be 142,027 tons. Compared to the raisin crop of last two years this would be just 28,000 less than the total tonnage of all varieties of raisins raised in 1920. In other words, if no further plantings of grapes are made, the raisin grape acreage in 1924 should produce a crop in excess of 350,000 tons or more than double the 1920 crop.

RAISIN IMPORTATIONS

Ten times as many raisins were shipped into the United States from foreign countries during the 1920-21 season as in any year previous. The high prices paid for raisins in America and the exchange rates made the business so profitable to foreign merchants that stocks which had been purchased for their own consumers were never unloaded but reshipped direct to the United States. The tabulation of the countries from which raisins were imported to the United States during 1920 shows heavy exports from 13 countries which never raised a grape.

ARSENICAL SPRAY ON PEARS

As evidence of the splendid campaign of education conducted by Fred C. Brosius, horticultural commissioner of Sacramento County, in conjunction with the state department of agriculture, there has been no clash with eastern health authorities over the excess of arsenical residue on pears shipped from Sacramento County during the pear season which has just closed.

In his report to the board of supervisors, Mr. Brosius states: "The great bulk of our work has been fresh fruit inspection as this period is the load of our shipments east. Our work was increased considerably, owing to the fact that a close inspection was necessary to prevent shipments of pears covered with spray residue, the fruit in many orchards being required to be wiped before being packed.

NUMBER OF PEAR AND PRUNE TREES ON COAST

There are 866,634 pear trees of bearing age in Washington, 727,444 in Oregon, 2,305,656 in California, an increase of about 100 per cent in ten years, and of prunes of bearing age, 875,363 in Washington, 2,999,480 in Oregon and 9,768,436 in California. These figures include all varieties of plums and prunes. The three coast states have far more than half of all the bearing trees of these species in the United States.

KUDZU VINE

The Kudzu vine (which Japanese say should be "kuzu") is sparingly grown for fodder in California. Dr. M. Calvino of the Cuban agricultural station writes:

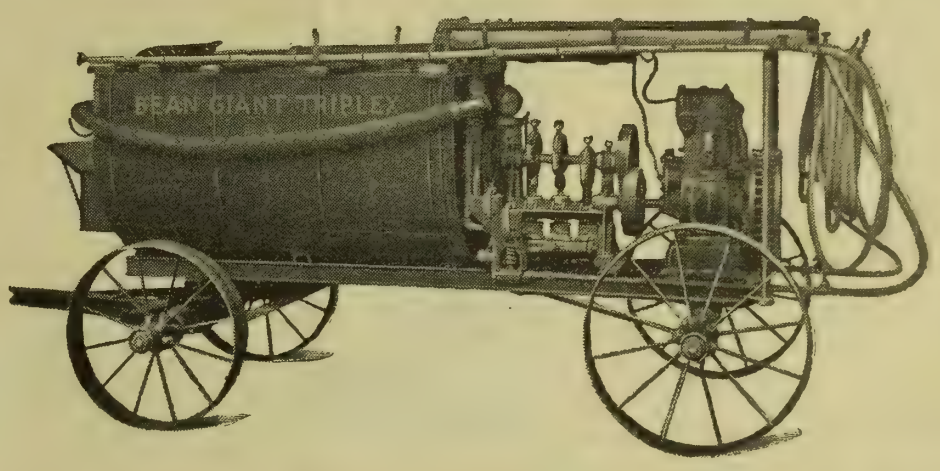
"Pueraria hirsuta, a climbing leguminous plant, native of China and Japan, has been suggested as a perfect fodder for the warm southern parts of the United States. In Florida it has been reported as the only plant which can take the place of the 'velvet bean' (Stizolobium) for fodder and green manure.

"The author has experimented with it since 1913 in the high central plateau of Mexico where the aerial parts of the plant dry up in winter but the fleshy roots in spring throw up vigorous shoots which develop into fine stems covered with much foliage, the leaves attaining a length of 12 to 18 mm. For harvesting it is sufficient to let it dry in the sun for 24 to 48 hours. The plant is propagated by seed or by root cuttings.

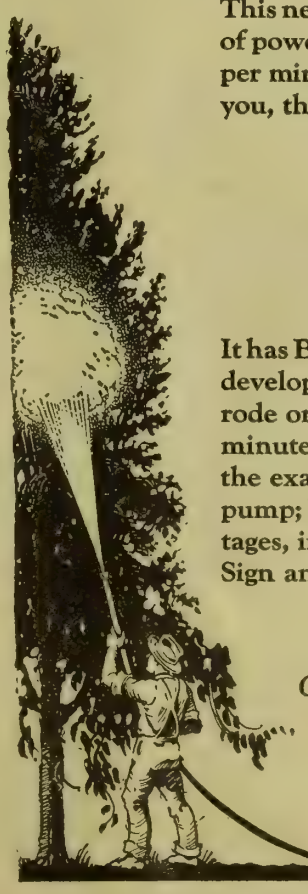
"At the Cuba agronomic station, Pueraria hirsuta has been found to grow vigorously, so much so that it covers and smothers all other vegetation, even when arborescent (banana) and produces abundantly seed of high germinating power (100 per cent). Regarding the seeds and pods the following data are known—average weight of 100 seeds 18.25 grams, average number of seeds per pod, eight. Hay made from this plant is very rich in albuminoids; the analysis of a sample from Florida gave—albuminoids 17.4 per cent and carbohydrates 30.2 per cent (as against 16 per cent and 31 per cent respectively for hay made of alfalfa. It can be fed to all kinds of animals and does not upset them. Powdered and mixed with water it can be given to poultry."

The smallest farm can afford, and should have, an engine for grinding feed, sawing wood, pumping and similar work. There are combined outfits built especially for general all around use.

During wet seasons a small engine attached to harvester for operating cutter bar helps amazingly.



A Sprayer Many Growers Have Long Wanted



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It has Bean porcelain-lined cylinders, the most satisfactory cylinders ever developed for a sprayer pump; threadless ball valves, which cannot corrode or stick tight and which can be opened up entirely in less than two minutes; Bean patented pressure regulator, which holds the pressure to the exact point desired, and saves much wear and tear on engine and pump; long-wearing eccentrics instead of cranks; and many other advantages, including the absence of stuffing boxes and stuffing box troubles. Sign and send the coupon, which describes entire Bean line for 1922.

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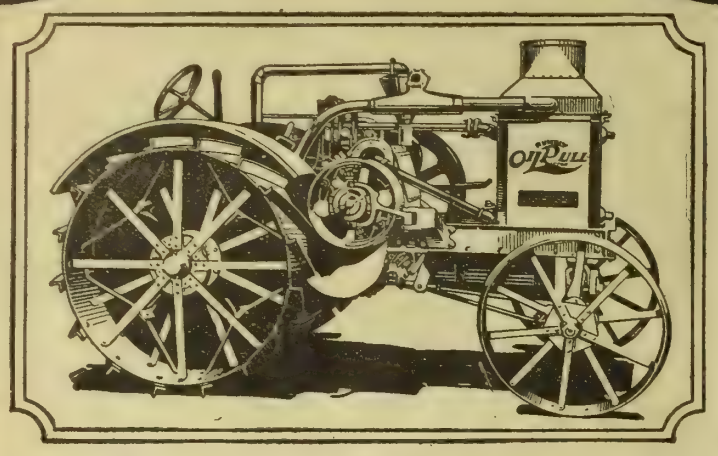

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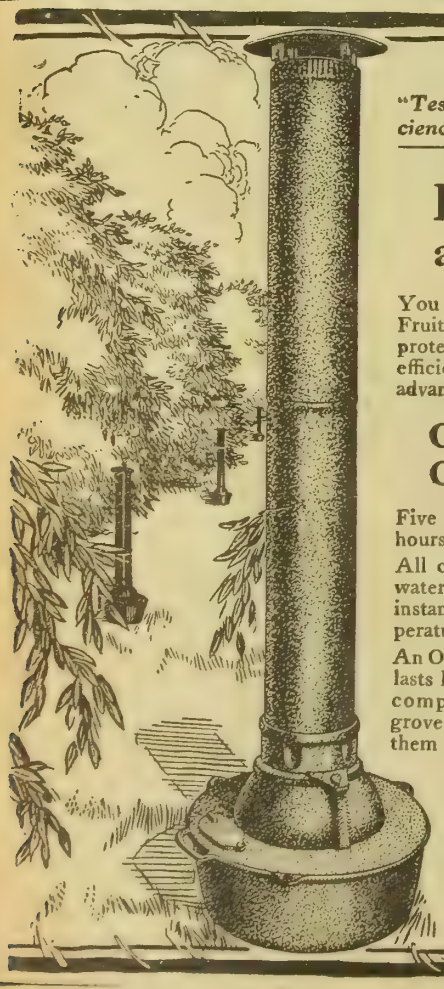

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When Writing Advertisers Mention California Cultivator

A RATIONAL SYSTEM OF PRUNING WALNUT TREES

(Continued from Page 497)

used that will contract and expand with varying climatic conditions. Those with an asphaltum base are very satisfactory and cheap. White lead is not satisfactory for the wood dries out and cracks. White lead and linseed oil together have been used by some with success, but it is not so satisfactory as paints with an asphaltum base. A good practice is to attach a brush to a bamboo pole or some other light material and reach as many of the cuts as possible from the ground. Carrying a pot of paint up into the tree wastes much time.

Improvement of Close Planted Trees

Many groves have been planted so close together that the branches of one tree grow against those of its neighbor. This is usually the case where the planting is 40 by 40, but it sometimes occurs where the trees have been planted 50 by 50, especially on rich, deep soils. It is practically impossible to prune each tree in such cases so that it will function in the best possible way, the trees are so close together that the lower branches are shaded even though they have been pruned. A remedy for such a condition is to take out every other tree in every other row. A number of walnut growers have tried this and have found production greatly increased. It gives each tree light on all four sides. Of course it is necessary to thin out the branches of trees left.

Pruning Young Trees

Much of the poor condition of walnut trees in old groves today can be prevented in new groves if proper attention is paid to pruning from the beginning. It is a common thing to hear walnut growers say that it is wrong to prune a walnut tree while it is young. Whether they are right or not depends upon their definition of pruning. It is true the heavy cutting is enervating or devitalizing, but it is just as true that the tree can be trained properly by moderate pruning.

In planting a walnut tree a hole should be dug at least three feet wide and deep enough so that the roots will be as deep as in the nursery. At the same time the tree is put in position place an eight foot stake next to the tree. Surface soil is thrown into the soil to give the tree a good start. The tree as it comes from the nursery is usually five to six feet high. The trunk should be cut back to a height of 15 to 20 inches from the ground, and then whitewashed to prevent sunburn and keep its temperature more uniform. The following spring there will be several shoots start and one of these should be selected for the main trunk of the tree. The others should be pulled off while young and succulent. The one shoot left grows rapidly, and in order to keep it straight and prevent it breaking down it should be tied to the stake as it grows. If it has grown to a height of several feet the first year it may be cut off at about six feet and then whitewashed. If it has not grown that much it is left alone to continue its terminal growth, except that it should be whitewashed. In the former case several branches will start along the limb. From three to four of these should be selected as the main limbs of the tree. It is important to so space the limbs that there will never be danger of them growing against each other and becoming weak. The remaining branches should be tipped slightly to check their growth and give the main limbs the ascendancy. They should not be cut off completely for it is highly desirable to have as much foliage as possible early in the season. That is because the tree depends upon its foliage for its greatest food supply.

The main limbs should never be cut back, but allowed to grow naturally. It is sometimes thought by growers that in order to make a walnut tree stocky from the start the limbs should be cut back at from 12 to 15 inches. What really happens is that rapid growing shoots are produced which are weak in character.

Limbs will be far stronger if not cut back. If cross branches and limbs which have a tendency to fill the center are taken out while the tree is young much of the heavy cutting can be avoided before it becomes old. If such limbs and branches are removed from year to year the tree can be kept open to keep it in a healthy condition.

Summary

Penetration of sunlight to all parts of the tree is the most important factor to consider for pruning walnuts. A removal of a few limbs and branches will allow the penetration of sunlight.

The use of the axe as a pruning tool should be discontinued. Use a saw and make clean cuts close up.

Start the tree right by getting three or four well spaced main limbs which are never to be cut back. Cut out cross branches, limbs taking up the center and lower branches interfering with cultural practices.

Paint all wounds with asphaltum paint to prevent the entrance of heart rot fungi and insects. Heart rot fungi have ruined many orchards.

Weather Preparedness

By Dr. Ford A. Carpenter

NEWSPAPER files show that every autumn as regularly as the year rolls around there is printed and given wide circulation through the various news agencies some story as to what the weather is going to be for the coming winter. As truly as "Hope springs eternal in the human breast" so does a craving exist for some indication of the winter's weather; whether it is to be cold or warm, wet or dry. Perhaps, some day, when meteorology becomes an exact science and we know the underlying principles of weather control over a long period of months, it will be possible to scientifically prepare a seasonal forecast. But at the outset let us state that although meteorologists have made long strides in the unearthing of weather secrets they have not found a reliable way of telling what the next season is to be.

If the reader will recollect the phraseology of seasonal forecasts he will find that they all fall into one class of prophecies—calamities. It is far easier to remember a disaster than a long period without a disaster. A cold winter or a dry winter deeply impresses itself upon one's mind. We instinctively think back upon some paragraph in a forgotten newspaper that told us that the winter was to be severe, whereas we would forget a forecast of a mild or crop making winter.

There are two popular ways of presenting seasonal weather predictions: First, by compiling an extended series of observations and finding a fancied recurrence. Second, by noting the habits of birds and animals in the autumn and deducting from their behavior their supposed preknowledge of weather conditions. Both of these methods fail to measure up to the needful 51 per cent of verification.

For over a hundred years weather cycles have been prepared by students, and ardent advocates of an 11 year cycle, 32 year cycle, etc., point with pride to the infallibility of their system. If upon examination of their data is found an absence of agreement such will be explained away by the remark: "Oh, we have to make some allowance." To prove to our own satisfaction that rain cycles, for example, do not exist in California it is only necessary to look over a 50 year or a 70 year rainfall table. Only by making unscientific allowances is it possible to let one's prejudices rule.

It is the squirrels who are reported to have stored up unusual quantities of food, the prairie dogs likewise hoarding up supplies that show to some minds that the winter is to be unusually severe. The real explanation, however, may be that the animals are acting in response to the existing weather conditions. If the season is early, i. e., cool months during the late

summer, animals will be observed busily storing up food, and the quantity will be found to bear a direct ratio to the abnormal existing weather.

The real preparedness for coming seasonal weather, whether it may be wet or dry, hot or cold, is in making provision for the extremes. It is the farmer who does his regular fall and winter plowing at the appointed time by the calender that will be ready for the rains when they come. It is the thoughtful fruit grower who within the next few weeks takes an inventory of his oil pots, storage tanks and thermometers that will be ready for the autumn and winter frosts. The fruit grower this season will use his experience of last year and check up his temperature indicators, those invaluable adjuncts to fruit protection. If in the past he has not availed himself of the opportunity offered to have his thermometers tested he will see to it that the Thanksgiving frosts do not find him unprepared.

Spring Management of Bees

By H. Perkins

SPRING management rightly begins in the fall when bees are preparing for winter. The beekeeper should see that each hive contains at least 30 pounds of honey for winter stores. No very weak or diseased colonies should be allowed to winter. Each one should have a good queen. These precautions will as a rule simplify the work in the springtime.

The spring season begins in Southern California with the willow and eucalyptus bloom usually about the middle of January. In the more elevated sections where neither are to be had it will be about a month later. Bees must have a supply of fresh pollen in order to commence breeding to any extent. When you see the workers coming in loaded down with pollen you may look for spring brood rearing to be nicely under way in a few weeks. It is of little use to open the hive or attempt any manipulation until spring brood rearing has advanced for, say, three weeks. Then a thorough inspection should be made. Some colonies perhaps will be found to have no brood at all when the others have several combs partly filled. This is evidence of queenlessness in most cases or else of a failing queen. In either case it is impractical to assist them by drawing brood from another hive. A better plan is to unite what remains of the colony with the one nearest to it. A good way to unite is to place the combs and bees of the queenless one in a super. Now spread a newspaper on top of the frames of the hive with which it is to be united. Make a few small holes through the paper, then set the super, combs, bees and all on the paper and put on the cover. The bees will gradually filter down through the paper and take up life in the new home without creating any disturbance. Always be sure that both colonies are free from disease before uniting. If you are not already posted send to the department of agriculture at Washington, D. C., for publications on bee diseases.

It is important at this time to see that all colonies have at least 20 pounds of honey, for bees will not increase rapidly when their honey supplies are low. It is not a safe plan to feed sugar syrup too early in the spring because the nights are cold and there are no young bees in the hive. When old bees are fed cold syrup they are very apt to contract dysentery and die.

A better plan is to borrow a comb or two of honey from another hive to reenforce the one that is light. Bees will winter better and increase faster in a single than in a two story hive.

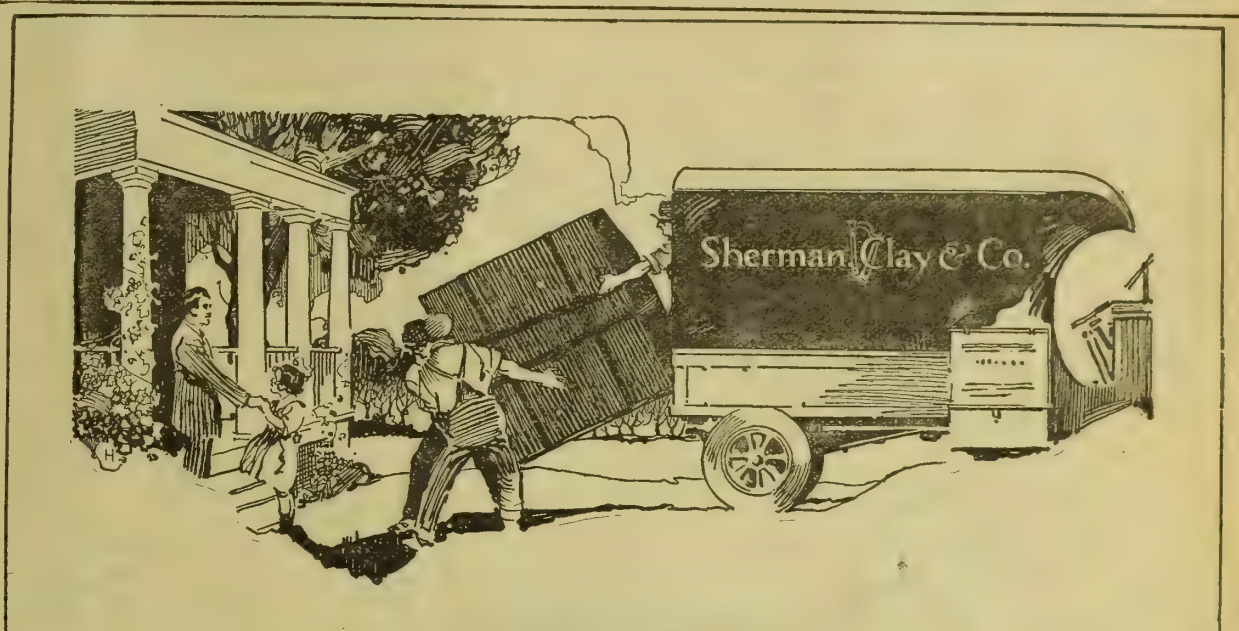
There are various systems of manipulating the brood combs, calculated to assist the bees in rapidly filling the brood chamber with brood, but in the writer's opinion they are of questionable value, at least in the hands of a novice. See that your colonies all have a good food supply, are free from disease and have good queens, then let them alone till they have increased sufficiently to occupy the entire brood chamber. Then they must have more room or they will swarm. The season will by that time have advanced to about the middle of March. Drones will be flying. It is then up to the beekeeper to adopt methods calculated to prevent swarming if he does not wish to increase the number of his colonies or else to divide if he desires more.

Now there are several ways of making increase. I am going to give my way of dividing a colony into two equal parts. About noon on a bright day when bees are flying freely is the proper time. I place about half the brood and one-third of the bees in the new hive, which is left on the original stand, while the parent hive containing the queen is moved to a new stand at least 20 yards away. The returning field bees will enter the new hive in sufficient numbers to bring it up to the same strength as the parent hive. Now our new colony is queenless, of course, but will raise a queen in three weeks if none is supplied. It is much better to buy one from a queen breeder, in which case division should not be attempted till the new queen arrives. She may be introduced at once and in three days time will be laying.

When no increase is desired an entirely different course must be followed, the object of which is to prevent swarming. The stronger the colony the more honey it will gather. In a general way this is accomplished by giving them plenty of room and plenty of work to do drawing foundation. As soon as the colony fully occupies the brood chamber put on a full depth super and if necessary later put on another. Move some of the brood combs into the super, replacing them with full sheets of foundation as soon as the bees are able to draw comb. This should be done before the colony has begun building queen cells preparatory to swarming. Once they have taken the notion to swarm it may be difficult to break it up. Of course all this requires some experience. The questions will arise: when is a colony crowded; when are they preparing to swarm; when will they draw foundation; and so on. A visit to the yard of a professional bee man will usually put you right. Where a yard consists of two or more colonies there is danger of getting robbing started if combs are exposed too long or hives left open for more than a few minutes where the honey flow is light. One of the first things the beginner should learn is to detect the presence of disease, for sooner or later he will have to encounter it.

PATCHOULI PATCHES

Years ago patchouli was somewhat grown in California, but of late years the supply seems to have waned. It is a mint, native to India, and grows with little care to three feet high. In its native country patchouli is the most common perfume. Botanically the plant is Pogostemon Heyneanus.



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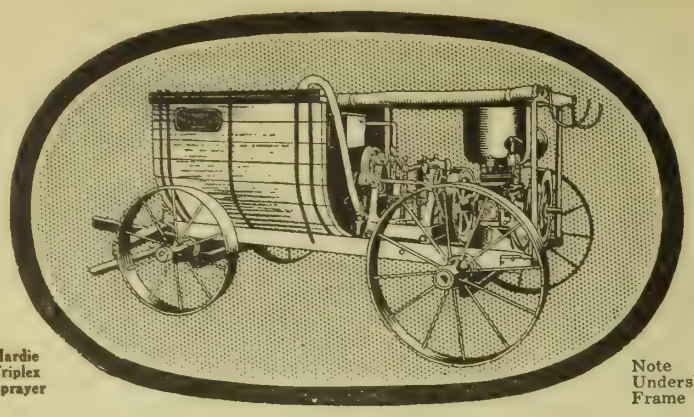

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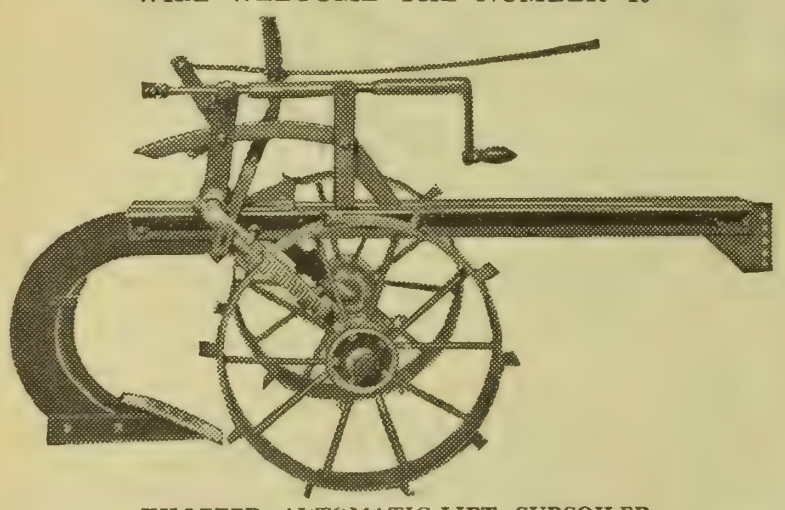

KILLEFER AUTOMATIC-LIFT SUBSOILER

built for owners of small tractors who have demanded a subsoiler with the well-known Killefer durability for hard service. It penetrates fifteen inches, is a real money maker for the user and sold at a popular price.

Write for descriptive literature, testimonials and name of nearest dealer.

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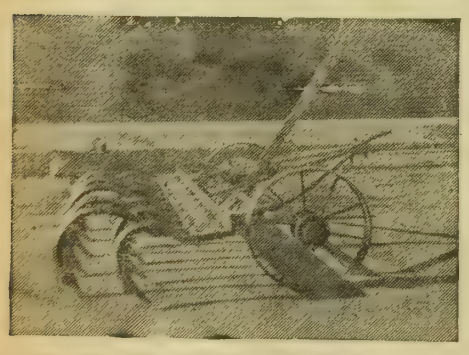
Hurley's Gooseneck Cultivator

The Best Furrowing and Leveling Machine on the Market—
Built for the Largest and Smallest Tractors



This is the lightest weight efficient Cultivator and Furrower on the market. Its construction of spring steel gives it a cross bar that yields to sudden strains and it springs back. Detach the shovels and wheels and you have the best leveler you can buy. Patented reinforced spring steel draw bar 5-in. x ½-in. with bar below 5-in. x ⅜-in. reinforced on two edges with angle iron. Shanks diamond shape 1⅛x1¼. Hitches for all tractors and horses. Made 6, 7 and 8 ft. 6 ft. only $115 with 9 shanks. Horse drawn cultivator has seat and front truck. Dealers will find this Cultivator in big demand. Some territory open. If your dealer cannot supply you write

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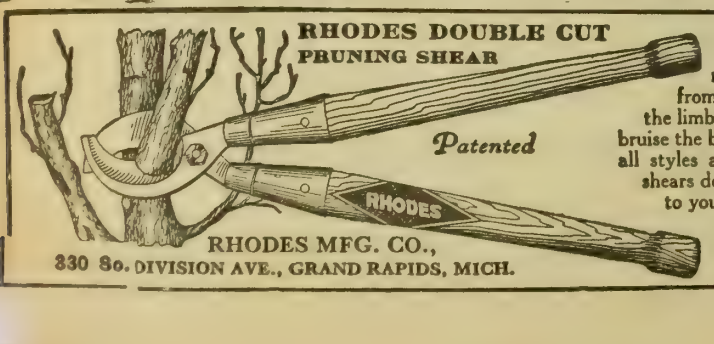

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. All shears delivered free to your door. Write for circular and prices.

RHODES MFG. CO.,
330 So. DIVISION AVE., GRAND RAPIDS, MICH.

Studying California Conditions

WE HAVE seen the statement that it takes between three and four years to put a new model of a truck, an automobile or a tractor on the market. In the first place, the manufacturer must investigate the highway or, in the case of a tractor, soil and cultural conditions which are to be met. There have been some bitter disappointments on the part of California tractor purchasers because of buying tractors proven entirely satisfactory in certain eastern sections but unable to stand the gaff in California. This has occurred in the case of thoroughly honest and dependable manufacturers, and when they have learned of the lack of complete success on the part of their product they have set about to learn our conditions and meet them with efficient equipment. Again, others have come here before entering the field and followed tractors at demonstrations and in every day orchard or farm work, and California and incidentally the manufacturer have benefited by these investigations.

Recently it was our pleasure to talk with R. C. Brewsaugh of the Allis-Chalmers Manufacturing Company. He was just in from a visit to Imperial Valley at a time when Imperial gave a fine exhibit of some of her best growing weather. Mr. Brewsaugh concluded that Imperial's conditions, both of soil and climate, called for equipment different from that of any other section he had seen in the East.

But besides Imperial many other sections of California had been investigated by him, and the one great lesson developed was that "Californians sure do plow deeply." To a pioneer who recalls the days of the big gangs turning over two or at most three inches of soil, today's depth of culture in California's deciduous and citrus orchards and, we may add, in many of the grain growing sections, is a revelation. The conditions which call for this deep culture demand a line of implements entirely different from those used on eastern farms.

Soil resistance in California is generally from 900 to 1,200 pounds per 12-inch plow as against an average of about 450 or 500 pounds in the wheat and corn belt, a fact emphasized by Mr. Brewsaugh. It requires power, lots of it, to farm properly in California, and it is a mistake for a farmer to purchase a tractor that does not have sufficient power to pull implements that get down and rip things us. Mr. Brewsaugh is one of five pioneer tractor men in the United States. He was a captain in the late war assigned to tractor production and is recognized as one of the best authorities in the United States on tractors and power farming.

Mr. Brewsaugh is connected with the home, or Milwaukee, office of the Allis-Chalmers people, and in securing first hand information has carried back with him ideas which will be worked out and result in other aids to California power farming.

The Small Farm for Retired Farmers

By M. E. Bemis

CAN a man make a living on ten acres? The usual and logical answer is "It depends upon the man." Likewise logically it depends upon the soil. Some farmers can't seem to settle down on ten acres. They feel cramped because they want to do big things on a big scale. Such men have no business to try to confine themselves to a small acreage. Then, too, there is the man without farm experience, and that kind is apt to pay dear for his inexperience, and on a small acreage this holds more true than on a large acreage.

I know of men who are specializing on some one or two crops or with poultry, truck crops or fruit, who are doing well on ten acres or less. This is entirely practical for the specialist, and such men often do better than many of the big farmers on a much larger acreage.

The ten acre farm, except for the specialist, appeals most, I think, to the farmer who has made his stake, big or little, and is only concerned in keeping his capital, or in other words, in making a living, free from the strenuous life of the big farm. He doesn't want to be worried with hired help and neither does he want to be tied down to the tasks of the specialist. The farmer who has led an active life is no more contented to settle down and do nothing than is the banker or merchant who has been successful. He wants to stay in the harness only he would like that the harness be not too heavy.

Quite often he has some pet scheme that he wants to try out, some new crop that he wants to raise. He wants to plant a garden, keep a few chickens, maybe of some breed that he has always fancied but which he has never had an opportunity to breed. To this class of farmers, more

Small Farm Home in Arizona

Upper photo: Home of E. F. Van Kirk in Salt River Valley. Lower: Edge of the little field of Mexican June corn on the Van Kirk farm.

I believe than any other, the ten acre farm appeals.

E. F. Van Kirk has not retired, although he has arrived at that stage in life when one is privileged to retire if he feels like it and wants to and can afford it. In other words, he is a grandfather, and any grandfather may be excused for slowing up a little if, as I have just said, he wants to and can afford to. Van Kirk doesn't want to retire. Mrs. Van Kirk isn't ready to quit either, so there are two perfectly good reasons why they are not going to gather any moss. They are just deciding to take things a wee bit easier maybe and live so as to get some of the enjoyment out of life. Van Kirk is one of the Old Timers, 33 years I think in Arizona. A good share of that time he has been a dairyman. Like many others he made his stake with the primitive dairy methods in vogue here 20 to 30 years ago. He has stuck pretty consistently, breeding draft horses, selling cotton seed products to brother dairymen, raising some cotton, but always with an affection for the old cow that will not down.

Now the greater part of his farm is rented. But on the home place out on North Central Avenue, near the Grand Canal, Phoenix, this miniature farm is being made to respond to the magic touch of a master farmer. Van Kirk says, "There is just as much work on a ten acre farm as on a quarter section." In a way he didn't mean just that, but what he did mean was that the different crops, if one grows them, require just about as many operations as on a larger farm.

Here on his ten acre playground he is raising corn, Sudan grass, millet, alfalfa, melons, grain sorghums and a garden. Cows, pigs, chickens and horses are kept. Of course, there is work and hard work, but because he is having now a chance to do some of the many things that all these years he has wanted to do there is more enjoyment to be had from the work and consequently less fatigue.

Now besides the enjoyment the Van Kirks are getting no small amount of revenue. The 200 laying hens pay, in addition to their own feed, the grocery bill and the few incidentals that are usually counted as a part of the living expenses. The three cows furnish all the milk and cream needed, a little is sold as sweet milk to a neighbor, and the cream is sold to a creamery, bringing an average of $25 a month. There is some revenue from the hogs, but the chief returns at present are from what might be termed truck crops. A good deal of corn is sold as roasting ears, bringing a good price. A garden furnishes tomatoes, squashes, etc., the total sales of which bring a good amount.

Meanwhile the forage is accumulating. The acre of millet made three tons of hay. The acre and a half of Sudan has been cut twice, yielding better than two tons to the acre for each cutting and two cuttings more this season. The grain sorghum will make considerable forage besides grain for the chickens.

More cows will be kept this coming year and possibly more chickens.

As I have said at the beginning, general farming on a ten acre ranch would not especially appeal to a young man with an ambition to get rich quick, but for the farmer that has reached a time of life when he feels that he wants to let up a bit, who still has a great deal of "kick," and wants to do as he pleases, this ten acre farm of E. F. Van Kirk's has convinced me that for men like him, ("and may their tribe increase") the small place close to town is a glorious way for a farmer to "retire."

"The European and foreign sales of Washington apples in 1921 are twice the volume of last year," says Frank Harkness of the Earl Fruit Company.

"We find that the apple most in demand by the European trade is the Yellow Newtown, and they apparently prefer the small sizes because there are more of them to the box. We are having no difficulty in arranging the financial needs although the exchange rate is somewhat of a handicap."

Mr. Harkness adds that the West will always have the European trade if proper care is exercised in handling the fruit, for the Western apple pack is a standardized product of higher quality than is shipped by the apple growing sections of the eastern states.

CONSERVATION OF MOISTURE

(Continued from Cover Page.)

particularly in heavy soils, open up and admit air to the lower depths.

Keep plenty of "yeast" or humus, or vegetable mold, or whatever you choose to call it, but keep right conditions for bacterial action.

Tight soils hinder travel of moisture to the roots.

Regarding necessity of deep plowing Prof. Lipman in Circular 98 of the Experiment Station of the University of California in calling attention to the objects of plowing and cultivating and the necessity for a supply of soil air says:

"Careful observation and experiment have amply shown that plant roots must have air to develop successfully. They have also shown air to be essential for the life of all of the beneficial soil bacteria upon which we depend for the solution of plant food in the soil and for the addition of nitrogen from the air. In other words the most vital factors in successful plant growth are dependent on a good supply of air in the soil. Such a supply of air can best be furnished and maintained through plowing and cultivating. Besides accomplishing the objects above named, tillage operations are important because they make possible the turning under for humus formation of organic manures and for turning under other forms of organic matter and other fertilizers. They keep down weeds, they make a larger reservoir for water, and they prevent evaporation of water from soils."

In addition Prof. Lipman summarizes his bulletin with:

"1. Proper plowing and cultivating are essential factors in successful soil management. Reasons are given above.

"2. Deep plowing is a prime necessity in California soils. Eight to ten inches in depth is right for ordinary crops. Fourteen to 16 inches in preparing land for alfalfa. Details given above.

"3. The plow depth must be varied slightly every year to help prevent plow sole formation.

POINTERS ON FIG PRUNING

Writing in the Fig and Olive Journal, I. J. Condit says:

"The pruning of fig trees depends upon the variety and the method of harvesting the crop.

"Trees grown for fresh fig production, such as the Kadota, are headed low by heavy annual cutting back.

"Trees grown for dried fruit are headed at about 16 inches and from three to five main branches selected for the framework of the tree.

"Most fig trees bear two crops, the first crop on the old wood, the second or main crop on the new wood of the present season's growth.

"Young Calimyrna and Kadota trees have a tendency to produce long, upright branches without laterals. Heading back early in the growing season or during the winter induces branching and prevents the branches from becoming too heavy.

"Adriatic and Mission trees naturally produce laterals on the main branches. Cutting away low lying and interfering branches constitutes the principal pruning of these varieties.

"Low headed trees are as a rule most vigorous. Long exposed trunks are very subject to sunburn and should be avoided.

"Summer pruning seems to be advisable with Calimyrna trees early in the season to induce branching, and with other varieties simply to remove useless branches and suckers from the base.

"The pruning of bearing trees consists in thinning out old wood to encourage new growth, in cutting back long branches to induce laterals, and in removing branches which interfere with cultivation.

"Caprifig trees are pruned simply for shaping and for economical harvesting of the crop."

A man who deliberately walks into a buzz-saw is crazy, but a lot of them walk into matrimony in the same spirit.

Samantha says: "It's better to make one friend than a hundred remarks clever enough, and cutting enough, to go over the whole country.

Don't kick about your job. Somebody would be glad to have it.

Headquarters for

FRUIT TREES

Our trees are grown under most favorable conditions in the choicest spots in California

New Price List of Fruit Trees and Ornamentals ready for mailing.

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"THE RETURN TO NORMALCY" Is Accomplished

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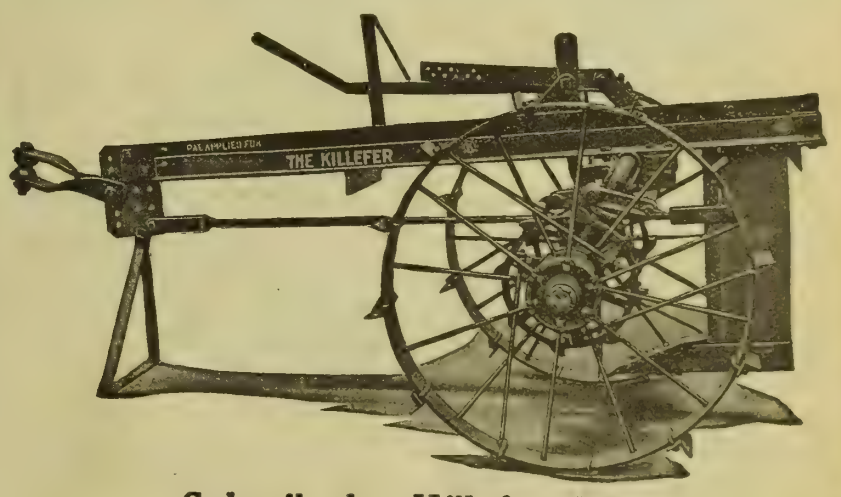
The time for "watchful waiting" is past. We have anticipated the drop in prices and disposed of all stock bought at the high war time prices.

During the readjustment period we have been able to buy at surprisingly low prices our supply of Quality Implements of National reputation as the list in the panel of this advertisement will show. They are all Leaders of high grade Implements.

Due to general improvement in the material and manufacturing markets we are now selling these Quality implements backed by Railsback service at Prices as low as Eight years ago.



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You can increase your crops from 25% to 100% whether Orchard, Field, grain or any crop—if you subsoil the Killefer way. R. E. Wildre, Supt. of Consolidated Orchards Co., Visalia, increased 108%. We can tell you his experience and many others—Come in, let's talk it over.

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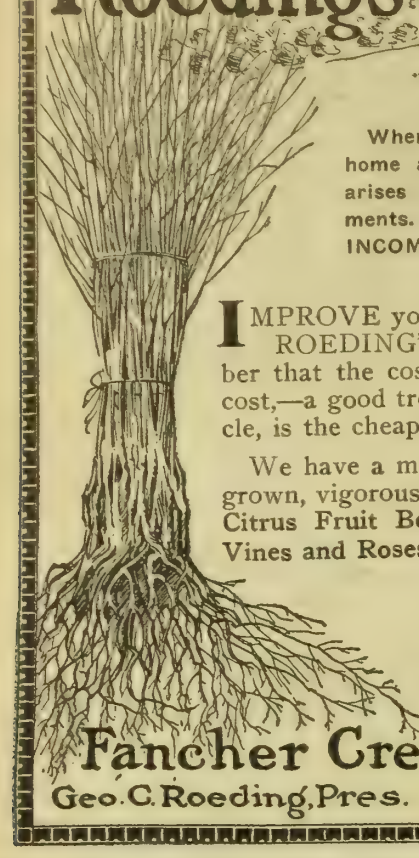
Roedings True Trees



When anyone is looking for a ranch home almost the first question that arises is the nature of the improvements. A place with a good ORCHARD INCOME is certain to sell first.

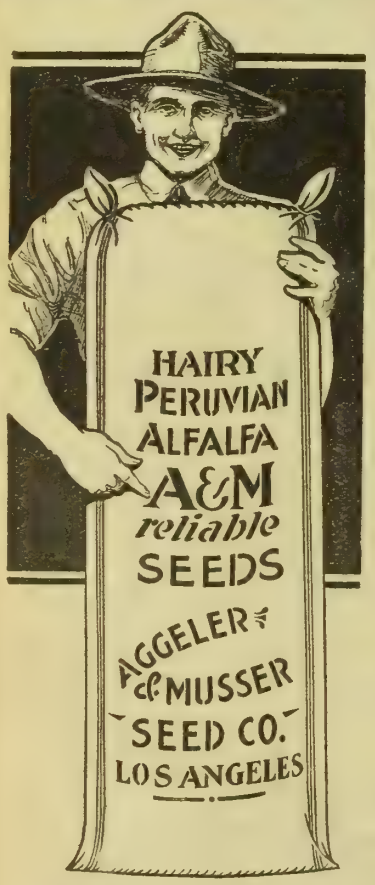
IMPROVE your vacant land by planting ROEDING'S TRUE TREES. Remember that the cost of a tree is not the only cost,—a good tree, like any other good article, is the cheapest in the long run.

We have a magnificent stock of properly grown, vigorous, well rooted Deciduous and Citrus Fruit Bearing Trees, Ornamentals, Vines and Roses.

Let us have your name and address and we will mail you new price list when printed.

Fancher Creek Nurseries

Geo. C. Roeding, Pres. Fresno, Calif.



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Before buying your Alfalfa seed, ask any neighbors who have used

A & M Hairy Peruvian Alfalfa Seed

They'll tell you it's pure, satisfactory and gives maximum results.

A. & M. Hairy Peruvian Alfalfa seed, backed by our 28 years' experience in growing reliable seeds, is of bright color, better than 99½% pure, and of highest germination.

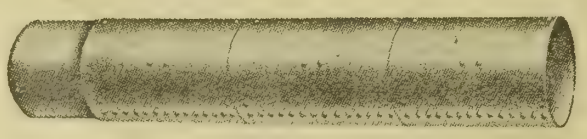
Get your Alfalfa seed from a reliable source.

Ask Your Local Dealer

Aggeler & Musser Seed Co.

620 So. Spring Street

Los Angeles California



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Most Birds Are Beneficial

The sparrow is a beneficial bird, says the biological survey, and should not be regarded as a pest. The single exception to the department's endorsement is the pesky English sparrow of that species, "usually a nuisance and often injurious," says the department in a booklet, Farm Help from the Birds. "It must be remembered that the introduced English sparrow is but one member of the large family of sparrows and its habits are by no means characteristic of the native species."

They are essentially seed eaters, the sparrows, but they consume also a fair proportion of insects, and in general must be regarded as beneficial. Separating the sheep from the goats in the feathered kingdom of common knowledge to the farmer, the department places among the bad birds the jays, crows, ravens, and blackbirds, a corporal's guard compared with the army of good birds, of aid to the farmer, placed in the other classification. Even the bad denizens of the air have some good in them, and the damage they do the farmer is largely because of over-population in the feathered ranks. Of that class the department says:

"It would seem a good policy to accord them the same treatment long given the common crow. The crow is not specially persecuted, neither is it protected. About the best that can be said of birds of this family is that on the average they do about as much good as harm.

"Owls as a group have long been persecuted by man but never has persecution been more unjust," says the biological survey. More than 50 varieties feed on a great variety of rodents and have useful habits. In Washington, D. C., the survey recently determined what 675 barn owls had for dinner. Here is the menu, by variety and number of dishes consumed:

Meadow mice, 1,119; house mice, 452; house rats, 134; other small mammals, 3 per owl. And the service done man by the barn owl is typical of that performed by hawks and owls in general. An occasional chicken is consumed, but this loss is far outweighed by the destruction of harmful rodents.

Sudan Wins a Place

Ten years after its introduction to the United States from Khartum, Africa, Sudan grass was being successfully grown in nearly all parts of the United States. It does not serve well either as a money crop or a soil improver, hence it may never find a permanent place in regular crop rotations. It has, nevertheless, a very important place in the farmer's second line of defense as a catch crop which can be planted to give satisfactory returns when conditions have brought failure to other hay crops. This is the verdict pronounced by the United States department of agriculture in Farmer's Bulletin 1126 recently issued.

Sudan grass is replacing millet as the premier catch crop in many localities because of its ability to produce a fair yield and a high quality of hay under conditions of low rainfall, its rather short growing season and its ability to thrive on a wide range of soil types. Large yields of Sudan grass are obtained only on good soils but the grass fails completely only on cold, poorly drained land.

Sudan grass produces heavily. In California under irrigation it has made yields of 9.8 tons of field cured hay an acre when alfalfa produced but 8.3 tons under like conditions.

Although Sudan grass is best adapted by nature to use as a hay crop it is also used with great success as a soiling and pasture crop for summer pastures. Its use as a silage material is limited by the fact that it is easily made into hay and fed as such with very little waste and also because corn and sorghum both outyield it and are generally available throughout the region where Sudan grass is grown.

In the semi-arid districts the highest yields are obtained when the grass is sown in rows so as to allow of cultivation. The advantage in yield of the row over the drilled seedings is so small, however, that most farmers prefer to avoid the necessity of cultivation by drilling or broadcasting the seed. A common grain drill handles well cleaned Sudan grass seed without trouble and the hay from drilled seedings is finer stemmed and matures more evenly than row plantings.

The feeding value of Sudan grass is equal to timothy hay. In localities where soy beans or cowpeas do well these legumes may be grown in mixtures with the Sudan grass. Such a mixture produces a hay of higher feeding value than the grass alone because of the high protein content of the legumes.

Sudan grass hybridizes freely with the sorghums. It is necessary, therefore, if pure seed is produced to have the Sudan grass field at some distance from any sorghums, otherwise it will result in a mongrel crop the following year.

Foreign Crop Prospects

The preparation of the soil and the seeding of winter grains has continued to make rapid progress throughout the northern hemisphere. The abundant moisture has greatly facilitated fall plowing and the seeding of winter wheat and rye in Canada. Conditions have generally been favorable for seeding in the United States and early sown fields of wheat and rye in the Northern and Central states are up to a good stand and vigorous growth reported. Rain is needed in some districts of the far Western states to insure proper germination. The present prospects indicate that the acreage for the country, as a whole, will be up to the average.

Recent rains have greatly facilitated plowing in France and Germany, although more rain is needed to insure sufficient moisture for germination. The present prospect indicates that an average or slightly above average acreage of fall grains will be sown in all western Europe. The monsoon is reported to have continued active in most of India, and in the Punjab region the recent rains have greatly improved conditions. Crops are generally good and the present outlook indicates that a large acreage of wheat and other grain will be sown.

Abundant rainfall has recently occurred over the entire grain producing section of Argentina and will greatly benefit crop prospects.

The outlook for next season's crops is very promising in British South Africa because of ample rains well distributed over the country. If the present promising conditions continue the production may exceed the harvest of any recent years. Corn is looking exceptionally well. Wheat was sown under very favorable conditions and the area for the coming season is 839,000 acres compared with 823,000 acres in 1920-21.

Rain has been abundant throughout Australia and prospects continue good to excellent. The area sown with wheat for 1921-22 is approximately 9,445,000 acres compared with 9,082,000 acres in 1920-21, an increase of 4 per cent, but 2 per cent below the average of the previous 5 years.

Thrashing of this season's crop has been delayed in the prairie provinces of Canada by heavy rains and snow but damage to crops has been minimized by the cool dry weather which followed. Rainy weather has also interfered with thrashing in some sections of Great Britain, especially in Scotland. Weather conditions have been favorable for thrashing in most of western Europe, and recent returns

of the yield confirm earlier favorable estimates for winter cereals, which equal or exceed those of last year. The yield of spring sown grains is only fair and the quality variable, though occasional good yields are reported. The hot, dry weather up to mid-August has injured the corn crop in all of western and central Europe and a poor yield is reported.

The first cotton forecast for India (which covers 79 per cent of the total area but does not embrace late plantings as these had not yet commenced) states that the present condition of the crop is generally good.

The cotton crop in Egypt is generally backward because of an unfavorable growing season and damage from the pink bollworm. The average yield per acre will be below normal and the quality variable.

A special report from the Chinese Cotton Mill Owners' Association at Shanghai gives the area of cotton in that country in 1920 as 4,300,000 acres and in 1919 as 4,751,000 acres. The production in 1920 is estimated as equivalent to 1,868,000 American bales of 500 pounds gross weight.

The potato and root crops, including sugar beets of Western Europe, have been damaged by the long summer drouth and the yield in general is only fair as the recent rains came too late to be of any material benefit. The fruit crop in Great Britain is generally below normal. The yield of grapes in France, including Alsace-Lorraine, Hungary, and Italy, is up to the average and the quality god. The condition of the olive crop in Spain and France is very good, but the condition of the crop in Italy has deteriorated because of the great heat in August.

STRAWBERRY ROOT WEEVIL ERADICATION

T. D. Urbahns of the state department of agriculture reports present indications good for successful eradication of the strawberry root weevil in the Alameda County berry field in which it was discovered. This being the only known infestation in California, it is very important this pest be eradicated. It is one of the most destructive strawberry pests known in the United States.

The infested area was roughly broken up and exposed to the sun in August while the weevils were in the early larval stage. Every care was taken to destroy all the plants. Favorable weather conditions followed and the soil is now so dry and hard that there is no indication of either plant or weevil to be found. Two small areas of young berry plants at the edge of the center of infestation are being kept to act as a trap crop to attract any adults which might chance to make their appearance next spring. This area will in turn be destroyed next summer at the proper time to catch weevils which might appear.

LAWN GRUBS

Investigations conducted at the New Jersey experiment station with carbon disulphid have shown that the maximum dosage for ordinary lawn and golf green grasses lies somewhere between 1 and 5 ounces per square foot and considerably above the former, while the minimum dosage for the white grub is about 1 ounce. Temperature is shown to exert a decided influence on the minimum dosage for the white grub (1 ounce at 65 degrees Fahrenheit and less than 1 ounce being necessary at 85 degrees or above) and presumably also upon the maximum dosage for the plants. Effective work against the grub appears to require injections not much over 6 inches apart. The soil moisture must be medium (10 per cent) to wet (20 per cent) for good results in grub destruction. Wetting the surface of the soil in cases when the moisture is dry (5 per cent) to medium (10 per cent) seems to increase the effectiveness of the treatment. The charge should be placed several inches below the point where the grubs are working.

FLATTERING

A man's conceit is ne'er so pleased,
His egotism brimmin',
As when he is the object of
A row between two wimmen
—Tennyson J. Daft.

Where Weather strikes hardest—
The Roof!

The roof takes the brunt of all weather—rain, wind and hot sun. Keep your shingle roof in good condition—a neglected roof means the cost of a new roof soon.

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especially prepared for use on the farm.

Oronite Roof Paint

A high-quality protective coating for prepared roofing and metal roofs.

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Gives a durable, smooth lubricating film under every pulling condition. Keeps the axle cool; no hot-boxes, no gumming. The MICA makes it better.

Eureka Harness Oil

Preserves the original strength and life of leather and keeps it soft and pliable. Keeps harness "new looking."

Standard Hand Separator Oil

Correct Lubrication for your Hand Separator, under the conditions of high speed and close fitting parts.

ORONITE SHINGLE OIL
Preserves Shingles

Deterioration of shingles is caused by the penetration of moisture and air into the fibre of the shingles, hastening disintegration and decay. The natural oils in the wood evaporate and cracking and warping result. Your shingles need constant protection against the elements—rain, wind and sun.

Use Oronite Shingle Oil on all shingles either on roofs or on side walls. It is a high-quality preservative for shingles. It penetrates the shingle fibre and fills the pores with a moisture-resisting preservative. It retards evaporation of natural oils in the wood and counteracts the effect of age and exposure.

Oronite Shingle Oil is easy to use. It can be mixed with colors. Ask our nearest agent for formulas. Oronite Shingle Oil will make your shingle roof last longer and give better service to you.

STANDARD OIL COMPANY
(California)

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Citrus and Tropical

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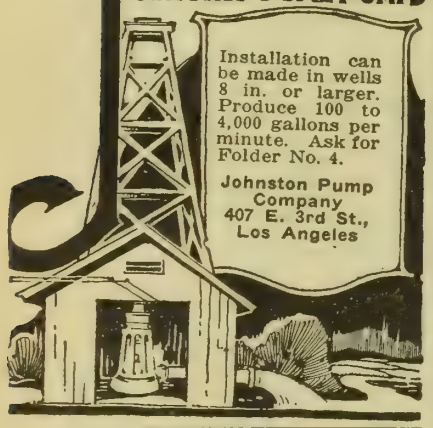

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Queries

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Does Eat Young

We have found half of the bodies of one or two baby rabbits in the pen and we think it is possible the does have eaten them. Can you tell me what causes them to do this and what the remedy is, if any? We have put raw meat into their pens thinking that the flesh was what they were craving but they will not eat it.—Subscriber, Puente.

Many does are too fat when bred. They should be a little lean, then when bred and well fed they put it into the young and not into their own flesh. Feed roots, leaves, barks and weeds while carrying the young as well as grain and hay. They will then have sufficient of mineral salts for the production of their young and also as a tonic for themselves. At time of birth they often have unnatural appetites and a piece of fresh bacon is better than raw meat, but if they persist in their cannibalism after several times bred do away with them as it will be care and expense wasted to keep them.—W. D. W.

Cemetery Plants

Will you please write the names of a few trees, flowers, and shrubs that are good for cemetery planting? Would the pink oleander be all right? It is a red soil and they do not get any water through the summer.—Subscriber, Trowbridge.

Pines, cypress and cone bearing trees in general are usually planted in cemeteries, but there is no good reason why these are better than others; any trees are proper, whether evergreen or deciduous. Oleanders will grow well without summer watering. The trailing "myrtle" or periwinkle is much used on the graves and is difficult to kill by drouth. The blue plumbago is another equally hardy. Leptospermums, bottle brushes and any Australian shrubs will endure summer's heat without watering if given a good start in early winter. We do not know of any flowering plants that will endure so well as native Californians, of which our poppy is a good example. Dealers can supply you with a mixture of native flower seeds to sow now, and some of them will be sufficiently suited to soil and climate to yield flowers under the hard conditions you have named.

Care of Carnations

Will you please give me some information on the care of carnations, pruning, etc.? We live 2½ miles from Monterey Bay. — Subscriber, Watsonville.

You are in good location as regards sea air. A light sandy loam is the best soil. Cuttings may be taken now but are best for amateur work if taken in spring and put in boxes of pure washed sharp sand and kept well watered at all times. If allowed to wilt they may as well be abandoned, for none will root. Plant out when well rooted and cut off all flower spikes as they appear, until November, for carnations are a winter crop. It is best not to prune, except to get young and vigorous cuttings for propagation, and plants should never be kept beyond the third year. If well grown they should bear well for three years, but necessitated resort to pruning suggests it is time to root out all old plants and plant new stock.

Coleus and Strawberries

Can you tell me what ails my coleus? It is in sandy soil, inside, and kept moist. The leaves droop, though the plant grows rapidly and is large.

I intend moving in the spring and would like to know if I could put in strawberry slips this winter and transplant several months later.—Subscriber, Modesto.

The condition of the coleus leaves suggests the presence of red spider. Daily sprayings with water, several times each day, should soon free the plant of them.

Strawberry cuttings planted now should root well and move readily and safely in spring.

California Tree Seeds

Can you tell me how to plant the following tree seeds to obtain the best results: Monterey pine, sequoia gigantea, California redwood, red cedar, sugar gum eucalyptus?—Subscriber, Campo.

Any light sandy, sifted garden loam will do, but one-half inch such loam and one-half leaf mould would be far better. Cover seeds a half inch, Keep in partially shaded position or cover with lath frames or cheesecloth shades. Keep well and equably watered but be sure drainage is good. See that ants do not infest boxes; especially are the eucalyptus seeds in danger of being carried away. After seedlings are up keep in full light, yet shaded, and see that air circulates freely, yet keep out of the wind. Stagnant air will cause damping off. especially in soils containing leaf mould or other decaying vegetable matter.

Avocado Seed

Please tell me how and when to plant avocado seed. — Subscriber, Anaheim.

The when is just as soon as possible after you get the seed. They rapidly lose their germinating power. If possible plant same day you eat the flesh. Put in boxes, pots, cans or open garden, small end up, and cover but a half inch. Keep well watered at all times.

Legal Queries

Louis B. Stanton, attorney, 343 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 317 Central Ave., Los Angeles.

Joint Tenants

Is there any legal objection to having property deeded to mother and daughter as joint tenants with right of survivorship, in case the husband is still living?—Subscriber, Claremont.

Property can be deeded in such manner to any person, no matter what the relationship or if there be none.

Transporting School Children

When a school board refuses to furnish transportation for children living two miles from a school can they be compelled to pay parents of the children the fee which they are paying for transportation for their children to the same school? — Subscriber, Rialto.

The provision of the political code is to the effect that it is within the power and duty of trustees of common school districts and boards of education to provide for the transportation of pupils wherever in their judgment such transportation is advisable, provided that it shall not cost the district more than 15 cents per pupil transported per day. Certainly it would seem that the board of trustees cannot discriminate, and in case they do that proper proceedings in court could require them to equalize the transportation facilities. It might be well for you to first take the matter up with the county school superintendent.

Loan to Veteran

My son holds an honorable discharge from service in the Spanish-American war. Is he entitled to borrow money for equipment of his ranch? If so, how much? Will it make any difference if he now has a loan on the ranch?—Subscriber, San Jose.

The act providing for farm and home aid for veterans defines a veteran as any individual who has served on active duty in the army, navy, or marine corps of the United States in time of war, and has received an honorable discharge therefrom or who is released from active service on honorable conditions and who at the time of his enlistment, induction, and drafting was a bona fide resident of

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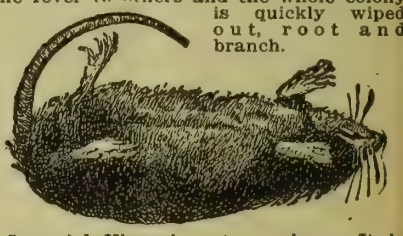

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To quickly get wide distribution, the manufacturers of this amazing Virus are making a Special Offer of two big, full sized (double strength) $1.00 bottles for the price of one. Use one and sell the other to a neighbor, thus getting yours free. Special inducements for full or spare time effort if you wish to act as representative. As this offer may not appear again, you should write at once.

Send $1.00 today, (bill, money order, check, etc.) and you will receive the two $1.00 bottles, post paid. If more convenient, send no money; just your name and address to the Imperial Laboratories, Room 602, 2110 Grand Ave., Kansas City, Mo. You can pay the postman $1.00 and a few cents postage when the two bottles arrive. Imperial Virus is backed by an Iron-clad guarantee to do the work to your entire satisfaction, or your $1.00 will be refunded any time after 30 days without question or quibble.

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the state of California. It would, therefore, incude the veterans of all wars. The act establishes a board to supervise the loaning and purchase of farms and invests this board with authority to purchase for sale to a veteran land for agricultural purposes not exceeding the value of $7,500 or a home or home site not exceeding in value the sum of $5,000, provided, that no one is entitled to this right who has taken advantage of the California Veterans Welfare Act for educational opportunities, receiving a bonus or adjusted compensation or who by receiving any benefits under this act would thereby become the holder in value in case of the farm or homesite of the amount specified above. Other regulations are provided for the board to make and it would be necessary to ascertain from the board itself whether the facts as stated in the question would be such as to enable it to extend assistance in the matter of a loan to take up present indebtedness.

Title to Survivor

I own a farm, the title of which stands in the names of my wife and myself. What is the best way to arrange it so that when one dies all property will go to the survivor?—Subscriber, Puente.

Two methods are available. One, and the simplest and best way, is to file and record a joint homestead on the property. Under the other method property can be deeded to a third party who will then deed it back to the husband and wife as joint tenants with the right of survivorship.

Pipe Line Location

About a year ago my neighbor to the south had a pipe line put in. I have recently surveyed my boundary and find that the pipe line is three feet over my land. May the neighbor be required to move the pipe line or does it belong to me?—Subscriber, Baldwin Park.

Apparently there was uncertainty in the minds of both parties as to the exact position of the boundary line. In view of this uncertainty the neighbor placed his pipe line on what was thought to be his own property but which has since been determined to be yours. He would then be obliged to move the pipe line. It would be only in the case of absence of uncertainty that you would be entitled to retain the pipe line.

Road Closed

Through a large tract for the last 15 years two roads have been maintained by adjacent farmers. The owner of the tract has now closed one road, which renders it practically impossible to reach some of the ranches. The neighbors are all in favor of seeking to have these roads declared county roads. What is the mode of operation?—Subscriber, Valley Center.

It is quite probable that the roads are in fact public highways and by reason of having been used by the public for the past 15 years and improved by the public, the law would presume that they have been dedicated to public use and thus the land owner would be restrained from closing them. All such matters depend so much on history of the road itself that it is well nigh impossible to give an adequate answer. The law provides a means whereby condemnation proceedings may be instituted. These proceedings are commenced by the filing of a petition signed by at least ten freeholders who are to be accommodated by the road, two of whom must be residents within the road district wherein the road is situated and who are taxable therein for road purposes. This petition is addressed to the board of supervisors and seeks the alteration or laying out of the new road, setting forth the general route and the names of the persons over whose land the same is to run. The petition must be accompanied by a bond of the total amount of the cost of viewing the road, conditioned that the bondsmen will pay costs of such surveying in case such road is not granted. Three road viewers are then appointed, who must make their report to the supervisors, and upon receiving the report the board fixes date for hearing and upon hearing, hears the evidence by the parties interested and either grants or rejects the proposed road. If the road is approved it may proceed by way of condemnation proceedings to acquire a right-of-way for the road.

Delinquent Tax Sales

What is the method of buying land that is advertised for sale by delinquent taxes? Can a former owner repurchase it? Who gives a deed? How many years taxes must be delinquent before the land is sold?—Subscriber, Fallbrook.

Whenever the taxes are delinquent for five years the county tax collector deeds to the state the property upon which the taxes are delinquent. Thereafter, the state comptroller authorizes the tax collector to sell the property after publication of notice for three weeks in a newspaper published in the county wherein the property is located. The tax collector thereupon at the time stated sells the property by auction to the highest bidder for cash, but all bids must be at least the amount of taxes, costs, and penalties shown against the land. The state through the tax collector thereupon gives a deed to purchaser. After sale and execution of deed the former owner of the property has no right to re-purchase it, as his whole interest therein has been divested by the deed from the state. In case the proceedings in any way are declared illegal and the conveyance by the state thereby void, then the court may upon payment to the purchaser at the tax sale of all amounts paid out by him, as determined by the court, quiet the title to the property in the original owner.

Is Home Personal Property?

About a year ago I bought a house belonging to a man who leased the land. Can I take the house down and move it away?—Subscriber, Sisquoc.

It would depend entirely upon the terms of the understanding, but it would seem that the house is among the parties considered personal property and detachable from the premises. The terms of the lease would have to be consulted to determine whether or not this is true as against the owner of the land.

Pencil Signature

Is a signature by indelible pencil as legal as by pen on legal papers?—Subscriber, Tulare.

There is no provision of law requiring a signature or other writing to be in any particular manner. About the only question is whether the writing may be changed or altered in such a way as to cast suspicion on the verity of the writing. Signatures by indelible pencil are generally considered to be as safe as signatures by pen.

HUBAM CLOVER DOES WELL

A survey of the 12 or 15 test plots with Hubam clover laid out this past season indicates that this clover has done remarkably well where planted reasonably early. The best results were secured from the earliest planted, the largest growth having been made in a plot planted February 12. By July 15 this clover had reached a height of eight feet and was in full bloom. Considering the unusual amount of cool weather which occurred this spring it is evident that the new Hubam clover will make a very satisfactory growth for cover crop purposes in from three to four months. It would therefore seem that this clover is especially well adapted to green manuring purposes for truck crop growers. It also seems likely that it furnishes the best crop for an early spring cover crop in citrus orchards in the interior districts for use as a means of prevention of June drop. It is expected that seed will be available in much larger quantity for next season and at a much lower price.

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At least 60 mountains in California rise more than 13,000 feet above sea level, but they stand amid a wealth of mountain scenery so rich and varied that they are not considered sufficiently noteworthy to be named, according to the United States geological survey, department of the interior. Yet if any one of these unnamed mountain peaks were in the eastern part of the United States it would be visited annually by millions of people. But California has 70 additional mountain peaks more than 13,000 feet high that have been named, or 130 in all, as well as a dozen that rise above 14,000 feet.

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Household Department

UTILITY VS. BEAUTY, IN VERSE

A Fable

The hen remarked to the muley cow,
As she cackled her daily lay,
(That is, the hen cackled) It's funny how
I'm good for an egg a day.
I'm a fool to do it, for what do I get?
My food and my lodging, My!
But the poodle gets that—he's the household pet,
And he never has laid a single egg yet—
Not even when eggs are high."

The muley cow remarked to the hen,
As she masticated her cud,
(That is, the cow did) "Well, what then?
You quit, and your name is mud.
I'm good for eight gallons of milk each day,
And I'm given my stable and grub;
But the parrot gets that much, anyway—
All she can gobble—and what does she pay?
Not a dribble of milk, the dub!

But the hired man remarked to the pair,
"You get all that's coming to you,
The poodle does tricks, an' the parrot kin swear,
Which is better th'n you kin do.
You're necessary, but what's the use
O' bewailin' your daily part?
You're bourgeois—workin's your only excuse;
You can't do nothin' but jest produce—
What them fellers does is Art!"
—"Capital," Calcutta, India.

TWO MAGIC POWDERS

MRS. BALLARD stood in the back doorway, drawing in, with slow, measured breaths, the fresh spring air. Somewhere, a robin chirped; two kittens bounded across the yard; and from the garden, a stone's throw away, a rollicking song, in the fresh, clear notes of a boy, rang blithely.

Mrs. Ballard wiped the perspiration from her face with a damp, parboiled hand. "It's no wonder," she sighed, "that young things feel frisky. Time was, I remember, that I used to whenever spring came along."

A neighbor clicked the gate. Mrs. Ballard greeted her. "Good morning, Mrs. Winn. Come right in."

She led the way into the kitchen where a basket of snowy clothes was waiting to be put on the line. "It's not often," she excused herself, "that I dally over the wash. But I've the most aggravating headache this morning—the kind that just keeps a-nagging like."

Her caller nodded. "I don't wonder," she remarked shortly, "that you have headache. There isn't a girl in town has so many frills as Joyanna. And I've never seen her even so much as help you at the rinse."

The mother sighed. "She's young," she apologized. "I want her to have her youth. I never had any." She was piling the breakfast dishes into the washing pan. "Mother died when I was only nine and by the time I was twelve I was keeping house for father and the two boys. There wasn't much time to think about youth in those days. But I always said if so be's I had a girl of my own she should have a few years to enjoy just being young.

Mrs. Winn moved a little impatiently. "That's all right, as far as it goes," she acknowledged. "But what's the matter with you getting a few years to enjoy just being a woman? Seems to me, just because a body didn't have a chance to be young is no reason why they shouldn't get a chance to live. You need your turn."

Up the walk came a vision of girlish beauty. Joyanna Ballard entered the warm kitchen. "Mercy!" she cried. "You're stifling in here! Why in the world don't you go out and visit on the porch, mother?"

"Your mother's work happens to be inside, my girl," Mrs. Winn answered. "And I didn't come to visit. I came for a dozen eggs. We were having a chat first. Your ma's plumb beat out with the spring weather."

Joyanna turned anxious eyes toward the sink. "Didn't you feel well, mother?" she asked. "I just asked Sue and Ned Thom to come for tea tonight. Had I better run over and say you're ill?" If an added bit of rose touched the velvet of her cheeks at the mention of Ned Thom's name, only her mother noted it.

"No, no, child." Mrs. Ballard spoke laconically. "I dare say I'll be all right by noon. What'll you want for supper?"

Moving backward, Joyanna stood framed in the open doorway. The morning breeze tossed bright strands of coppery gold about her cheeks and ears. Her white morning dress, open at the neck, showed a throat as white and smooth as ivory. "I wonder," she inquired, wrinkling her pretty brow, "if it's too late for hot raised rolls? And Ned does love angel cake! And couldn't we have broilers?" Her voice was pleading. "I forgot all about it being washing day," she confessed. "If it is going to be too hard, I'll run right over and say you're sick."

Abruptly Mrs. Winn rose. "Did you ever have a headache, Anna?" she inquired crisply.

The girl in the doorway flushed. "Why, yes," she replied shortly. "I suppose everyone has."

"Then," declared the grim faced woman, "you know how it feels, for though some's worse than others, a headache's a headache, same's a human's a human and a heart's a heart. Can I get a dozen eggs, Mrs. Ballard?"

A moment later she stalked majestically down the walk. As she passed Joyanna who was bending over a flowering shrub, she remarked, "You'll be mighty lonesome, I'm thinking, if you wake up some day and find your mother gone."

Joyanna straightened. "Gone!" she repeated. "Where on earth would she go?"

"There comes a time—" Mrs. Winn's words were as clear and cold as an icicle glistening in the sun—"when we go."

Mechanically Joyanna brushed a bit of dust from the front of her morning gown. When she spoke her voice seemed strange and harsh. "I do wish," said she fretfully, "Winston would stop that whistling." But clear and joyous and loud, the whistling went on.

Mrs. Winn regarded her curiously. Then she turned. "I saw her go into Dr. Wattles' office yesterday," she said and snapped the gate with an aggressive click.

The minutes passed and still Joyanna stood as if rooted to the spot. A vague wonder flitted through her mind as to whether she could ever again bear to look at the bush beside her. The twittering of the birds hurt her. The gay tune from the field seemed like thunder in her ears. Then she flew into the house.

As she stepped inside the door a cheery "Good morning!" made her turn. Dr. Wattles' car stood by the gate. Dr. Wattles, grave, keen of eye, was looking her up and down.

Closing the door behind her, she went out to him.

"I brought two powders," he announced. "I thought I'd see you either in the yard or somewhere along the way."

"For mother?" The strange sharpness was still in her voice.

"No." He ran one finger thoughtfully about the edge of the steering wheel. "For yourself." His eyes met hers. "Your mother was in for a tonic yesterday. A mere tonic, it appeared to me, wouldn't fill the bill. So I've brought along these two powders for you to manage. Mix 'em thoroughly and take at once. If they act right, I guess she'll come out all right in time." With a whir, he was off down the road.

Joyanna gazed at the neatly folded powders in her palm. Then she retraced her steps to the house. Not for nothing had she gone through Wellesley with the highest honors of her class. In her quick brain lurked a vague premonition of what she was to find.

In her cool, dainty room she slowly unfolded one of the "powders," smoothed it gently and through a blurring mist read, "Not alone our lives, but the lives of those we love, are in a great measure what we make them. The sun and the sound of the birds and the glory of the spring are for all alike. Share ye one another's burdens and so fulfill the law of Christ."

Then she opened the other: "A little honest love; a little help; a little cheer. To be given at intervals every day."

Like a panorama, the years since her father's death spread before her. How full of brightness and sweetness and love they had been! In corre-

sponding proportion, how full of dullness and work and thanklessness they had been for her mother! With cutting clearness she saw the cheap calico dresses, varied by one dull, rusty black, hanging opposite her own dainty whites and pinks and blues.

Crossing to the window she drew a long, tense breath and raised a white but earnest young face to the sky. "O God!" she whispered. "I thought my happiness was all that mattered! Teach me another way!"

A second later she was fastening a plain gingham in place of the dainty white. Then she ran briskly downstairs.

"Mother," she cried, crossing to the sink where Mrs. Ballard was still at the dishes, "you go straight upstairs and lie down. I'll do these!"

"No, no, child," her mother demurred. "It's too hot. You'll get all fagged out for tonight."

Like the sting of a whip, the thought of Ned Thom stung her. His student life, so far removed from all household care — he would never understand!

"They're not coming tonight." Her voice was soft and sweet. "I guess they'd just as soon go over to Lora Dale's lawn party anyhow. I'm going to 'phone them that you and I are going shopping, if your head gets fit, all afternoon. I've been looking over my things. It's scandalous to have so much half worn stuff on hand and I'm not going to have a single new dress this year. We're going to get a few things for you, for a change."

At sight of the wistful, eager light that flooded the tired face something new and clean and sweet swept through the soul of the girl. It crowned her, for the moment, with a touch of something almost beyond earth. "Mother," she said slowly, "I never knew how really much I loved you before." Then, with a gentle push she moved her mother toward the stairs. "Do get to bed! I'll be up in a jiffy to bathe your head, same's you do mine when it aches."

She hurried to the telephone. "I'll have to cancel that invitation," she said, a moment later. "Mother has a headache and she'd never let me get supper for you and Sue, and I'm not going to let her. And—" just a moment she hesitated, "—I'm not going to ask you again, either, until I've learned to get up a meal by myself. I'm afraid mother's been doing too much. . . . What's that? . . . No." Sweet and clear, her voice carried over the wire; sweet and clear, the light still shone in her eyes. "You'll have to count me out. I can't go, Ned. I'm through playing. I think I'm just starting to —live. I want to get mother off to Aunt Nell for a rest and we'll be snowed under with sewing."

The April sun streamed in and touched the tawny gold of her hair. Her face was hidden in her folded arms; and in her heart Ned Thom's words rang, like chimes of silver bells— "Joy Ballard!" The words seemed to the listening girl a tender caress. "I've often wondered if the heart was quite as sweet as the name. Now I know! I'll be 'round there in about 15 minutes to say three words I was just a little—afraid to say—before."

From the field the sound of a merry tune wafted through the air. "Dear old Win!" she smiled. 'I hope he never forgets how to whistle! It sounds so—glad;"—L. D. Stearns in Farmer's Wife.

HINTS FROM HOUSEKEEPERS

Sweet Pickled Melon Rind

8 pounds watermelon rind, 4 pounds sugar, 1½ pints vinegar, 1 cup mixed spices (in bag), 1 cup clear ginger tea. Prepare melon rind by removing all the green rind and inner ripe portion, leaving only white. Boil until clear in a strong ginger tea. Skim out and let tea settle and use the clear tea (1 cup) in the syrup. Have the syrup boiling and add rind and boil for about half an hour.—Mrs. Wm. P. Russell, Prado.

Vegetable Soup for Canning

6 onions, 6 carrots, 2 turnips, ¼ small cabbage, 2 or 3 sweet peppers, both red and green, seeds removed; 1 smarty pepper, seeds removed; 6 stalks celery, 1 peck tomatoes.

Seasoning and Cooking — Wash, peel and run through chopper all but tomatoes and put on to cook with enough water to cover. Cut up the tomatoes unpeeled and put on to cook in another kettle until soft, with one quart of water. Rub all possible through sieve, add to vegetables together with a bunch of parsley, one bay leaf (to be removed) and six cloves. Cook till all are tender, about half an hour or longer. Just before canning add salt, pepper and sugar to taste. Can boiling hot by open kettle method. It is better to add half of smarty pepper first and taste.—Mrs. Reasoner, Winters.

Cake Fillings

Dried Apricot Filling — ½ pound dried apricots, wash, cook till soft and press through a sieve. Add 1 cup sugar, cook a little more, and then let it cool, then add chopped walnuts. Spread between layer, put whipped cream and half walnuts on top of cake.

Coconut Cream Filling — 3 level tablespoons flour, 1 cup cold water. Mix thoroughly and cook in double boiler till thick, stir constantly then let it cool. While it is cooling cream together 2 tablespoons butter and 1 cup confectioner's sugar. Mix and beat thoroughly, flavor with vanilla, add coconut or a few walnuts.

Lemon Apple Filling — Peel and grate 2 good sized apples, grate the peeling of 1 lemon and take the juice of 2, add 1 cup sugar, cook all together in double boiler. — Mrs. H. Pfeffer, Los Gatos.

HOUSEHOLD QUERIES

To Serve Lobster

I have seen so many recipes in the paper that are helpful and would like to ask if you can tell me how to serve craw-fish or lobsters. Would be glad to hear of any way. Subscriber, Long Beach.

Broiled with Bacon—Lobster is good just about any way it's served, according to our ideas. Our favorite, perhaps, is the simplest. Pull meat loose from portion to which legs are attached, split lengthwise, leaving in shell. Put in pan under broiler, laying strip of bacon over each half. As soon as bacon is broiled the lobster is heated through and is ready to serve, the bacon grease running into the shell and through the meat giving all seasoning necessary. Half of the ordinary small sized lobster makes one individual serving. Serve with slices of lemon.

We assume in these recipes that the boiled lobsters are used as practically none of the green lobsters reach the housewife.

Creamed. — Make ordinary cream sauce, melting 2 tablespoons butter, blending in 1 to 2 tablespoons flour as one likes, adding boiling water and milk to make desired consistency. Add lobster, cut in approximately half inch cubes. Season with salt and black pepper, let cook a half minute or so and serve on hot toast. Add Worcestershire sauce, walnut catsup, tomato catsup or any like sauce fancied.

Salad. — Cut in small cubes — shredded lobster always is tough, it should be cut in short pieces across the grain—add cut celery, cabbage heart, onion if liked, blend with mayonnaise and serve on lettuce.

Quince Honey

Will some one please send recipes for quince honey?—Subscriber, Ceres.

SWEET PICKLES

I am sending good sweet pickle recipe. This has been tried and proved excellent. Soak cucumbers in brine strong enough to hold up an egg, at least three weeks. Take from brine, split, sprinkle with alum and cover with boiling water until salt is soaked out. Make a syrup of vinegar and spices, 1 quart vinegar, 3 pounds sugar, whole cloves, cinnamon and other spices. Let syrup come to a boil, put in pickles and boil till tender. Pack pickles into jars. Boil syrup till thick and pour over them. These are better to stand awhile before using.—M. Payne, Bakersfield.

Soak four to five inch long cucumbers two weeks in brine strong enough to hold up an egg. Then slice

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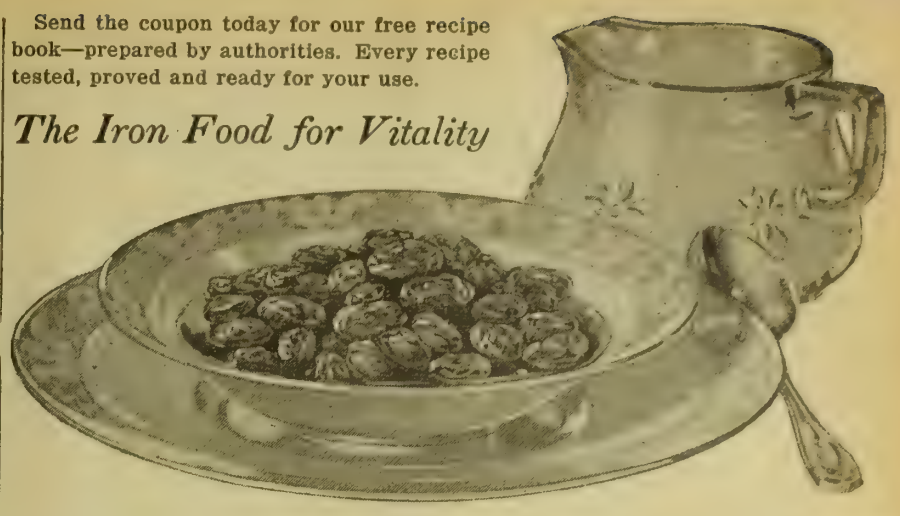

Six Delicious Ways

To Serve Stewed Raisins

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cucumbers, soak in water until no salt, or very little, remains, changing often. (Small cucumbers may be used if preferred). Soak again in alum water, two tablespoons powdered alum to enough water to cover two gallons of pickles, 24 hours. Drain all water off, wash and boil half hour in strong ginger water (about ten cents worth). Rinse and drain well, put a plate with weight on and let stand several hours. Then wipe dry, place in stone jar, make syrup of 1 quart vinegar, 1 pint water, 3 pounds sugar, add mixed spices. Boil syrup and pour over cucumbers. Repeat until they look clear, usually three or four times.—Mrs. H. A. Pierce.

One of your subscribers from Elk Grove asks for a recipe for making sweet pickles such as are sold in the stores. The following will make quantity sufficient for an average family for the whole season:

Wash 75 small cucumbers, cut into quarters lengthwise. Scald and peel ½ quart small button onions. Wash ½ cauliflower, 1½ pints green beans and rind of ¼ medium size watermelon after peeling. Break cauliflower into small pieces, cut melon rind in short strips, make brine of 1½ cups salt to 2 quarts cold water, put vegetables in crock and pour brine over them, weight down with a plate to keep under brine, let stand two days, remove from brine, wash in cold water, add ⅛ pound grated horseradish root and ½ teaspoon celery seed. Pour back into crock and add a hot vinegar made as follows: Tie in a bag the following spices. ½ teaspoon white mustard seed, ½ tablespoon stick cinnamon broken into pieces, ½ tablespoon whole cloves, ¼ tablespoon each pepper corns, allspice and whole mace. Add 1 quart vinegar and ½ cup sugar (more sugar if you like), ½ ounce alum. Boil ten minutes, then skim and add 1 quart boiling water and pour immediately over vegetables. In about four weeks these will be ready for use. They are delicious.

No. 2.—One peck small cucumbers, wash well, make brine of 1 gallon water, 1 cup salt. When boiling hot pour over cucumbers. Cover closely and let stand 24 hours. Pour off brine, wipe pickles and crowd into wide mouthed jars, and for each quart pour over the following boiling hot: ¾ quart vinegar, 1 tablespoon sugar and 2 teaspoons mixed spices. Seal as soon as the liquid has been added. These are crisp and very good.—Mrs. D. W. Wilt, Fallbrook.

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FAVORITE FROSTINGS

Orange Frosting

I am sending my favorite recipe for cake frosting for the benefit of the Artois subscriber as well as others who may like it:

1½ cups powdered sugar, 2 tablespoons hot milk, ½ teaspoon butter, ½ teaspoon vanilla. Add butter to hot milk and sufficient sugar to make right consistency to spread. Add flavoring. There are endless ways of varying this recipe. Different flavorings such as mapleine, banana, etc., may be used. An excellent orange frosting may be made by using 1 tablespoon milk, 1 teaspoon butter, 1 cup powdered sugar, ½ teaspoon orange extract, or orange juice to taste, also grated orange rind as liked.—Mrs. Harold K. Lee, Garden Grove.

Chocolate Frosting

In your issue for October 29 "Subscriber, Artois," asks for cake frostings, not too rich. I am sending our favorite recipe:

1 heaping tablespoon chocolate, 1 heaping tablespoon butter, 3 tablespoons hot coffee (liquid). Stir till well blended and add powdered sugar till the proper consistency for spreading. Add pineapple flavoring.—Mrs. F. N. Oakes, Paso Robles.

Caramel Frosting

1½ cups brown sugar, 1 cup milk, 1 tablespoon (level) butter, 1 teaspoon vanilla. Boil until it makes soft ball in cold water. Remove from stove and stir till thick. Add vanilla last.

Simple Frosting

1 tablespoon butter, 6 tablespoons boiling water. Stir till butter is melted, and stir in powdered sugar till stiff enough to spread. Use any desired flavor. Nice with grated rind and juice of orange.

Cake Filling

½ pound dates or figs, 2 tablespoons sugar, 3 tablespoons boiling water, 1 tablespoon lemon juice. Boil until thick enough to spread.—Mrs. W. P. Russell, Prado.

Marshmallow Icing

1 cup granulated sugar, 1 dozen marshmallows, white of one egg. Boil sugar and ½ cup water until it spins thread, pour over beaten white of egg, add marshmallows and beat until cool enough to spread.

Golden Icing

Boil 2 cups sugar with 1 cup water until it strings or threads. Pour over well beaten yolks of 4 eggs. Beat until smooth and thick. Add 1½ teaspoons orange extract and pinch of salt. Spread rapidly on cake. (Very pretty on white cake, using whites in cake and yolks in the icing.)

Boiled Icing

1 cup sugar, ½ cup water, 1 egg white, flavoring (teaspoon), pinch cream of tartar. Boil sugar and water until it spins a thread when dropped from spoon. Add cream of tartar. Do not stir after it begins to boil. Remove from fire and pour slowly over stiffly beaten egg white, at the same time stirring briskly. Add flavoring, stir until it thickens, spread on cake. This is used as foundation for a number of frostings. Add unsweetened grated chocolate, shredded coconut or chopped walnuts, or add fruit coloring for variation.

Uncooked Icing

1 cup powdered sugar, enough evaporated milk to make it the proper consistency to spread, with butter the size of walnut. Add any flavoring.—Mrs. C. A. Thomas, Morgan Hill.

White Frosting (Large Cake)

2 cups granulated sugar, ½ cup white corn syrup, ¼ cup hot water, whites of 2 eggs, ¼ teaspoon lemon extract, ¼ teaspoon vanilla extract. Put sugar, syrup and water in pan, heat slowly and stir until sugar is melted. Cook until it will form a very firm ball when dropped in cold water. Pour very slowly over egg whites beaten to a stiff froth, flavor and beat until it will hold its shape when dropped from spoon. Use at once.—Yorba Linda Subscriber.

Soft Frosting

Stir together one level teaspoon butter, ¼ cup milk and 1 cup sugar until it boils, then boil without stirring 5 minutes, remove from fire, beat rapidly, add flavor and before it is very stiff pour it over the cake and spread with a knife.—Mrs. J. F. Browning, Highland.

Uncooked Frosting

2 cups powdered sugar, 4 tablespoons cocoa. Mix well together, then blend with 4 tablespoons melted butter and 4 tablespoons either hot coffee or water, flavor with vanilla. Leave out coffee and use either water or milk for white frosting.

Cooked Frosting

1½ cups light brown sugar, ½ cup granulated sugar. Cook until it threads, pour over beaten whites of 2 eggs. Beat awhile, then put in double boiler and cook till grainy. Remove from fire, beat again. Nuts may be added.—Mrs. O. H. Piper, Ventura.

Boiled Frosting With Gelatine

1 tablespoon gelatine dissolved in 3 tablespoons cold water, ½ teaspoon vanilla. Boil 1 cup sugar and ¼ cup hot water until it threads and add gelatine mixture. Beat whites of 2 eggs very stiff. Pour mixture over eggs. Now beat all until stiff and dry. This is mellow and delicious to the taste.

Boil..d Fruit Frosting

Boil 1 cup sugar and 2 tablespoons hot water until it threads. Have ready whites of 2 eggs beaten stiff (with trifle grated orange peel in it or 1 tablespoon raspberry or strawberry jam), then pour syrup over beaten whites and beat until smooth.—Mrs. D. W. Wilt, Fallbrook.

Boiled Frosting

As I have gotten some very valuable recipes from the household department of the Cultivator, I am sending herewith for the approval of the subscriber from Artois two favorite recipes for cake frosting:

Boiled Frosting—Boil 2 cups sugar with ½ cup boiling water until it threads, then pour slowly over the stiffly beaten whites of two eggs, which should be beaten in a saucepan, and beat until nearly stiff enough to spread, then place saucepan in larger pan containing small quantity boiling water, place on range and cook, stirring constantly, scraping from bottom and sides of pan until mixture becomes granular around sides of pan. Remove from pan of hot water and beat until mixture will hold its shape,

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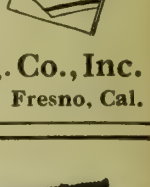

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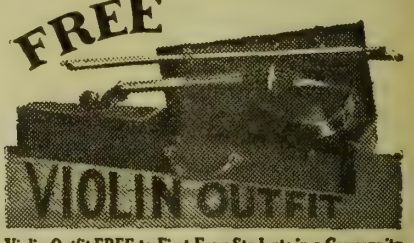

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PATTERN DEPARTMENT

California Cultivator Los Angeles

then add ½ teaspoon vanilla. Spread on cake with knife.

Orange Frosting

To the juice of half a medium sized orange add powdered sugar until stiff enough to spread. This is enough for a small or medium sized cake; for a larger cake use juice of whole orange. This is a delicious frosting, quickly made and does not dry out.—Mrs. E. D. M.

Boiled Frosting

1 cup granulated sugar, 1 white of egg (unbeaten), ½ teaspoon baking powder, 3 tablespoons boiling water. Place sugar and boiling water in double boiler (in boiling water), add unbeaten egg white and baking powder and beat with Dover egg beater until thick like marshmallows. Add ¼ teaspoon vanilla, remove from fire and keep beating until cool enough to spread. This is a splendid recipe, as it is so dependable and cuts so nicely. —Mrs. H. A. Price, Corona.

Uncooked Frosting

I have been reading with interest your household department in the California Cultivator and wish to contribute a recipe for cake frosting which was requested in the last number of the ppaer.

For a three layer cake take two cups powdered sugar, add tablespoon butter, or less will do if not wanted so rich. Heat small amount of milk or cream if wanted to be very extra and add to butter and sugar after they have been mixed as well as possible. The warm milk will make it stir smooth but be careful not to use too much as it wants to be quite firm. Flavor with 1 drop or 2 lemon extract and if wanted color pink with fruit color or brown with chocolate. This is very easily made and we like it the best of any.—Mrs. A. L. Curtice, Ceres.

WATER SUPPLY SYSTEMS

Every farm home should have a water system which will furnish an ample supply of good water for cooking and washing purposes. Carrying water for household purposes by the "water pail route" is hard, tiresome labor.

Running water on the farm is not a luxury which may be had only by those who have means, but some type of water system is in the reach of all. In considering any water system one should ask himself the following questions:

Is it simple and dependable?

Is it safe and sanitary?

Is it reasonably low in cost and upkeep expense?

A TERRIBLLE ARGUMENT

"Pompey," said an old-time darky leaning against his hoe-handle, "me an' old marster hab one pow'ful 'spute dis mawnin'—we sho' does!"

"Go 'long Mose! What you an' ole marster 'spute so pow'ful about?"

"Ole marster he come along hyer whah I wuz hoein' cotton, an' he 'low sezzee dat millions grows bes' in sandy ground," and I, low so too, an' we des 'spute an' 'spute aout it fo' mos' half a houah!"

A SURE REMINDER

Perhaps the most original suggestion for a "reminder" was that of a little boy whose grandmother had forgotten his birthday present the year before. She wished to know what she could do in order that she should not forget it again.

"You might put your teeth in upside down," said the boy.—Boston Transcript.

WITH THE EVIDENCE

"The evidence seems to show," said the detective, "that the thief wore rubbers and walked backward."

"Then we must look out for a man with receding gums," remarked the wag of the force."—Boston Transcript.

HE KNEW

Teacher—Johnny, I suppose you know what a caterpillar is?

Johnny—Yes'm; it's an upholstered worm.

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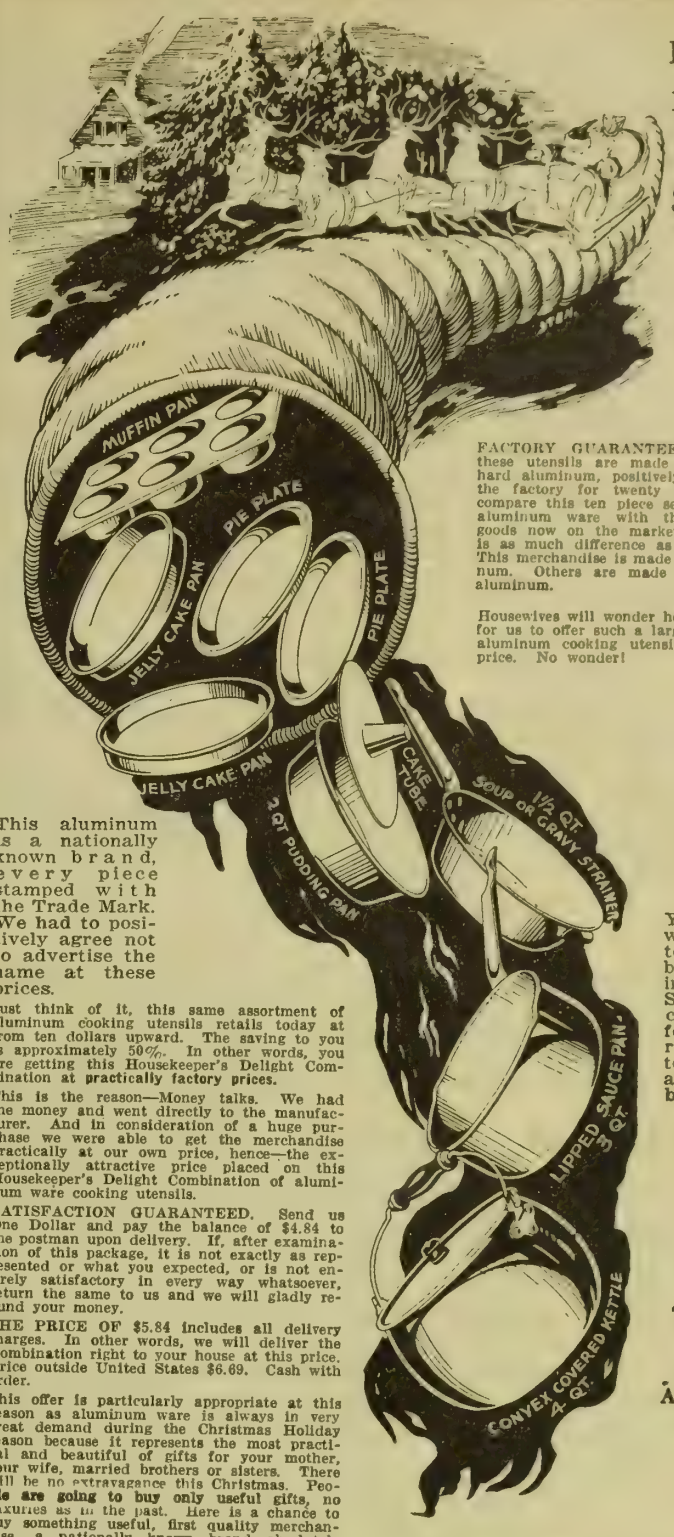

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Just think of it, this same assortment of aluminum cooking utensils retails today at from ten dollars upward. The saving to you is approximately 50%. In other words, you are getting this Housekeeper's Delight Combination at **practically factory prices.**

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THE PRICE OF $5.84 includes all delivery charges. In other words, we will deliver the Combination right to your house at this price. Price outside United States $6.69. Cash with order.

This offer is particularly appropriate at this season as aluminum ware is always in very great demand during the Christmas Holiday season because it represents the most practical and beautiful of gifts for your mother, your wife, married brothers or sisters. There will be no extravagance this Christmas. Peo**ple are going to buy only useful gifts,** no luxuries as in the past. Here is a chance to buy something useful, first quality merchandise, a nationally known brand absolutely guaranteed by the factory and at a big saving. We have explained why it was possible to quote such a low price.

Although we have bought thousands upon thousands of these Housekeeper's Delight Combinations of aluminum ware cooking utensils, the price at which we are offering these is bound to bring a big rush. In fact, it is not expected that we will have enough to go around and we, therefore, reserve the right to reject orders should your order come in too late.

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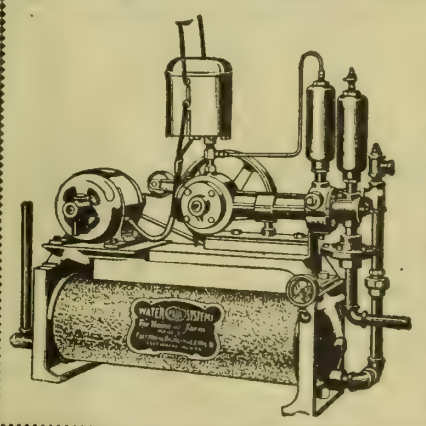
Enclosed is $1.00. Send one HOUSEKEEPER'S DELIGHT COMBINATION of Aluminum Cooking Utensils (10 pieces as represented.) I agree to pay the postman the balance of $4.84 upon delivery of the set. If the set is not satisfactory in all respects, I have the privilege to return it and you will refund my money.

—Write Plainly—

Name.....

Address.....

Town..... State.....



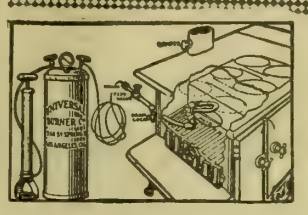
Paul Direct Water Systems for the Home

The "PAUL" Direct Service Water System consists of a standard "Paul" type "K" or "FK" self-priming pump, motor driven; suction strainer; air charging device; PAUL type "I" automatic pressure controller, set to maintain a service pressure within given limits, a galvanized pneumatic pressure tank, tested under 125 lbs. pressure, provided with pressure gauge and drain, tapped for the service pipe; discharge piping between pump and tank complete with all necessary fittings and water relief valve; the whole forming a self-contained unit water system ready for connecting to suction and service pipes, and is suitable for residences with a complete single set of plumbing fixtures, including bath, and for a similar service within their capacity.

Write for Descriptive Circular and Price List

The Joy-Reams Company

1908 So. Main St. Los Angeles, Cal. Phone No. So. 525



Make Your Own Gas and Heat With UNIVERSAL "OIL-GAS" BURNERS

Air Pressure System (like Cut) $32.50
Gravity Systems. $15.00 and Up

Write for Descriptive Circulars

UNIVERSAL BURNER CO., Dept. D
246 So. Spring St., Los Angeles, Cal.

San Joaquin County Holstein Breeders

WILL SELL

55 REGISTERED HOLSTEINS 55

AT PUBLIC AUCTION

Fair Grounds, Stockton, Cal.

Tuesday, November 15, 1921

This offering will include some of the very top animals in some of the best San Joaquin County herds, and includes the entire herd owned by J. C. Ramsey, Modesto, excepting four head.

COWS WITH RECORDS UP TO OVER 32 POUNDS BUTTER and over 700 POUNDS MILK IN 7 DAYS!

DAUGHTERS OF HIGH RECORD COWS!

BRED TO BULLS OF HIGH RECORD AND POPULAR BREEDING!

CONTRIBUTORS TO SALE:

J. M. CAMPBELL, Escalon
R. STEVENS, Stockton
J. C. RAMSEY, Modesto
M. J. & B. A. EDWARDS, Escalon
SALFIELD & CONDON, Escalon
AND OTHERS

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OLD TUBERCULIN TESTED AND SOLD SUBJECT TO RETEST BY THE BUYER.

Catalog of Sale Free on Request

Auctioneers:
Col. Ben A Rhoades
Col. John A. Davis

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

Santa Anita Rancho

Pure Bred Registered Percheron, Arabian and Thoroughbred Horses, Holstein-Friesian Cattle, Southdown Sheep, Big Type Poland China Swine, Mammoth Jacks and Jennets.
Young Breeding Stock of All Kinds
Every Animal Guaranteed

Santa Anita Rancho and Anoakia Breeding Farm

SANTA ANITA Anita M. Baldwin, Owner CALIFORNIA

GUASTI BERKSHIRES

We are breeding some awfully good Berkshires and are having very good success in the shows this fall.
We can supply your demand for

Big Modern Type Berkshires

in any class at reasonable prices.
Inquire about our bred gilts and young boars.

ITALIAN VINEYARD COMPANY

Alex. M. Wilson, Supt. Guasti, Cal.

P. S.—Farmers and pig club boys given special attention.

MR. FARMER:—

You are contemplating the purchase of a service bull next year. Why not save 50 per cent of the purchase price by buying a registered Holstein bull-calf now. Pay for him next year when he is ready for service.

Sons of SIR VEEMAN KORNDYKE PONTIAC, who has 27 A. R. O. daughters. and of BURR WALKER SADIE VALE, whose seven nearest dams average 29 lbs. of butter in 7 days, included in this offer. Call or write at once.

BURR FARM 26th and Downey Road, Los Angeles RFD 2 Box 120

HOLSTEIN *Fred Hartsook* RANCH CATTLE

We have assembled an excellent foundation herd of females and will be glad to have breeders call. Fred Hartsook, Lankershim, California.

Tosantos Walker Mead

Born December 9, 1919
Exceptional Yearly Record Backing

His five nearest dams average over 1,000 lbs. butter in a year. He is out of a wonderful daughter of Prince Gelsche Walker and Sir Aaggie Mead De Kol. He is a show bull and is priced for immediate sale.

E. D. BARRY, JR. Workman and Azusa Ave., Covina, Cal

Pork Making in California

By E. H. Hughes, Assistant Professor Swine Husbandry, College of Agriculture

With finishing hogs selling at present prices and when barley and other feeds can be had at a reasonable figure hog feeding is an attractive business. During the past few weeks a great many men have been looking for feeder hogs in California. This has been true of the southern part of the state, San Joaquin valley and Sacramento valley and other sections where there are large quantities of barley and other feeds. Many hogs are to be found in the stubble fields and others are being finished in the feed lots. Considering California feeds at present prices and the fact that we can in this state produce fall and spring litters, it would seem that hogmen could produce market hogs cheaper than they can be produced in the corn belt, where most swine men produce only one litter a year or at least not more than three litters in two years.

With our alfalfa forage and other green winter feeds the cost of producing a 200-pound hog in this state does not exceed that of any other state. It is true that barley is slightly less valuable as a swine feed than is Indian corn. The results of various feeding trials indicate that Indian corn is worth about 10 per cent more than barley as a fattening feed. We have, however, as cheap nitrogenous concentrates in California as there are in any other section. Such feeds as tankage, fish meal and cocoanut meal can be purchased at a reasonable figure. In addition, some of our swine men are beginning to use rice bran which is at the present time a comparatively cheap feed. The results of feeding trials conducted by experiment stations in various parts of the United States would lead one to expect that 100 pounds of gain could be expected from 400 pounds to 500 pounds of grain when fed to pigs weighing from 80 pounds to 100 pounds, especially when a balanced ration is used. In many instances 100 pounds gain has been made on less than 400 pounds of grain when the pigs have had access to alfalfa forage.

Considering the present price of barley and tankage it is not difficult to figure that money can be made in feeding pigs. We have in this state no doubt a surplus of feed and it is just as true that there is a shortage of hogs. Considering the present selling price of cattle and sheep, it would be reasonable to expect that most of this feed will be put into dairy cattle and hogs, and as dairy cattle consume large quantities of roughage, no doubt a large percentage of surplus grain should be marketed in the form of pork.

An inquiry made on April 1, 1921, to ascertain the number of brood sows in California as compared with the number the previous year showed a seven per cent decrease. The estimated number of brood sows in California at that time was 86,000 head as compared to 93,000 head the previous year. During the year ending July 1, 1921, California Farm Bureau Marketing Association sold nine per cent less cars of hogs than they did during the preceding year, and this association no doubt handled a larger percentage of the hogs marketed in the section in which they operate than they did in 1920. It is impossible to estimate the number of hogs that have been shipped into California for slaughtering purposes during the spring months.

The situation demands some clear and constructive thinking. Many of our small ranchers are concentrating their investments in vineyards and in orange, prune and other orchards; others are concentrating their efforts in the production of alfalfa, barley, beans or wheat. Sooner or later our soil will demand the production of an increased amount of barnyard manure. In the southern part of the state this condition has already manifested itself, and a certain percentage of the growers are putting in herds of cattle, sheep or hogs primarily to furnish the orchards with humus which they are able to get in this way.

Since 1917 we have consumed more pork and pork products than have been produced in California. We need more hogs on more ranches in this state. On nearly every ranch there is a certain amount of grain, fruit and other products going to waste. A brood sow or two with their pigs will take care of that waste and in addition will become a source of income, either through marketing them in the farm bureau sale or in the form of cured hams and bacon.

Late census figures show that only four per cent of the swine in the United States are listed as pure breds. The pure bred breeders of swine, therefore, have a task ahead. They have an excellent opportunity to build up a home trade among their neighbors. There are few men but that realize that well bred livestock, whether it be cattle, sheep or swine, will gain more economically than livestock of nondescript breeding. In many sections large numbers of purebred animals, not registered, are fattened yearly. The feeder figures that the animal's ability to gain makes such a practice a profitable one.

The pure bred business is getting back to pre-war levels. The price of feed is such that many breeders can afford to develop a home trade by selling a few boars and brood sows and gilts to his neighbors. In so doing he is developing the swine industry in his own locality and is, in addition, creating a demand for the future by starting someone in the hog business and the selling cost has been small.

BREEDERS ORGANIZE

On October 26 the Ayrshire breeders of California and Nevada met at the Hotel Bellevue, San Francisco, to organize a local Ayrshire association. About 20 breeders and others interested in Ayrshires participated in the various discussions of the evening. The final decision was to organize under the title "The Southwest Ayrshire Association" with the states of California, Nevada and Arizona as its field of operation.

Last year the breeders in Washington, Oregon, Idaho and British Columbia were organized under the title of the Northwest Ayrshire Breeders Association. J. R. Maben of Fallon, Nevada, was at that time a resident of Oregon and was the first president of the Northwest association. Being now located in Nevada he has accepted the position of vice-president for Nevada of the new association. He brings to the Southwest a wealth of experience as a breeder and organizer and will look after the work of securing members in Nevada.

Mr. Hughes of Penobscot Ayrshire Farm, Cool, acted as chairman of the evening, and Mr. Wing of Elkhorn Farm, Watsonville, acted as secretary. The following permanent officers were elected: President, C. A. Le Baron, Norabel Ayrshire Farm, Valley Ford; vice-president for Nevada, J. R. Maben, Fallon; for California, L. W. Wing, Jr., Elkhorn Farm, Watsonville; for Arizona, A. McMinn, Litchfield; secretary-treasurer, Geo. W. Fry, Redwoods Ayrshire Farm, La Honda.

The president was authorized to appoint either three or five directors to work in connection with the elected officers. It was decided to hold the next meeting of the association at University Farm, Davis, during Stockmen's week in February, at which time a constitution will be presented by the committee which is to be appointed by the president. The question of finances was not settled, but was put into the hands of the president and his officers for decision.

All breeders who were not present at the meeting are requested to get in touch with the secretary at once in order that they may be put on the mailing list for the various announcements. Persons desiring to purchase Ayrshires or breeders having animals for sale should write the secretary, who will communicate promptly with all persons who have stock to sell or who are listed as desiring to add to their herds. This service will be free to all.—Geo. W. Fry, Secretary.

Cazier Sale Starts New Hereford Herds

Fortunate indeed were those who answered the call for the second annual sale of Herefords from the J. H. Cazier & Sons' herd which was held at the state fair grounds at Sacramento, November 1, as it is certain that no more desirable lots have ever passed under the hammer in this state than those offered in the above sale. No herd in the West is held in higher esteem than this Nevada herd and after a season of unusual success in the show rings it was expected that western cattlemen would look to the sale as an opportunity for securing foundation material of undoubted merit.

Fifty-three females and three outstanding young bulls were taken by 10 buyers at an average valuation of $255. While the price realized was somewhat of a disappointment the sale ranks among the three best held anywhere in the United States this fall.

Aside from the splendid quality of the offering, representing for the most part daughters of Harris Standard 2d carrying the service of Beau Blanchard 76th, the feature of the sale was the fact that practically the entire offering was taken by men just entering the business of breeding purebred Herefords. Messrs. Cazier can regard the sale as a splendid piece of promotion work for their herd that is bound to bring future custom to their ranch. Perhaps the most disappointing feature was the lack of appreciation shown for some of the better things, several of which had very successful show records to their credit.

A. F. Hayes, Edenvale, who is just starting a herd, can count himself lucky in securing the attractive senior yearling heifer, Carnation 4th, for $600, and the good young herd bull prospect, Sir Blanchard 2d, for $700.

Alec McDonald, acting for the University Farm, made two fine selections in lots three and four. The Baldwin Ranch, Pleasanton, got one of the best values of the auction in lot 2.

S. H. Cowell of San Francisco, wealthy cement manufacturer who is establishing a herd on a ranch near Perkins, Sacramento County, was the heaviest buyer, taking an even two dozen females and the good young bull Blanchard Jr.

C. B. Orvis of Stockton continued his buying and took seven females. Tooby Bros. of Eureka made their start with four females and the very excellent young bull Blanchard 6th. Ketcham Bros., La Grange, made their initial purchases and got four females. Dr. T. H. Stice of Napa was another to make his debut in Hereford circles and four good ones fell to his bid. A. E. Nourse of Capay laid a new foundation with the purchase of four heifers.

The sale was managed by C. L. Hughes of the California Breeders' Sales and Pedigree Company, Sacramento. H. L. Hull of Des Moines, Iowa, was on the block and John A. Bunting and John A. Davis passed up the bids from the ring.

FEMALES

1, Carnation 4th, Sept. 1919; A. F. Hayes, Eden Vale, $600.
2, Aurora 2d, May 1920; Baldwin Ranch, Pleasanton, $450.
3, Nevada 5th, Nov. 1919; University of California, $375.
4, Hortensia 9th, Oct. 1920; University of California, $240.
5, Artemesia 4th, Mar. 1920, S. H. Cowell, San Francisco, $220.
6, Starr 8th, Mar. 1919; Oliver Ketcham, La Grange, $260.
7, Imperial Lass 2d, Sept. 1919; C. B. Orvis, Stockton, $200.
8, Benign 3d, Sept. 1919; S. H. Cowell, $235.
9, Bat 3d, Oct. 1919; Tooby Bros., Eureka, $130.
10, Beck 3d, Sept. 1919; Dr. T. H. Stice, Napa, $225.
11, Desdemona 2d, May 1919; S. H. Cowell, $250.
12, Bedew 3d, Sept. 1919; Tooby Bros., $160.
13, Cleo 6th, Sept. 1919; Tooby Bros., $205.
14, Electra 2d, Sept. 1920; S. H. Cowell, $175.
15, Louise 7th, Aug. 1919; Dr. Stice, $210.
16, Lemele 2d, Aug. 1919; A. F. Hayes, $200.
17, Lorna Doone 9th, June 1919; C. B. Orvis, $205.
18, Belle, July 1920; S. H. Cowell, $175.
19, Clover 6th, July 1920; S. H. Cowell, $175.
20, Starr 9th, May 1920; A. E. Nourse, Capay, $180.
21, Circe 7th, May 1920; A. E. Nourse, $180.
22, Babe, July 1920; S. H. Cowell, $175.
23, Lucina, Oct. 1916, and C. C.; Dr. Stice, $380.
24, Otero, May 1919, and C. C.; M. C. Hurbut, La Grange, $235.
25, Louise 2d, Sept. 1914 and C. C.; Ketcham Bros., $360.
26, Bandle, Mar. 1914; S. H. Cowell, $200.
27, Benign, May 1914; S. H. Cowell, $200.
28, Katherine 3d, Apr. 1919; and B. C.; S. H. Cowell, $275.
29, Eulalie 2d, Mar. 1916; S. H. Cowell, $200.
30, Bangle, Mar. 1914, and C. C.; S. H. Cowell, $200.
31, Honora 2d, Apr. 1914, and B. C.; Dr. Stice, $360.
32, June 2d, Apr. 1919, and C. C.; S. H. Cowell, $200.
33, Bewitch, June 1914, and B. C.; S. H. Cowell, $250.
34, Juniaetta 2d, Sept. 1914, and B. C.; Ketcham Bros., $260.
35, Agatha, May 1912, and B. C.; Oliver Ketcham, La Grange, $300.
36, Electra, Dec. 1916, and B. C.; S. H. Cowell, $200.
37, Bander 2d, Feb. 1920; S. H. Cowell, $220.
38, Bonnie Lass 14th, May 1914; S. H. Cowell, $220.
39, Columbia 10th, May 1920; S. H. Cowell, $220.
40, Bazar 3d, July 1919; S. H. Cowell, $235.
41, Backslider 3d, Oct. 1919; S. H. Cowell, $235.
42, Isis 3d, Sept. 1919; C. B. Orvis, $150.
43, Bessie, Sept. 1919; C. B. Orvis, $180.
44, Basal 3d, Nov. 1919; S. H. Cowell, $225.
45, Rosie 2d, Apr. 1919, and C. C.; S. H. Cowell, $250.
46, June 4th, Apr. 1920; A. E. Nourse, $180.
47, Bassoon, Apr. 1920; A. E. Nourse, $180.
48, Bernardine 4th, Mar. 1920; C. B. Orvis, $195.
49, Ailsa Page 3d, Feb. 1920; S. H. Cowell, $175.
50, Agatha 4th, Aug. 1919; Tooby Bros., $240.
51, Bechance 3d, Sept. 1919; C. B. Orvis, $235.
52, Bassett 2d, Apr. 1919; S. H. Cowell, $220.
54, Bawd, Mar. 1914; C. B. Orvis, $260.

BULLS

53, Blanchard 6th, Nov. 1920; Tooby Bros., $450.
55, Blanchard Jr., Apr. 1920; S. H. Cowell, $700.
56, Sir Blanchard 2d, Mar. 1920; A. F. Hayes, $700.

Bargains Prevail in the Morris Sale

It has long been held that Opportunity knocks at one's door but once. That the above dictum does not always hold was conclusively demonstrated at the recent sale of Holsteins from the A. W. Morris & Sons' herd. Opportunity not only knocked once but knocked 44 times—there being 44 head offered and sold—and in several instances literally had to kick the door in! On mighty few occasions in the Holstein development of this state have buyers had presented to them a more desirable offering, and the fact that the 44 head established an average of but $305 indicates just how much of a picnic the buyers had. Only one explanation of such an average can be offered—the sale came at a time when the men calculated to be the heavy buyers found it impossible to be present, and a lot of others stayed home expecting that the cattle would sell too high. The day set just happened to be an off day—for the Morrises. But at that the sellers were game and took the view that they had helped materially in distributing a class of cattle that would give outstanding satisfaction to the purchasers.

The top of the sale, $575, was twice reached, once when E. F. Gleason paid that amount for Segis Woodcrest Maid with a record of 763.57 pounds of butter, and once when F. F. Pellissier bought Segis Pontiac Charlotte De Kol.

A rare lot of young bulls sired by the leading Morris herd bulls failed to bring anywhere near real value. E. Swift Train of San Francisco bought the pick for $490.

Sixteen buyers absorbed the offering. Brooks & Peckham of Reno, Nevada, were the heaviest buyers. J. M. Hampton Jr. of Live Oak, J. F. Miller of Ripon, R. A. Gardinier of Sacramento and E. F. Gleason of San Juan Bautista furnished most of the competition.

The sale was managed by the California Breeders' Sales and Pedigree Company of Sacramento. Col. Ben A. Rhoades pronounced them "sold" after Col. John A. Davis worked the ring.

Off Summer Pastures

Your animals are coming off summer pastures and going on dry feed. It's a big change. Out in the succulent pastures, Nature supplies the tonics and laxatives to keep animals in condition.

—But unless you supply these tonics and laxatives to your stock on dry feed, you are not going to get full returns from your hay, grain and fodder. Besides, your animals are apt to get "off feed" and out of fix.

Dr. Hess Stock Tonic

Supplies the Tonics—Laxatives—Diuretics

It keeps animals free from worms.
It keeps their bowels open and regular.
It keeps the appetite and digestion good.
It conditions cows for calving.
It helps to keep up the milk flow.
It keeps feeding cattle right up on their appetite.
It keeps hogs healthy, thrifty, free from worms.
It means health and thrift for all animals.

Always buy Dr. Hess Stock Tonic according to the size of your herd. Tell your dealer how many animals you have. He has a package to suit. Good results guaranteed.

Why Pay the Peddler Twice My Price?

25 lb. Pail, $3.50 100 lb. Drum, $12.00

Smaller packages in proportion.

DR. HESS & CLARK Ashland, Ohio

Dr. Hess Instant Louse Killer Kills Lice

Allwork Tractors
Allwork Tractors

AT COST

$1500.00 $1500.00 $1500.00

(Old Price $1815.00)

Never in the history of tractors has there been such an offer as this. I am offering the celebrated "AllWork Tractors" for a limited time, at cost, for the purpose of raising money for use in my business. If you contemplate purchasing a tractor you cannot afford to delay for a moment investigating this greatest of all opportunities to purchase at cost, one of these high grade tractors.

J. F. RICHARDSON

4th and Citrus Redlands, Cal.

O.U.R. Hampshire Swine

Ortega-Underhill-Rancho

Thos. T. Dinsmore, Mgr., Santa Barbara, Cal.

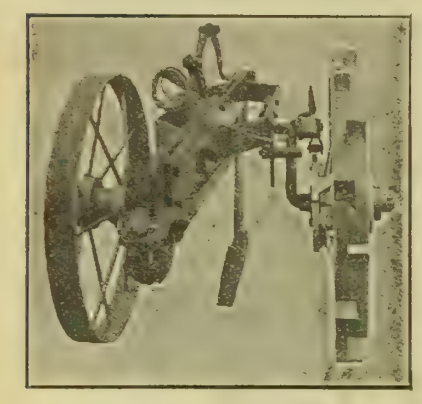
Correspondence with the advertisers in the California Cultivator will convince you that their articles will save you money.

1, Princess Aralia Walker, May 1918; J. M. Hampton, Jr., Live Oak, $380.
2, Miss Aaggie De Kol Julianna, July 1917, 622.2 lbs.; San Luis Obispo Polytechnic Inst., $385.
3, Miss Aaggie Grace Alcartra, June 1917, 617.19 lbs.; B. S. Bill, Galt, $560.
4, Ethel Pontiac Aaggie, Apr. 1917, 524.41 lbs.; D. E. Stone, Berkeley, $485.
5, Queen Johanna Alcatra Marco, Nov. 1917; Brooks & Peckham, Reno, Nev., $315.
6, Miss Beryl Abbekerk, Mar. 1919; E. Swift Train, San Francisco, $250.
7, Flossie Glista Alcartra, May 1918; J. F. Miller, Ripon, $270.
8, Sub. Miss Aaggie Riverside Burke 2d, W. J. Higdon, Tulare, $425.
5, Queen Johanna Alcatra Marco, Nov. R. A. Gardiner, Sacramento, $350.
11, Sub. Segis Margaret Mead, Oct. 1918; Brooks & Peckham, $335.
12, Lady Linwood Alcartra, Nov. 1917; G. S. Bill, Galt, $285.
13, Sub. Nydia Creamcup Mead, Nov. 1918; R. A. Gardiner, $225.
14, Contenta Aaggie Creamcup, Dec. 1917; J. F. Miller, $275.
15, Mutual Butter Girl Alcartra, June 1918; J. M. Hampton, Jr., $285.
16, May Korndyke Aralia Walker, July 1918; S. G. Kounias, Modesto, $325.
17, Maybelle Riverside Mead, May 1918; J. M. Hampton, Jr., $250.
18, Miss Blaney Pontiac Mead, Sept. 1918; Brooks & Peckham, $425.
19, Laura Netherland Alcartra, May 1918; Horace Hill, Jr., $325.
20, Lady Segis Mead, July 1918; Frank Hatch, Modesto, $195.
21, Lady Mead Alcartra, Oct. 1919; Brooks & Peckham, $290.
22, Wilhelmina Morco De Kol, Sept. 1919; Brooks & Peckham, $300.
23, Segis Pontiac Goldstone, Feb. 1918; E. Swift Train, $190.
24, Emerald Segis Burke, Mar. 1919; J. M. Hampton, Jr., $190.
25, Sub. Miss Aralia Pontiac Acme, Jan. 1918; J. M. Hampton, Jr., $310.
26, Lady Morco Walker, May 1918, 541.25 lbs.; W. Rehmke, Woodland, $325.
29, Segis Pontiac Charlotte De Kol, Mar. 1919; F. F. Pellissier, Whittier, $575.
30, Ethel Riverside Walker, June 1918; S. G. Kounias, $340.
31, Princess Glista Aaggie, Oct. 1918; Brooks & Peckham, $275.
33, Princess Korndyke Gelsche Walker, May 1918; J. M. Hampton, Jr., $285.
35, Emerald Segis Alcartra, Mar. 1918; Brooks & Peckham, $200.
51, Segis Woodcrest Maid, Nov. 1917, 763.57 lbs.; E. F. Gleason, San Juan Bautista, $575.
52, Miss Korndyke Pontiac Alcartra, Jan. 1919; E. F. Farnum, Woodland, $260.
53, Imperial Bonita Segis, Apr. 1917, 529.37 lbs.; J. F. Miller, $275.
54, Princess Pontiac Artis Netherland, Aug. 1918, 19.51 lbs.; J. M. Hampton, Jr., $350.
55, Model Netherland of Modesto, Aug. 1918, 18.69 lbs.; E. F. Gleason, $490.

BULLS

37, Sir Aaggie Mead De Kol 3d, Feb. 1920; L. N. Irwin, Davis, $190.
38, Sir Aaggie Mead De Kol 4th, Feb. 1920; R. A. Gardiner, $260.
40, Sir Aaggie Pietje Mead, Sept. 1920; E. Swift Train, $490.
41, Aaggie Glista Mead, Oct. 1920; L. N. Irwin, $180.

TOWNER'S
SUBSOIL PLOWS



Built in one, two, three and five standard sizes. Our standard plows come in light, medium and heavy weight.

Subsoilers for Every Need. Built to Fit Your Tractor—Automatic and Screw Lift.

SEE YOUR DEALER OR WRITE

H. F. Towner

Santa Ana California

IF

The Oil
You Are Using
Is as Good as

PUENTE

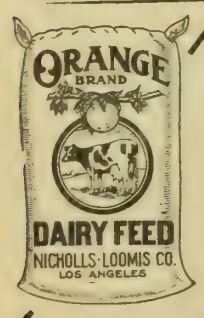
"APEX" Motor

OIL

Then Don't Worry
IF NOT,
Let's Talk Business

Puente Oil Co.

"Dependable Oil Products"
HIGGINS BLDG., LOS ANGELES



COWS

Thrive on Orange Brand Dairy Feed

Orange Brand Dairy Feed contains a large variety of grains, and they are all grains that appeal to the dairy cow's taste.

It is rich in protein, and produces a large flow of milk. It supplies an abundance of milk-making materials and nourishes the milk-making organs.

Guaranteed not to contain any screenings, free hulls or sweepings.

Write for booklet "Why Some Feeds Produce More Milk Than Others."

Nicholls-Loomis Co.

2505 Santa Fe Ave., Los Angeles, Cal.

Pull 'Em Quick at Low Cost

Then Make Big Money Pulling Stumps for Others

Pull out your old stumps and hedges. Make every foot of your richest soil grow money-making crops. Then make big money pulling stumps and hedges for others. Write and get my price on our new improved **Hercules Stump Puller**—the fastest, easiest, cheapest land clearing machine ever made. Yanks 'em out, big or little, quick and clean. Easy to operate and move. Both horse and hand power machines. **$10.00 down—easy payments.**

"Made $62.50 in 3 days," writes one owner. Send today for Hercules catalog and Special Folder. Ask for Catalog No. T-28.

$10.00 Down
Easy Payments

B. A. FULLER, Pres.
HERCULES MFG. CO.
Centerville, Iowa

R. N. Clapp Sale

By Jack Klein

The biggest sale of Holstein cattle held in Southern California this year and one of the biggest ever held in the state was the R. N. Clapp sale at Hynes on October 21. Ninety-nine head of exceptional Holsteins passed into new hands at an average price of $420 a head. The total for the sale was $41,645.

Mr. Clapp had made some very fine records with these cattle and the larger part of them were excellent individuals. The majority of the females were bred to King Segis Pontiac Aero, the senior yearling son of King Segis Pontiac out of Evelina Calamo Korndyke, a great show cow. The wonderful show qualities of a large proportion of the offering helped the sale materially. Had they been sold a year or so ago in times of more money they would have brought double the amount and would have been worth it.

The top of the sale was the heifer Rosamaines Korndyke Beauty, who is making a great milk record as a senior yearling. In her first 180 days she was over 4,000 pounds above the present world's record heifer for the same time. She was in demand but was finally knocked down to Fred Hartsook of Lankershim for $3,000.

J. W. Snodgrass of Hueneme was on the job all day long buying calves for the Ventura County Calf Club and occasionally bidding in a good one for the Berylwood Stock Farm, of which he is manager. He paid $2,100 for the sweet two year old K. S. P. Joy May Beets, who was second in a strong class at Riverside. Mr. Snodgrass purchased 26 head in all and his selections for the calf club were excellent youngsters and at a price which few breeders would have accepted at home.

The great old cow Gerben Abbekerk Maid, who is considered one of the real foundation cows of the breed, went to the Maxwell Farms for $825. This old matron, who has twice made 34 pounds of butter in seven days, is making the biggest record of her career and will undoubtedly finish with over 30,000 pounds of milk for the year. Because some of the buyers had not arrived at the time the Maxwell Farms were able to buy the 31-pound cow Sharon Rose Norena for $500 early in the sale. This was one of the biggest bargains of the day.

Fred Hartsook secured a number of good cows, including Rosamaines Pontiac Gold Drop for $1,500, Nancy Calamo Korndyke for $1,450, and the great show cow Segis Walker Gelsche for $600.

Carl Ray of Lankershim and Perle Penrose of Pomona also bought a number of good ones.

The sale was handled by Chas. L. Hughes of the California Breeders Sales and Pedigree Company, and Col. Ben A. Rhoades was on the block. Considering the fact that a great many of the animals were below a year in age the average was remarkable for the times.

Following is a list of the higher priced animals and their buyers:

BULL

K. S. P. J. Count, E. G. Stinson, Orange, $435.

FEMALES

Rosamaines Korndyke Beauty, Fred Hartsook, Lankershim, $3,000.
Rosamaines May Korndyke, Perle Penrose, Pomona, $775.
Gerben Abbekerk Maid, Maxwell Farms, $825.
Aralia Maid, Maxwell Farms, $410.
Abbekerk Pontiac, Carl Ray, $825.
Syacres Ormsby Abbekerk Pontiac, Berylwood Stock Farm, $325.
Rosamaines Pontiac Gold Drop, Fred Hartsook, $1,500.
Sharon Rose Novena, Maxwell Farms, $500.
Rosamaines Rose Novena, W. B. Naugle, Santa Paula, $415.
Syacres Novena Netherland Segis, Fred Hartsook, $300.
Segis Walker Gelsche, Fred Hartsook, $600.
Pearl Walker Segis, Fred Hartsook, $400.
Nancy Calamo Korndyke, Fred Hartsook, $1,450.
Pearl Nancy Calamo, Fred Hartsook, $400.
K. S. P. Calamo Nancy, Maxwell Farms, $500.
K. S. P. Lucy Wayne, Hartsook, $500.
K. S. P. Queen Lucy, Maxwell Farms, $450.
Stanislaus Piebe Laura Pontiac, Carl Ray, $975.
Syacres Piebe Segis Pontiac, Charles Anderson, Burbank, $600.
K. S. P. J. Floria Canary, Ventura Calf Club, $275.
K. S. P. J. Novelty Pauline, W. B. Naugle, $275.
Lida DeKol Mechthilde, A. Zangl, Bellflower, $260.
Pearl Ertel, Ventura Calf Club, $225.
Pearl Pietertje Segis, Ventura Calf Club, $250.
Pearl Aaggie Hengerveld, Ventura Calf Club, $275.
Pearl Segis Again, E. Babcock, Riverside, $335.
Pearl Pride Dione, J. O. Fumey, Pomona, $290.
Pearl Countess, Ventura Calf Club, $250.
Hartwood Netherland Segis, Berylwood Stock Farm, $800.
K. S. P. Queen Pearl, Charles Anderson, $450.
K. S. P. Queenie, Maxwell Farms, $325.
Pearl Queenie, Ventura Calf Club, $240.
Rosamaines Colantha Zozo, W. S. Wheeler, Arcadia, $385.
Syacres Ormsby Zozo, Berylwood Stock Farm, $200.
K. S. P. Polkadot Beets, Carl Ray, $435.
Syacres Pearl Polkadot Beets, Ventura Calf Club, $200.
K. S. P. Prilly Mercedes, Carl Ray, $400.
Syacres Pearl Prilly, Ventura Calf Club, $250.
Minita Segis Pontiac, Berylwood Stock Farm, $1,050.
K. S. P. Mooie Diploma, Maxwell Farms, $350.
Pearl Diploma, Ventura Calf Club, $225.
Pearl Clothilde Lilith, Berylwood Stock Farm, $525.
Evelina Pearl Segis, Fred Hartsook, $575.
Pearl Joy Mabel, S. Holderness, Nestor, $210.
Pearl Tula Korndyke, Perle Penrose, $280.
K. S. P. Princess Hengerveld, George E. Walter, El Monte, $300.
Calamo Princess, E. R. Stalder, $200.
K. S. P. Clorinda Artis, E. R. Stalder, $315.
K. S. P. Queen Artis, C. L. Ostergard, Hyde Park, $300.
Pearl May Beets, James J. Jeffries, Burbank, $350.
K. S. P. Joy May Beets, Berylwood Stock Farm, $2,100.
Joy May Calamo, Mrs. H. Halff, Los Angeles, $210.
Rosamaines Rowena, Earl Graham, $700.
Wakefield Segis Chicago Duchess, W. B. Naugle, $410.
Pearl Chicago, Berylwood Stock Farm, $250.
S. P. Wa Wa, F. E. Voorhees, Inglewood, $430.
Pearl Benla Segis, Ventura Calf Club, $285.
Wakefield Segis Chicago Boon, E. R. Stalder, $600.
Novena Cara Mia, Earl Graham, $1.800.
Aralia Pontiac, Earl Graham, $625.
Evergreen Beauty 2nd, Carl Ray, $350.
Lakeview Johanna Korndyke, E. R. Stalder, $275.
Scenic Pietertje Colantha, O. E. Bowen, Pasadena, $245.
K. S. P. Adele Queen, George Walter, $290.
K. S. P. Lady Una, Maxwell Farms, $300.
K. S. P. Queen Veeman, Carl Ray, $400.
Pearl Veeman, Ventura Calf Club, $250.
Pearl Susie, Albert Pfeiler, Oxnard, $250.

K. S. P. Osma Johanna Segis, F. E. Voorhees, $400.
Pearl Johanna Osma Segis, J. Holderman, Santa Paula, $230.
K. S. P. Clothilde Lady, Maxwell Farms, $800.
Pearl Clothilde Segis Pontiac, Carl Ray, $250.
Pearl Woodcrest Pontiac, Berylwood Stock Farm, $300.
North Side Bos Butter Girl Korndyke, Mrs. J. Shilling, Hynes, $330.
Uneeda Roderick Beryl, E. R. Stalder, $200.
Visalia Princess Tritomia, F. E. Voorhees, $250.
Whittier Pontiac 3rd, Mr. McLinn, $310.
Rosamaines Minita, Hartsook, $400.

Edgemoor Farm Sale

By Jack Klein

For the first time in its history Edgemoor Farm, near San Diego, held a sale of Guernseys in its home state. Previous sales held by this farm have been in the East. Realizing the demand for Guernseys out here, Mr. Dupee made up a sale of young heifers bred to his great herd bull, Masterpiece of Edgemoor, principally for the benefit of the men in this state who need Guernseys. The sale was well supported and the average of $378.50 on 37 heifers was a good one. Many of these heifers were bred recently, and while a calf was guaranteed they will have to be carried for some time.

Adohr Stock Farm of Van Nuys, which has heretofore bought only bulls in the sales, stepped out and purchased some pure bred females, paying the top price of the sale for a two year old granddaughter of Governor of the Chene.

A score of purchasers snapped up the offering in short order, showing that Guernsey cattle are in demand.

The sale was conducted by the California Breeders Sales & Pedigree Co., and Col. Ben. A. Rhoades did the selling.

The Italian Vineyard Company, which is getting together a nice little herd, was one of the heavy purchasers and the Chaffey High School took a number.

The sales list follows:

FEMALES

Lily Saracen of Piedmont, M. H. Anderson, Santa Paula, $435.
Saracen's Tritoma, G. T. Drinkwater, $435.
Tritoma D., G. T. Drinkwater, $535.
Alpha's Omega of Burnham Acres, Adohr Stock Farm, $560.
Edward's Nancy, Italian Vineyards Co., $310.
Golden Princess of Rosemaple, Wikiup Ranch, $310.
Old Times Queen, Loring Farnum, $295.
Karolie's Marcella, Wikiup Ranch, $435.
Sallie's Butter Queen, Loring Farnum, $285.
Old Times, Wikiup Ranch, $325.
Royal Catania, Dorothy Fried, Chatsworth, $440.
May Queen's Ivy, Loring Farnum, $250.
Lucy of Beirnetown, Wikiup Ranch, $375.
Minnie of Beirnetown, Italian Vineyard Co., $450; Joy of Beirnetown, Dorothy Fried, $400.
Starlight of Beirnetown, Chaffey Project Farm, Ontario, $350.
Governor's Primrose of A. D. F. 2d, Wikiup Ranch, $400; Esther of Beirnetown, Ford's Farm, Redlands, $390.
Daisy Rita of A. D. F., Ford's Farm, $425.
Birchwood's Aurora, Charles Hartog, $310.
Violetta of the Lewis Farm, G. T. Drinkwater, $310.
Hero's Eva of Beirnetown, G. T. Drinkwater, $525.
Ellen of Beirnetown, A. G. McLouth, Los Angeles, $410.
Lillia of Vavarino, Italian Vineyard Co., $525.
Golden's Miss Daffodil, Italian Vineyard Co., $450.
Little Fantine of Lewis Farms, Adohr Stock Farm, $500.
Crackerjack's Fair Lass, Loring Farnum, $350.
Dello Mento of the Lewis Farms, Blackwood & McIntosh, $255.
Polly of Beirnetown, Blackwood & McIntosh, $285.
Cleland Bella, Chaffey Project Farm, $325.
Buckeye Irene of Mara Alva, Italian Vineyard Co., $300.
Esme of Warsaw, Wikiup Ranch, $410.
Telka of Warsaw, Charles Hartog, $360.
Bess Van Tassel, Charles Hartog, $275.
Butter Girl of Guernsey Home Farm, Charles Hartog, $285.
Lady Violet of Maple Grove, W. M. Miller, Lakeside, $340.
Birchwood's Tthelone, Charles Hartog, $385.

MALES

Corium Burnett, P. Cattani, Bakersfield, $225.
Corium Badger, W. J. Tench, Mentone, $300.
Corium Barker, Italian Vineyard Co., $210.
Corium Bruno, P. J. Dolan, Los Angeles, $130.
He's Jake, Blackwood & McIntosh, $130.
Lone Tree Starlight Beau, H. E. Rudd, Gardena, $150.
Lone Tree Royal, Blackwood & McIntosh, $160.
Birchwood's Aaron, A. E. Messer, Los Angeles, $150.
Birchwood Alford, Carl Shepherd, Compton, $130.

Livestock News Notes

Gardiner Blackman of Long Beach reports the sale of Poland China gilt, Countess Prescott, to Ralph Stokes of Long Beach. Gardiner claims this gilt is an exceptional individual weighing 240 pounds when five months old, with all possibilities of passing the 300 pound mark at six months. She has gained an average of two pounds a day since she was two months old, during which time she has been on a self feeder.

The Bridgford Holsteni Co., Patterson, has sold the senior bull calf, Sir Pontiac Segis Prilly, junior champion at the recent San Francisco show, to E. F. Gleason, San Juan Bautista. This youngster was sired by the many times champion, King Segis Alcartra Prilly, and is out of Woodbine Rosa Pearl.

The Gibson Holstein Co., Williams, announces the recent completion of one of the best Holstein records of the year by the aged cow Aaggie Korndyke of Nevada. According to Gion Gibson this nine year old cow has to her credit in 365 days 30,600 pounds of milk. The final figures for her butter production have not been received but it is expected that she will be credited within a few pounds of 1300 pounds. Aaggie Korndyke of Nevada was sired by Woodcroft Pontiac Korndyke, a son of Pontiac Korndyke, and her dam was Leda Hartog Queen Pietertje.

Henry Bates Perrin of Santa Ynez has purchased the Tamworth boar, K. S. Rival, junior champion at the National Swine Show last year.

Shortly before the San Francisco show Mrs. Romie C. Jacks of Monterey visited a number of the leading Hereford herds near Kansas City and selected a number of young things to add to the Imperial herd. From the Velie herd Mrs. Jacks selected the junior yearling show heifer, Phyllis Velie by Kenilworth. From the 1921 show herd of the Turner Lumber Co. she selected the senior bull calf, Laurel Perfection 2d. From the T. R. Early herd Mrs. Jacks secured a bull calf and four heifers sired by The Anxiety, a son of Beau Mischief, Jr. Mrs. Jacks also purchased an outstanding saddle stallion and a high class show mare from the noted Longview stables at Lees Summit.

Thos. T. Miller of Hollister has leased to the University of California the Shorthorn bull, Milmar Sultan. Milmar Sultan was sired by Mr. Miller's imported bull, Secret Stamp, and has for his dam the former show cow, White Mayflower. White Mayflower, it will be recalled, is a daughter of Sultan Mayflower, the bull formerly at the head of the college herd and regarded as one of the best sires ever in this state. Milmar Sultan was second in class at the San Francisco show.

J. A. Robson, general manager of the Associated Dairymen of California, died in a San Francisco hospital November 3 following a very brief illness. Robson was formerly a New York newspaper man and prior to taking up his work with the dairy organization served as superintendent of publicity for the 1920 state fair.

After missing last year the University of California will again be represented at the great International Livestock Show at Chicago this month. The institution will exhibit five steers, about 20 fat wethers and a number of pure bred barrows. In addition to the above stock the institution will show the junior yearling Shorthorn heifer, Mary Ann Rush, junior champion at San Francisco. On the whole the college exhibit is regarded as the strongest yet sent East and it is expected that new fame will be won for California.

R. A. Gardiner of Isleton has purchased the entire herd of registered Holsteins established about a year ago by William Dreher of Sacramento. Included in the herd are many exceptionally well bred cows with splendid production records. It is Mr. Gardiner's plan to install his new herd on a ranch near Isleton.

Representatives of the Kern County Land and Cattle Co. and the Jerome O'Neil ranch have been extensive buyers of Hereford bulls from breeders of the Kansas City district. As yet California breeders are unable to supply the demand for bulls on the part of local range outfits.

W. S. Guilford of the Butte City Ranch, Butte City, has sold his entire crop of Shorthorn bulls to the Merritt-Bowers Co. of Tulare. Guilford states that there is a keener demand for range bulls than he has experienced for several years and that apparently California range operators who have been staying out of the bull market for some time past are finding it necessary to restock this fall.

California Shorthorn breeders are looking forward with a great deal of interest to the sale to be held by Dr. H. M. Elberg of Woodland. This will be the second public sale offering made from the Roselawn herd and will feature the get and service of the white bull, Roselawn Champion. There will also be included a number of daughters of Village Beau, one of the best sons of Villager. About half the offering will consist of well known Scotch families. The sale is in no sense a dispersal but is made necessary through the growth of the herd to a point where there are not sufficient accommodations for it. The sale will be held at the beautiful Roselawn Farm adjoining Woodland and will be managed by the California Breeders Sales and Pedigree Co.

The forthcoming sale by members of the San Joaquin County Holstein Breeders Association will provide one of the last opportunities to select registered Holsteins at public auction this fall. The offering will be made up of consignments from the herds of J. M. Campbell, Escalon; R. Stevens, Stockton; J. C. Ramsey, Modesto; Edwards Bros., Escalon, and Salfield & Condon, Escalon. Sales Manager Hughes states that the various consignments are unusually attractive from both the standpoint of breeding and individual quality. Cows with records up to 32 pounds of butter and over 700 pounds of milk in seven days appear in the catalog.

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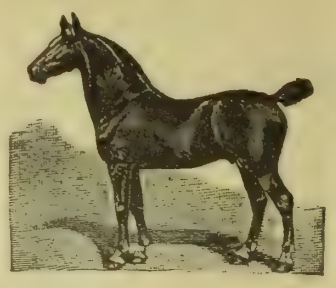

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California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager, Sacramento, Cal.

Better Breeding and Feeding California's Beef Problem

By R. M. Hagen, Secretary, California Cattlemen's Association

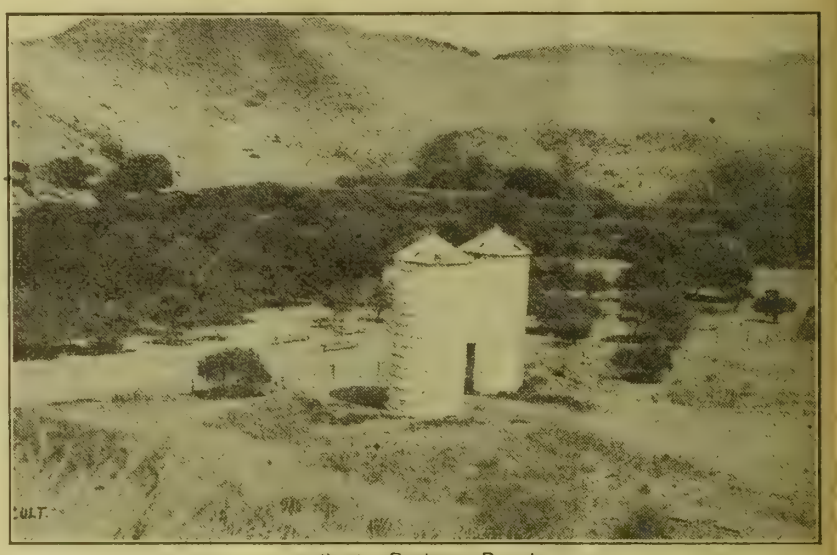
THE present price of beef cattle is causing the cattlemen to do a great deal of serious thinking. More committees have been appointed during the past 12 months to work out plans for the marketing of cattle than for many years previous.

So far as the Western states are concerned, the problem of marketing cattle is a very complicated one. In the first place the 12 Western grass feeding states produce one-third of the cattle, while at the same time they contain only one-tenth of the population of the United States. In other words, a large proportion of the cattle are produced in an area considerably removed from the big centers of population and consumption. Unlike many other commodities it is almost impossible to control a large percentage of the supply of cattle because they are produced in practically every state in the nation and in practically every county in California. With the center of production so far removed from the point of consumption the item of transportation is a very serious one at the present time with railroad rates practically double pre-war normal.

In California one of the most serious marketing problems is the glutting of the market at certain seasons of the year, and this fact brings us to a discussion of the real solution of the marketing problem.

Some time ago at a cattlemen's meeting at Salinas, H. A. Jastro, formerly president of the California Cattlemen's Association, again repeated the statement which he has made hundreds of times to California cattlemen. He stated that our cattlemen will not be entirely successful until they operate on a business basis, breed their own stock cattle rather than bring in feeders of inferior quality from outside the state, understock their ranges, feed in order to have fat prime cattle at all seasons of the year, and market their product in a scientific manner. In Mr. Jastro's advice to so feed that prime cattle may be available at all seasons of the year lies the solution of the marketing problem. This would avoid gluts at any one season of the year, and a more uniform price would exist. Unfortunately too few of our cattlemen really know what prime steers are. Not until they reach the market and come in competition with well fed cattle from other districts do they realize the different grades which go onto the market. The cattleman who watches the market quotations at northern and eastern points and is then disappointed with the price received for his cattle on those markets must learn that he is competing with cattle which are carefully fed and prepared for those markets by men who have had many years of experience in feeding to sell on a quality basis.

The other day I was talking with a group of cattlemen in Northern California. One of them told of his experience in taking a load of steers, of which he was very proud and which he considered of very high quality, to the Portland market. His steers were placed in a pen, and while he was away getting his lunch two loads of grain fed steers were brought into the yards from another state and placed on either side of his pen of cattle. He states that on his return he was almost ashamed to admit ownership of his cattle, and in fact he would almost have bet good money that they did not belong to him. This was splendid education, but unfortunately it came too late for that particular lot of steers. That cattleman, however, knows what different grades of cattle mean, and he knows that quality counts on a market where cattle are sold according to grades.



A Santa Barbara Ranch

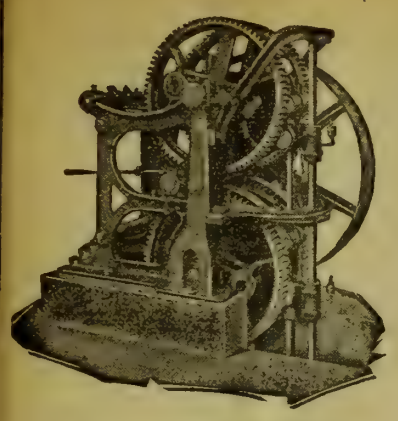
Too few California cattlemen deem it necessary to feed other than grass and fewer still appreciate the value of better bulls. Top prices are only paid for top cattle—well bred and well fed.

The United States department of agriculture has recently published an article in which is the following statement: "Only about one steer in every 200 of those going to market is graded as 'prime'; animals designated as 'choice' are estimated to occur only four times in 100. Steers graded as 'good' comprise 22 per cent, or between one-fourth and one-fifth of the whole. The third, or 'medium,' grade is most numerous, making more than one-half (53 per cent) of the total. 'Common' steers make up one-sixth, or 17 per cent, while 'canners,' the riffraff of the steer family, it is satisfactory to note, are not numerous, being only 3½ per cent of the total. Yet this class during 1920 was about seven times as large as 'prime.'

"On the basis of 100 points as the relative quality of a 'choice' steer based on price to the producer, the figures show that a good steer returned in cash approximately 85 per cent as much; a 'medium' steer 67 per cent as much; a 'common' steer 53 per cent as much; and a 'canner' only 34 per cent as much. Put in a more concrete way, if we assume that a 'choice' 1,000 pound steer sells for $150, steers of the same weight in the other classes would sell as follows: Good, $127.50; medium, $100.50; common, $79.50; canner, $51. Of course, it is realized that a steer of the 'canner' grade seldom weighs as much as 1,000 pounds, and not many of the 'common' grade reach that weight. So in actual practice inferior animals bring even less per head than the prices given.

"When these differences are applied on about 6.000.000 steers which are annually slaughtered, it can easily be seen that there are great possibilities to stock feeders in regard to increased cash turnover and profits.

"The question may be asked, What is the principal factor that determines the quality or grade of a steer and so fixes the corresponding high or low price which accompanies the market rating? . . . Without doubt the skill of the feeder and the character of the feed count for much, but the best feed in the world, no matter how skillfully applied, cannot make a market topper out of a typical scrub steer. There-



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fore, it is the opinion of department specialists that the dominating influence in determining class in the stock yard pen, as well as in the show ring, lies in the breeding of the animal."

"Some observant person might challenge this conclusion by saying, 'I noticed that in carcass competition at the big shows the championship frequently has been carried off by crossbreds; how, then, can it be a question of pure bereding? . . . If the records in such a case are examined it will be found that back of the crossbred there was carefully selected breeding on both sides, and in reality it was this pure breeding in the sire and dam that was the dominant factor in winning the championship."

Like most other problems the problem of marketing cattle must be solved on the home ranch by producing a high quality product. There is always a demand for the best.

The recent census figures show a very surprisingly small number of pure bred sires used in the state of California. With the increased number of splendid herds of pure bred beef cattle being established here there is no excuse for the continued use of inferior sires. Pure bred stock is cheaper today than it has been for some time, and this is a splendid opportunity for the cattleman to provide himself with good bulls for his breeding herd for the coming year.

TO DETERMINE MERIT OF HOGS BY EXPERIMENTAL BREEDING

Although there is a higher percentage of purebred hogs in the country than of any other class of livestock, there is still much room for improvement. And there is much to be known concerning the relative merits of scrubs, crossbreds, and purebreds. To make some of the points clearer the animal husbandry division of the United States department of agriculture is starting a breeding and feeding experiment that will contrast the results of using scrub, crossbred and purebred boars on scrub and crossbred sows. If appropriations provide sufficient money it may be that the effect of using crossbred and scrub boars on purebred sows will be studied.

Ten crossbred sows, of various breed mixtures, and ten scrub sows of the razorback kind will be used. Half of each of those groups will be bred to a purebred boar; half of the first group will be bred to a crossbred, and half of the other group will be bred to a scrub. This same scheme of breeding will be carried on from generation to generation. Some of the offspring will be fed out and some of them will be kept for breeding before being fed out. Shoats from the different lots will be put in feed lots together and fed alike so that a fair comparison can be made. Some of these scrubs and crossbreds will be compared in feeding trials with purebreds raised on the department's experimental farm at Beltsville, Maryland. Some will be put into different experimental lots on various feeds.

Nearly everybody thinks the purebred is superior to the scrub, but there is disagreement among farmers about the merits of purebred and crossbred feeders. The department hopes that in due time its experiments will give results that will answer any doubts.

SNEEZE WEED POISONOUS TO SHEEP

A plant poisonous to sheep on the ranges, and for which no practical method has been discovered either for eradication or for cure of the resulting disease, is desscribed in a recent bulletin of the United States department of agriculture. The weed is most troublesome in Utah, Colorado, Arizona, and New Mexico, and in the eastern half of southern California, as well as in scattered areas in eastern and western Nevada, southeastern Oregon, southeastern Idaho, and northwestern Wyoming.

It was first reported to the department in 1903 that a mysterious disease, characterized by vomiting, wasting away, and death, was attacking sheep in Utah. The disease was at first attributed to Zygadenus (death camas), but several years later department botanists observed that sneeze weed was usually found on ranges occupied by the affected sheep. Subsequent experiments covering five years fastened responsibility upon the sneeze weed. No effective remedy has been found, and sheep which do not die retain symptoms as long as two or three years.

The weed is a strong perennial, growing to a height of 1 to 3 feet, with one or several stems. The plant, when young, is often hairy or woolly, particularly the stems. There may be one or several flower heads, which are 2 to 3 inches broad with ray flowers of an orange color. The seeds are numerous and hairy. The plant occurs at elevations of 5,200 to 12,000 feet. Its best habitat is on sunny slopes of the southern spruce belt in moist and in well-drained soil. From the color of the flowers it is sometimes called "yellow weed", and some stockmen call it sunflower, but in Utah it is most commonly known as sneeze weed.

The weed seems impracticable of eradication. Digging out costs about $40 an acre, and cutting with a scythe only stimulates growth. Department scientists, therefore, see the only relief in acquainting stockmen with the appearance and character of the plant and warning them to keep their sheep away from infested areas.

MINERAL FEEDS FOR MILK COWS

Widespread interest in the use of mineral substances in dairy feeds has recently deevloped. This is due to more general recognition of the fact that heavy milk production causes consistently large losses of calcium, magnesium and phosphorus from the animal skeleton. Attempts have been made to replace or prevent these losses by feeding mineral mixtures of the needed elements. An animal possibly can make use of a very small part of certain minerals. However, the indifferent responses obtained in these experiments to the intake of large amounts of these elements indicates that the selective improvement of the cow for milk production has outreached her capacity to digest mineral nutrients.

Heavy milking cows deplete their skeleton supplies of calcium and phosphorus to a greater extent than the other elements. It is possible to furnish an adequate amount of these two elements as they are naturally present to a considerable extent in certain feeding stuffs. And the amount of phosphorus or calcium which an animal will assimilate or even tolerate when added to the ration as a soluble or insoluble mineral is much less than will be acceptable in its natural relationship in feedstuffs.

Cowpea hay contains larger amounts of calcium, phosphorus and other mineral elements than other hays: legumes as a class contain more of the mineral elements than other forage crops. In the following table cowpea hay and alfalfa may be compared with timothy hay for lime and phosphoric acid content:

	Lime Per Ct.	Phos. Acid Per Ct.
Cowpea hay	2.5	.56
Alfalfa hay	1.4	.50
Timothy hay	0.23	.25
Peanut meal	0.09	.45
Cottonseed meal	0.36	2.70

Feeds grown in limestone regions contain more lime and phosphoric acid than the same feeds grown on soils poor in these elements. Heavy fertilization with phosphates likewise adds to the amounts of the elements built up into the plant.

While lime is abundantly supplied by legume hays, phosphoric acid is relatively deficient, and concentrates which contain large amounts of it should be selected for feeding with the hays. Cottonseed meal answers this purpose very well, as does also wheat bran; both of these contain only small percentages of lime. Peanut meal, and in fact all leguminous seeds, are deficient in mineral constituents.

Cottonseed meal and peavine hay deserve an important place in rations for cows on high milk production on account of the supplementary value of their mineral nutrients.—F. H. Smith, Chemist, Georgia Experiment Station.

Eighty-three Illinois farms with scrub cattle cleared an average of $234 a year, while 124 farms with pure breds made $1,102.

A man with scrub cattle is like a builder with bad lumber.

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For Sale—Sturdy Plants of pansies, violets, stocks, snapdragos, sweet williams, cosmos, baby primroses, foxglove, canterbury bells, columbine, verbena. Postpaid, 50c per dozen. The Hopkins Nursery, 163 S. Hartwick Ave., Eagle Rock, Cal.

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Strawberries Six Months in the year. Plant Everbearers, Superb, Progressive; $2.00 hundred. EVERBEARING RASPBERRIES six $1.00. Inspected. Fred Leissler, Route 6, Seattle, Washington.

For Sale—Cabbage Plants—L. C. Johnson, plant and vegetable grower and shipper, 795 W. 7th St., Pomona, Cal. Phone 2987.

Cory Thornless Blackberry Extra Large Plants, ready; 12 $2.40; 24 $4.40 postpaid. Illustrated price list. Write Chas. E. Mortenson, Route 1, Lodi, California.

500,000 Grape Rootings, 25 kinds. Order quick—75 per cent of wine grape rootings now sold. Box 501, Fowler, California.

Alfalfa Seed — Certified Hairy Peruvian, Smooth Peruvian, Common. Write for samples and prices. Delta Seed & Feed Co., Yuma, Arizona.

Strawberry Plants—Carolinas, $1.75 per hundred. Golden Bantam popcorn 10c per pound. K. Wilhelm, Hyde Park, Cal.

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WHERE TUBERCULOSIS EXACTS THE HEAVIEST TOLL

An analysis of the accredited herd work by states shows that the greatest mount of tuberculosis exists in the astern states, notably the New England group. The per cent of reactors as greatest in New York with 17.05 er cent out of a total of 76,601 head ested. New Hampshire gave 13.15 per ent, Massachusetts 13.15, Rhode sland 12.57, Connecticut 7.91, Maryand 7.95, and Delaware 13.79. The outhern and some western states ave the least reactors, Alabama, Aransas, Tennessee, Utah and Washingon running less than 1 per cent.

In those states showing the lowest er cent of tuberculosis it is probable hat little new testing is in progress. lthough there is a great variation in he amount of tuberculosis in the difrent states, nevertheless the eastern tates have far more than the southern nd some of the Rocky Mountain tates.

California stands between the two xtremes. In years gone by this state as early recognized as an ideal area r dairying and cattle raising in genral. Its warm, uniform, balmy climate required little shelter and expense for maintaining a herd of cattle. owever, the early types of dairy ows, being crosses of wild and Spanh stock, were not high producers. In rder to improve their stock our progressive antecedents made large shipents of cattle from the east, New ork and Massachusetts being the tates chiefly patronized.—J. C. J.

PROTECTING DOMESTIC STOCK

The prevalence of foot and mouth isease in some European countries, certain sections of Asia and Africa well as in South America, has caused the United States department agriculture to institute special uarantines against importation of vestock from these places. This ystematic survey of foreign sources of breeding stock and protection against the introduction of diseased animals is annually worth millions of dollars to the livestock breeders of the United States.

Any one who wishes to import cattle, sheep, goats, swine, or other animals from any country, except Canada or Mexico, must first obtain from the secretary of agriculture a permit to be presented to the American consul at the port from which the animals will be shipped. No permits are issued for shipment from countries where rinderpest, surra, foot and mouth disease or contagious pleuropneumonia exist.

Foot and mouth disease prevailed to a certain extent in England during the past two years, but recently has been abated to an extent.

AMERICAN BERKSHIRE CONGRESS

The American Berkshire Congress will hold its annual meeting and sale at Riverside on February 20, 21 and 22. According to present indications a greater number of breeders will come to California than have ever before attended a National Congress. D. J. Bastanchury of La Habra, president of the Congress, has appointed his committees and they are leaving nothing undone to make this event the greatest in Berkshire history.—Geo. A. Stingle.

DAIRY FORCE INCREASED

Charles J. Grinsell and Earl C. Smart have recently accepted positions as junior dairy inspectors of the division of animal industry in the state department of agriculture. Mr. Smart will work in the lower end of the Sacramento Valley and Mr. Grinsell in the upper end. The addition of these men to the dairy service force will fill a large gap in the inspection work which has been badly in need of attention.

CALIFORNIA IS FREE OF TEXAS FEVER TICKS

The proclamation issued by Governor Stephens recently, revoking the quarantine against the Texas fever tick, which was established by proclamation in Tulare and Kings Counties, January 25, 1919, will be gratifying news to the public in general as well as the cattlemen of the state.

The state is now free of Texas fever tick and it is the duty of every one interested either directly or indirectly in the maintenance of tick-free cattle to lend full assistance to the state department of agriculture at all times in preventing another invasion of any part of the state by this predatory insect.

VALUE OF SMALL FORESTS

Americans have something to learn from the way in which very small areas of otherwise waste land have been made to grow timber in old world countries. Oaks, ashes, pines and other trees are planted on old gravelpits, rock piles, steep banks, edges of sloughs, roadsides, etc. If one takes up H. Jackson's "Short Manual of Forest Managment," which the University Press of Cambridge, England, publishes, he soon discovers that the care of small forests, often of but a few acres, is really an important matter for foremen and owners of land to understand.

There is a great deal now in print here in America about the best management of wood lots, shelters, windbreaks, roadsides and avenue trees, etc. We have literally thousands of otherwise well kept farms in California which very much need groups of trees for shade and shelter in every field where livestock is even turned out to pasture. Call them groves if one likes, but if rightly started they will help to furnish posts, hard woods for farm use, and fuel.

The eucalypti are less planted in these days than they were 30 years ago. Various species of deciduous hard woods are thought best in many parts of California. This matter ought to be taken up by the farm advisors of every county, and such working plans adopted that each neighborhood develops towards definite unities.—Charles H. Shinn.

HEATHS BECOMING POPULAR

For many years that fine group of shrubs known as heaths, botanically species of erica, were imported from Europe. Then began their propagation in the damper coastal regions of California, from Eureka to San Francisco and the bay region down to Santa Cruz. Now the growing territory takes in the whole state and one firm in Pasadena has grown and flowered 21 species, ranging from white to purple in color of flowers, Erica melanthera (black anthers) being the darker of the lot. One like the last in other respects has rose pink anthers. But these belong to the small flowered type. Another class has long tubular flowers, in some species two inches long. All shades of color in the range noted may be had, for the hybrid varieties are many. They thrive in all parts of the state if properly cared for. Only in the hottest and driest spots does the foliage sunburn.

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WATER RATES ADJUSTED

The Coneland Water Company, serving an irrigation area of 13,000 acres on the east side of the Sacramento River in Tehama County, has been allowed a rate of $3.50 an acre a year by the railroad commission. Present rates are $1 and $2 an acre according to the date of water contracts, the large majority of consumers paying the $2 rate. Under the contracts the amount of water agreed to be furnished was one-fifth of a miner's inch an acre. Finding that this amount was insufficient a large number of the consumers entered into a contract with the company, agreeing to pay $3.50 an acre provided an adequate amount of water was furnished and that the company would stand ready to turn over the system at any time within two years to an irrigation district at a price of $125,000. The company further agreed to spend in the meantime on permanent betterments any surplus accruing from the $3.50 rate.

TWO DESTRUCTIVE RUSTS

In a recent issue of "Science" a writer calls attention to two rust fungi that seem to possess the possibilities of great harm, but which have not yet invaded the United States.

There is a rust of peanuts widely distributed in South America, and becoming common in the West Indies. It is usually designated by the name of Uredo Arachidis, although a sample from Paraguay would indicate that it should be called Puccinia Arachidis. It has been known to mycologists since 1884, but has only very recently attracted the attention of cultivators. The second rust to which the author calls attention is Puccinia Pittieriana, which attacks potatoes and tomatoes. It was collected by H. Pittier on the wild potato in 1903 and 1904, and again in 1916 by E. W. D. Holway on the slopes of the volcano Irazu in Costa Rica. It has been mentioned also under the name of Uredo Pittieri. The author has examined specimens from Ambato, Ecuador, where it was found in 1918 both on potatoes and tomatoes.

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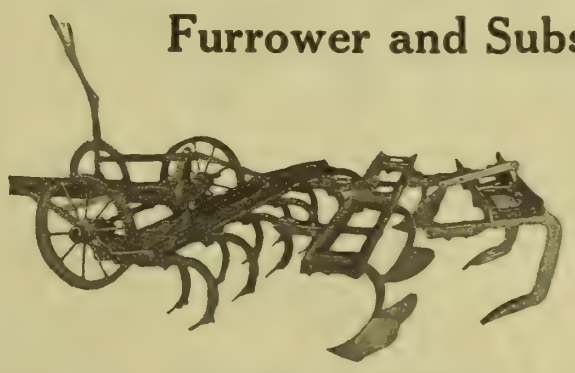

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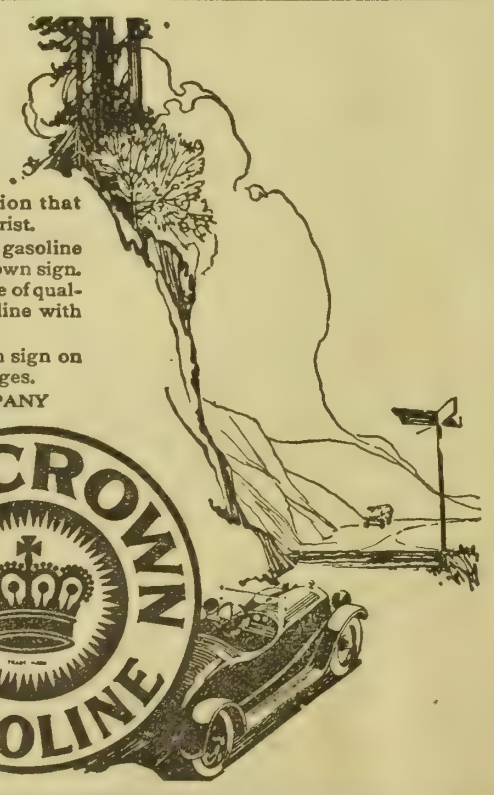

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Squabs---An Undeveloped Industry

By Jean A. Koethen

THE hero of this story is a man who besieged the Cultivator office a few weeks ago in search of information about squab raising. He didn't get much for there has been an impression prevailing the last year or so that the squab business was "a dead one" and not to be considered seriously by folks who had a living to make. Some little inquiry elicited the fact, however, that whatever its status may have been during the war, squab raising is looking up now and has possibilities. To find out just what these are I went to Mrs. Kathryn Ross of Red Wing Ranch, Glendale, one of the very few commercial pigeon breeders who have weathered the storms of the last five years.

Mrs. Ross has bred pigeons in Southern California for 11 years and knows all there is to be known about the past, present and future of the squab business. She had hardly begun to answer the questions I fired at her when who should drive into the yard but Fred S. Dixon of the Glendale Pigeon Lofts, looking for a few squabs to fill out an order. Mr. Dixon is a busy man, head of a 5,000 bird plant, and he had an order to get off. Nevertheless he sat down, and listening to the two of them at once was like taking a course in pigeon culture. I knew more about squabs when we got through than I ever expected to learn.

Feeding by Regurgitation

Possibly every Cultivator reader knows that squabs are fed by regurgitation, and this is what makes squab raising so much simpler and easier than raising little chicks. Instead of feeding the babies you feed the mother and she does the rest. The "pigeon milk" that is manufactured in her crop and stuffed by her into the crops of her two fat babies must be the most nourishing food that was ever given to a baby of any kind, for the squab doubles its weight every day at the start. After the first two weeks, when Mother Pigeon has gone to sitting again, Father Pigeon feeds the squabs. I do not understand that he regurgitates, but he does the feeding, and the little birds are expected to be ready for market before they can run around and pick up their own feed. Father Pigeon also does part of the sitting, taking his turn regularly, as a rule, Mrs. Ross says, from 10 o'clock to 3.

Income from Carneaux

Both Mrs. Ross and Mr. Dixon prefer the Carneau to other breeds for squab production. They make the best parents, the squabs are always nice and vigorous, and they are of the size which markets most readily, from 9 to 10 pounds to the dozen. "On Orange Grove Avenue," said Mr. Dixon, "they will take the squabs just as big as you can raise them, but clubs and the big markets prefer to have them weigh a little less than a pound." "If I could make squabs in a mold," declared Mrs. Ross, "and turn them out exactly as I wished them, I would make them weigh exactly 12 ounces each." The reason is just here: A squab weighing a pound dressed is bigger than the clubs can afford to serve with a dinner order, and the fashionable diner does not care for half a squab. Therefore the 12 ounce squab which can be served whole is most desirable.

What income should a pair of squabs produce? Mrs. Ross had one pair of Carneau that produced a pair of squabs every month for nearly three years. Two dozen squabs, let us say, weigh 18 pounds, and at 65 cents a pound, which is the current price, will figure up to the nice little sum of $11.70. But that pair of breeders was doubtless exceptional, and feed costs a good deal. Both Mr. Dixon and Mrs. Ross expect a pair of pigeons to produce, over and above expenses, $2.50 a year. It costs the same to feed a pair of pigeons that it costs to feed one hen, but $2.50 is better than the average hen can do.

Then there is the item of manure. Last year, from his 4,600 birds Mr. Dixon sold 14 tons of manure at $32 per ton. In previous years he has received as high as $39 per ton. One year when he kept 9,000 pigeons his income from manure was $1,000.

Begin Slowly

To go into squabs on anything like a commercial basis one would need 1,000 pair of pigeons, but it is not likely that so many pair could be purchased in the state even if it were wise for a beginner to venture so heavily.

"Begin with 20 pair of mated birds," is Mrs. Ross' advice, "and raise your own breeding stock, but be sure your birds are mated. They should be guaranteed to have raised young before you pay your money for them." Good vigorous breeders can be purchased at from $3.50 to $6 per pair, so the initial outlay is not great. A pen for the 20 pair costs about $22.50.

Tobacco Stems for Mites

Pigeons do not require the immaculate cleanliness that is necessary in poultry yards, in fact, they seem to do better when the manure is left in the nests until it must be removed to make room for the squabs. Mites must be guarded against, and this is done by the use of tobacco stems for nests. With these stems underneath the manure there is no chance for mites to breed, and the young birds are not worried by cleaning.

Feeding the Breeders

Feeding must be done always with common sense and discrimination. The birds should have all they will eat, but nothing should be left on the ground to attract mice and rats. Mr. Dixon feeds at 7 a. m. and 3 p. m., and then goes through his pens again in 20 minutes, giving a little more to those that require it. Birds that are feeding squabs need twice as much as birds that have no squabs. Mrs. Ross feeds a tomato can full twice a day to a pen of 20 birds. All feed is thrown on the ground. Green feed is not necessary. Many amateurs think their birds must have it, and it does them no harm, but they do not need it.

Regularity in feeding is extremely important. The birds always seem to know when their feeding time arrives and are restless till they are fed. Whatever hours are chosen, stick to them, and let nothing interfere.

The beginner should not try to mix his own pigeon feed till he has raised 500 pair. This is another way of saying, "Don't mix your feed till you know how." Prepared pigeon feed may be bought at any feed store and is entirely satisfactory, but when a very large number of birds are kept it is slightly cheaper to buy the grains and mix them.

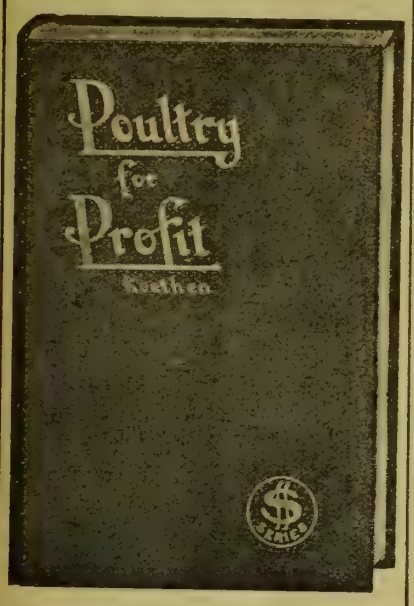
Only hard grain is fed to pigeons, and it should all be the cleanest and sweetest obtainable, free from mold and rust. The formula Mr. Dixon is following at present consists of 650 pounds milo, 650 pounds kafir, 400 pounds wheat, 300 pounds corn, 65 pounds hemp seed, 70 pounds sunflower seed, 100 pounds Canadian peas. When Canadian peas are not obtainable soy beans are used in their place. Sunflower seed is not used in winter nor when it is very expensive. To the above mixture is added for squab feeding a little bit of peanut hearts. This is a feed that must be used with great care and is not recommended for beginners. Only flint corn is used. As the squabs remain in the nest from the day they are hatched till they go to market four weeks later, it is easy to see that their lack of exercise must be counterbalanced by the greatest care in selecting feed.

Fresh water for drinking and bathing is always before the birds, and three times a week they are given the following medicated grit preparation in stone crocks: 3 quarts grit, 1 quart shell, 1 pint charcoal. This is wet with a saturated salt solution and fed wet. As pigeons have no gall salt is absolutely essential to their health.

Supply Makes Demand

The demand for squabs is far beyond the supply. Except for a short time in the spring when Leghorn broilers flood the market, the demand from high class hotels and clubs and

Poultry Can Be Made Profitable



Making use of information gathered from experienced poultry writers who have been guided by their practical experiences will always result in profit from poultry.

¶ ¶ ¶

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wealthy homes is pretty steady, but it would be greater and steadier if the supply could be counted on. "If you order squabs and can't get them, pretty soon you won't order any more," is Mrs. Ross' way of stating the case in a nutshell. Squab raising has never been gone into largely in this state. The war cut the industry down to practically nothing. With the return to normal in many respects, though feed is still too high, has come a renewed demand which only needs encouragement. It is not necessary to have an "Eat a squab" day or a campaign to instruct the public on the value of squabs as a diet. All that is needed is that there shall be a supply approximately equal to the demand.

Poultry Queries

Conducted by Jean A. Koethen

Hawks

Will you kindly advise me what to do to prevent hawks from getting chickens? I have a new place and recently bought a hundred chickens. The hawks are so bold that they even run into the coop and get them. I have tried shooting, but without result.—Subscriber.

The only sure remedy I know is to cover your runs with wire. If the chickens are small it will not take a great deal of wire to keep them safe. If they are older you will need larger runs and more wire. If any reader of this column knows of any better or cheaper way to keep hawks away from chickens, the information will be appreciated.

Rheumatic Turkeys

Several of our late hatched turkeys, birds three to four months of age, have developed a peculiar trouble. There is first a slight turning outward of the left leg, which gradually increases till at the end of two or three weeks the leg is at right angles to the body. Examination shows a general curve of the leg bones from foot to hip joint. This same trouble has appeared in other flocks this year.—Subscriber, Ramona.

Twisting of legs and toes in young turkeys is generally believed due to rheumatism caused by exposure, especially from running on damp grass or on the cold, wet ground in the early morning. But why only the left leg should be affected I do not know. Your first step toward a cure is to examine conditions carefully in order to determine just what the cause is. Turkeys of that age ought to be able to roost out in the rain without contracting rheumatism, but the weather has been rather trying this fall on account of the sudden changes from hot to cold and wet. Possibly they have not roosted out and have taken cold, finding the change from warm roosting quarters to damp outdoors too great. Painting the affected limb lightly with tincture of iodine every other day may help to relieve the rheumatic condition, but protection from dampness and a liberal supply of green feed are best preventive treatment.

STORRS EGG LAYING CONTEST

Storrs, Connecticut, Oct. 1, 1921.—Report for the week ending Oct. 10, 1921.

The ambition of every owner of every pen in every laying contest is to have his pullets average 200 eggs during the hen year which starts on November 1 of each year and ends on the last day of the following October. In the laying contest at Storrs a pen of White Leghorns from Cooperstown, New York, another pen from Hollywood, Washington, and a pen of White Wyandottes from Bridgeton, Rhode Island, have already passed the high water mark and there are still three weeks to go. In other words these three pens with a total of only 30 hens in all have laid more than 6,300 eggs. Before the race is over on the thirtieth of October the management of the contest believes there will be three other pens in this group.

In the 49th week the total production for all pens was 1,878 eggs, or a yield of nearly 27 per cent. Hollywood Farm's pen of Leghorns is an easy first for the week with a score of 41 eggs.

The eleventh annual laying contest will start on the first day of November.

The four leading pens in each of the principal varieties are as follows:

Plymouth Rocks

W. H. B. Kent, (Barred), 1,942 eggs; Jules F. Francais (Barred), 1,677; Rock Rose Farm (Barred), 1,671; James F. Macdonald (Wh. Rocks), 1,494.

Rhode Islands Reds

Charles H. Lane, 1,928 eggs; The Orchards, 1,778; Sunnyfield Farm, 1,730; Henry P. Walker, 1,714.

White Leghorns

Hollywood Farms, 2,129 eggs; L. E. Ingoldsby, 2,042; Ernest H. Scott, 1,964; Burchell & Janson, 1,950.

Other Varieties

Obed G. Knight (White Wyandottes), 2,152 eggs; H. P. Cloyes (Buff Wyandottes), 1,670; A. E. Hampton (Black Leghorns), 1,527; Clemens J. Diemand, (Wh. Wyandottes), 1,478.

NATIONAL EGG LAYING CONTEST

By T. W. Noland

Missouri State Poultry Experiment Station, Mountain Grove. Report for September:

The 300 hens in the contest laid 3,619 eggs during the month or an average of 12.06 eggs per hen. Pen of S. C. White Leghorns owned by D. Tancred, Kent, Washington, and Pen of S. C. Anconas owned by J. A. Pankey, California, Missouri, tied for leading pen for September, each pen laying 99 eggs during the month.

Number eggs laid by different breeds for the month and to date are: Leghorns, 580, 9,969; Wyandottes, 606, 9,245; Plymouth Rocks, 661, 9,069; Miscellaneous, 620, 8,977; Anconas, 509, 8,932; Rhode Island Reds, 643, 8,851.

Ten leading pens for September are: Anconas, Missouri, 99 eggs; S. C. White Leghorns, Washington, 99; White Wyandottes, Missouri, 97; Barred Rocks, Canada, 96; S. C. Reds, Colorado, 94; Barred Rocks, Illinois, 93; R. C. Rhode Island Whites, Illinois, 86; White Wyandottes, Missouri, 83; White Wyandottes, Illinois, 83; S. C. Reds, Connecticut, 83; Silver Campines, Ohio, 83.

Ten leading pens to date are: S. C. White Leghorns, Washington, 1,210 eggs; White Wyandottes, Missouri, 1,204; S. C. White Leghorns, Missouri, 1,165; S. C. White Leghorns, England, 1,135; R. C. Barred Rhinelanders, Michigan, 1,103; Anconas, Missouri, 1,087; R. C. Rhode Island Whites, Illinois, 1,085; S. C. White Leghorns, New York, 1,075; S. C. Reds, Colorado, 1,059; S. C. Reds, Missouri, 1,033.

FARM BUREAU EGG LAYING CONTEST

The third annual contest started at Santa Cruz October 1 with 744 pullets entered.

As precaution against chicken pox all have been vaccinated. Proof has not been fully established that vaccination for pox as a preventive is certain, but results have been evident enough to warrant the vaccination of thousands of pullets each year in the Petaluma district for this purpose. All entries are of the Single Comb White Leghorns, except two pens of Barred Rocks.

Pens laying over 60 per cent the first ten days were: Alex Stewart, Santa Cruz, 72 eggs; L. A. Thornewill, Santa Cruz, 70 eggs; C. E. Hyde, Seabright, 69; Levi Mellon, Santa Cruz, 69; Lytton Electric Hatchery, Lytton, 67; Paul Tallman, Santa Cruz, 64; H. H. Corbett, Santa Cruz. 64; Geo. Gray, Santa Cruz, 62; Hanson's Poultry Farm, Corvallis, Oregon, 61; E. D. Crewdson, Santa Cruz, 60.

For the ten days the whole flock, including all birds, laid 2,297 eggs, or just a trifle better than 30 per cent. A number of the pens are late hatches and are not laying at all.—Max Kortum, Manager.

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EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 60; case count, 57; pullets, 48; pewee pullets, 33.

Nov.	2	3	4	5	7	8
'21	63	....	....	....	....	60

POULTRY

Price to producers: Hens, 25; colored, 32; broilers, 40; roasters, 28; old roosters, 16; fryers, 30; ducks, old, 20; ducklings, Pekin, 3½ up, 25; others, 25; geese, 25; turkeys, live, young tom, 35; dr., 38; old, live, 27; dr., 33; hens, live, 32; dr., 38; squabs, 45@55.
Belgian hares, 12@17; old, 8.

LIVESTOCK

Los Angeles, Nov. 8:—Weighed and delivered off cars without food or water:
Hogs (hard grain fed), 125 to 175 lbs., 9.00; 175 to 225 lbs., 9.50.
Cattle (on foot, gross weight): Steers, good, 6.50; medium, 6.00; cows, good, 5.00; medium, 4.50; bulls and stags, 3.00; calves, 125 to 150 lbs., 8.00; 175 to 225 lbs., 7.00.
Sheep: Ewes, 3.50@4.00; lambs, 7.00@7.50.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, November 8, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.
Potatoes: Market steady. Lugs mostly 1.00@1.25. Stocktons: Burbanks, per cwt., best, 2.75@3.00, mostly 2.75; poorer, 2.00@2.50. Idahos: Russets, 2.50@2.65; baking stock, 3.15@3.25; Rurals, 2.35@2.40. Sweet Potatoes: Market weak. Locals: No. 1, mostly 75@80; No. 2, 50@60 lug.
Onions: Market firm. Locals: Spanish, per cwt., 3.75@4.00; per lug, 1.10@1.25. Stocktons: Per cwt. White Globes best, cold storage, mostly 5.50; other whites, 5.00; yellows, 4.00@4.50; browns, 5.00; per lug, whites and browns best, 1.75; poorer, 1.35@1.50. Garlic, lb., 7@10.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock, November 8, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk
Beans: Supplies liberal, demand slow, market weak. Per lb., Kentucky Wonders, mostly 4@5; green pods, 3@4; limas, 7@9, mostly 7½@8.
Bunch vegetables: Per dozen bunches: Beets, carrots and turnips, 45@50; radishes and leeks, 15@20; parsley, 15; spinach, 25.
Cabbage: Per field crate, mostly 150 @2.00; poorer, 1.25.
Cauliflower: Supplies moderate, market stronger, 1.00@1.50, according to quality.
Celery: Supplies moderate, market steady. Per crate, 3.00@3.50; poorer, 2.50@2.75.
Cucumbers: Market steady. Locals: Lugs, mostly 50@75.
Egg plant: Lb., 3½@4.
Lettuce: Demand moderate, market steady. Mostly leafy stock. Locals: Field crates, best, 75@90; poorer, 50@60.
Parsnips: Lug, 60@70.
Peas: Market steady. Lb., 10@12; poorer, 7@8.
Peppers: Supplies liberal, market firm on bells. Locals: Bells, green, per lug 60@65; Red Pimientos, 75@90; Chilis, 40 @45 per lug.
Rhubarb: Lug, 75@1.00.
Squash and Pumpkins: Market steady, movement slow. Hubbard squash, 1¼@1½ lb.; Banana squash, 1¼@1½ lb.; pumpkins, 1@1½ lb.
Tomatoes: Market steady. Locals: No. 1, per lug; Pinks and Ripes, mostly 1.00@1.25; few, 1.50; poorer, 60@75.

FRESH FRUITS

Apples: Demand and movement slow, market steady. Locals: Windfalls, 1¾@2; Romes and Winesaps, 4@4½ lb.; few best Delicious and Jonathans, Yucaipa section, 5@6 lb. Watsonville: Fancy 4 tier Bellefleurs, 1.50@1.60; poorer, 1.25@1.40; 4½ tier, 1.10@1.25; B grade 4 tier, 1.15@1.25. Utahs: Jonathans, 6@7 lb. Washingtons: Jonathans, extra fancy, large, 3.00@3.25; medium, 2.90@3.00; fancy medium, 2.65@2.85; small, 2.50. Oregons: Spitzenburgs, extra fancy, medium size, 2.75@3.00; fancy, medium, 2.65@2.85.
Avocados: 3.00@6.00 doz.; lb., 25@40.
Cranberries: Market steady. Early Blacks, 11.00 bbl.; Late Howes, 24.00@25.00.
Feijoa: Lb., 10.
Figs: Demand moderate, market steady. Locals: Per box, 1.00@1.50; few best, 1.75; various, 10 lb.
Grapes: Demand good, market stronger. Supplies liberal. Per lb.: Malagas, 7@7½; Virdels, 6@7; Red Emperors, 7@8; Cornichons, 5@7; Tokays, 7@8.
Melons: Honeydews, 1½@2 per lb.; Casabas, 1@1½ lb. Watermelons, ¾@1
Olives: Ripe, lb., 5@6.
Pears: Demand good, market steady. Bartletts, mostly 4@5; few, 6@7; poorer, 3@3½ per lb.
Persimmons: Lb., 9@15.
Pomegranates: Lb., 5@9.

CITRUS FRUITS

Grapefruit: Market firm. Locals: Per box, market pack, best, 4.00@5.00; small, 3.50; special packs, 4.00@5.00. Arizonas: 5.00@5.50.
Lemons: Demand moderate. Locals: Special pack, 4.50@5.00; market pack, 2.75@3.25; loose boxes, 1.50@2.25; lugs, 75@1.25.
Oranges: Demand moderate, market steady. Special brands, mostly 5.75@6.00; market pack, 4.00@5.00, according to size and quality; culls, field boxes, 2.25@2.50.

HONEY

Warm weather in September and October has improved the late honey flow in the Sacramento Valley. Bees in Southern California are reported not going into the winter in very good shape. Carlot supplies are practically exhausted except of alfalfa honeys. Demand has been light except for alfalfa, but market is firm due to light supplies. Considerable honey is being disposed of locally in small lots. Carlots f. o. b. usual terms at loading points, per lb. Extracted: White Orange Blossom nominally, 11@12½; White Sage nominally, 10½@11½; Light Amber Sage, 7½@8½; Light Amber Alfalfa, 6½@7½; Hawaiian honey, f. o. b. San Francisco, per lb., white, 6½; Light Amber, 5½; Dark Amber, 4½. Beeswax: Practically no demand or movement. Growers receiving 20@22 per lb. for good wax in small amounts.
Beeswax: Practically no demand or movement. No sales reported.

NUTS

Cal. Walnut Growers Assoc.:
Opening prices to wholesalers:

No. 1 Softshell	27
No. 2 Softshell	20
Standard Budded	31

GRAIN AND FEEDS

Grain Exch. price bid Nov. 8:
Barley: 100 ton lots, Nov. del., 1.28.
Milo: 100 ton lots, Dec. del., 1.33.

HAY

Alfalfa Growers of California report:
The market continued firm under good demand for spot lots as well as for shipment. Choicer grades somewhat higher. We only have to compare low prices here with those received by growers in other states, as for instance with 5.00 baled, in Nevada, 6.00 in Colorado, 1.50 in South Dakota, etc. We believe our growers here do not realize how near they came to suffering the same fate; all that saved them from it is the association.
There were 1,090 tons of grain and alfalfa hay received on Los Angeles tracks the week ending November 5, with 270 tons held over.
Prevailing prices last week, delivered in the vicinity of Los Angeles:

No. 1 Dairy Alfalfa	22.00
Standard Alfalfa	17.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats	20.00@26.00
Barley	16.00@24.00
Alfalfa, Rabbit	24.00@28.00
Alfalfa, No. 1 Dairy	19.00@21.00
Standard	16.00@18.00
Straw	12.00

San Francisco Markets

San Francisco, November 8, 1921.

BUTTER

Extras	50
Prime Firsts	47½

Nov.	1	2	3	4	7	8
'21	....	....	50½	50	50	50

CHEESE

Dairy Exchange quotations:

Cal. Flats	30½
Cal. Y. A.	29
Ore. Trips	26
Ore. Y. A.	30

Nov.	1	2	3	4	7	8
'21	....	....	68	68½	66	65

EGGS

Dairy Exchange quotations:

Extra	65
Extra Firsts	60
Extra Pullets	51½
Pullets, Firsts	51
Undersized No. 1	44½

POULTRY

Wholesale prices are:
Poultry: Young chickens, Leghorns, 1 to 1¼ lbs., 48@50 per lb.; above 1¼ lbs., 26@27 per lb.; heavy breeds, 26@27 per lb.; staggy roosters, 20@25 per lb.; old roosters, Leghorns, 16 per lb.; heavy breeds, 18 per lb.; hens, Leghorns, large, 25@28 per lb.; small to medium, 24 per lb.; heavy breeds, 28@30 per lb.
Ducks: 20@22 per lb.
Geese: 30@33 per lb.
Turkeys: Live, old, 35 per lb.; spring, 40 per lb.; extra large, 42 per lb.; do, dressed, 52@54.
Squabs: Fancy, 50; do, common, per dozen, 3.50; old pigeons, 3.50 per dozen.
Belgian hares: Live, 16@18 per lb.; do, dressed, 25@28 per lb.

LIVESTOCK

Western Meat Co. quotes:
Weighed off cars at our yards in South San Francisco:
Cattle: No. 1 steers, 6@6½; do, second quality, 4¾@5¾; cows and heifers No. 1, 4¾@5¼; do, second quality, 4@4¾; bulls and stags, 3@3½.
Calves: Light weight, 7@8; heavy, 5½@6.
Sheep: Wethers, 4@4½; ewes, 2¾@3¼.
Lambs: 7@7¾.
Hogs — Hard, fat, grain-fed, weighing 125 to 200 lbs., 10; 200 to 250 lbs., 9; 250 to 300 lbs., 8; light sows, 8; heavy, 7.
California Farm Bureau Marketing Association reports:

No. Hogs	Av. Wt.	Dock	Price
Modesto, November 1			
54	163	.....	10.35
11	253	.....	9.35
2	460	.....	7.85
1 Boar	660	.....	3.00
1 car, 17 consignors, $1,265.76.			
Chowchilla, November 3			
178	162	.....	10.30
81	194	.....	10.00
30	185	.....	9.70
7	225	.....	9.70
22 feedrs	114	.....	9.70
2	325	.....	7.20
4 cars, 26 consignors, $5,530.83.			
Fresno, November 4			
93	168	.....	10.40
5	252	.....	9.50
29	235	.....	10.05
9 feedrs	149	.....	9.50
13 feedrs	130	.....	9.50
1 stag	240	.....	7.50
1½ cars, 7 consignors, $2,050.03.			
Wasco, November 5			
102	177	.....	10.00
9	178	.....	10.00
7	217	.....	9.50
9	234	.....	9.00
1	190	.....	9.00
5 feedrs	120	.....	8.00
1½ cars, 13 consignors, $2,369.50.			

Total for the week, 8 cars, 63 consignors, $11,216.12.
These prices are f. o. b. shipping point to the farmer, while the prices quoted by the newspapers are off cars at their packing houses.

POTATOES AND ONIONS

Street prices:
Potatoes: Street prices: River, 2.50@2.75; second grade, 2.00@2.25; Oregon Burbanks, 2.65@2.75; Salinas, 3.50@3.75; netted gems, 2.75@3.00. Sweets, 3@3½ per lb.
Onions: New crop Yellow, 3.25; Brown, 4.00@4.25; Green, 1.50@2.00 per box.
Garlic: 3@5 per lb.

VEGETABLES

Wholesale selling price:
Artichokes: 9.00@11.00 cr.
Beans: String, 3@5 lb.; Lima, 3@5. fy. 9@10; Wax, 4@5.
Brussel Sprouts: 4@6 per lb.
Carrots: Sk., 1.00@1.25.
Celery: 1.50@2.25 cr., bunch 25@35; bleached 4.00@4.50 cr.
Cucumbers: Lug, 50@75; hothouse 1.00@1.25; Southern, 60@85.
Eggplant: 1.00@1.25 lug.
Lettuce: Crate, 75@1.00; Los Angeles, 1.50@2.00.
Okra: 1.00@1.50 per box of about 10 lbs.
Peas: 5@10 lb.; fy., 12½.
Peppers: Bells, 3@4 lb.; 50@75 lug; Chili, 3@5.
Pumpkins: 1.00@1.25 sk.; lb., 3. Crookneck, 4.
Spinach: 4 per lb.
Tomatoes: 50@75; few, 1.00; basket, 50 @75.

FRESH FRUITS

Apples: California: Bellflower, 1.00@1.15; B grade, 75@90; Newton Pippins, 3½ and 4 tier, 1.75@2.00; 4½ tier, 1.60@1.75; B grade, 1.25@1.35; Spitzenburg, 4 tier, 1.50@1.75; 4½ tier, 1.15@1.50; Baldwin, 4 tier, 1.40@1.60; 4½ tier, 1.15@1.35; Langford, 3½ and 4 tier, 1.50@1.75; 4½ tier, 1.25@1.50. Northwestern: Spitzenburg, extra fancy, 2.50@2.75; fancy, 2.25@2.50; choice, 1.75@2.00; Rome Beauty, fancy, 3.00@3.25; choice, 2.50@2.75; banana, extra fancy, 3.25@3.50; fancy and delicious, 2.75@3.00; Jonathan, extra fancy, 2.00@2.50; fancy, 1.75@2.00; Lady apples, 3.50.
Avocados: California, doz., large, 3.00@5.00; small, 1.00@2.00; Fla., 3.00@5.00; Tahiti, 3.00@4.50.
Bananas: Eastern, 6@7; Hawaiian, 7@8.
Chestnuts: 18@25 per lb.
Cranberries: Bx., 4.50@5.00; Cape Cod, 15.00@16.00 bbl.
Figs: Black, double layer, 75@1.00.
Grapes: Black, 2.50@3.00; Tokay, 2.50@3.00; Muscat, 3.00@4.00; Malaga, 2.25@2.50; seedless, 4.25; Verdel, 2.50.
Huckleberries: 8@11 lb.; fy., 15@18.
Melons: Persian, 1.00@1.25 per small cr., 1.50 large; Honeydew, 1.00@1.25 per standard crate; Casabas, 50@75 per dozen.
Olives: Large, 8; small, 5.
Persimmons: 1.50@2.00 bx.
Pineapples: 4.00@4.50 dozen.
Pomegranates: 2.00@3.00.
Prunes: 1.50@1.75 cr.
Quinces: 1.25@1.50 lug.
Raspberries: 75@1.00 dr.
Strawberries: Cr., 1.00@2.00; dr., 75@1.50.

CITRUS FRUITS

Oranges: Valencias, 4.00@6.25 per box. Lemons, 3.00@5.00 per box; lemonettes, 1.50@3.00 per box. Grapefruit, 3.75@4.25 per box for California and Arizona. Limes, Mexican, 2.50 box.

BEANS

Below California Bean Growers Association shippers prices choice recleaned

Large Whites	5.10
Small Whites	4.90
Pinks	4.60
Mexican Reds	4.50
Red Kidney	6.85
Henderson Bush	5.55
Cranberries	5.75
Bayos	4.90
Blackeyes	3.80

HAY AND FEED

Francisco:	
Choice Dairy Alfalfa	16.00
Standard	15.00

A. W. Scott Co. says:
Arrivals past week 600 tons as compared with 691 the previous week. Receipts continue about 50 per cent of normal and our city market has shown a steady improvement with values hardening. While buying has not been active it has been sufficient to move hay promptly and to clean up arrivals as fast as received. Poorer grades are still slow but better qualities are in demand and at slightly better figures. Interior trading shows little change in price though moving in increased volume. With the calling off of the threatened rail strike a somewhat easier feeling is manifest in most localities with the offerings practically on a par with the demand. Most of the hay is now stored and is being freely offered at former prices with storage charges added.
Alfalfa has been moving more actively than any other grade of hay with the demand strong and the balance slightly in sellers' favor. Prices are stronger both in San Francisco and throughout the country. Central California holders are disinclined to sell at the present market but large shipments are arriving from Nevada and a large part of the local and interior demand is now being filled by that state. Interior dairies seem to prefer small bales in which the Nevada hay is baled and are giving preference to that hay over the local product. At the close of the week the alfalfa market is strong with an upward tendency.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the markets in San Francisco (for prices to consumers, charges of switching, cartage, commission and handling expenses must be added, according to conditions).

Wheat Hay No. 1	16.00@18.00
Wheat Hay, fair grade	13.00@16.00
Tame Oat Hay	13.00@16.00
Wild Oat Hay	10.00@12.00
Alfalfa Hay	12.00@15.00
Stock Hay	8.00@10.00
Straw	10.00@12.00
Rolled Barley	29.00@30.00
Ground Barley	31.00@33.00
Oats, Rolled Feed	34.00@36.00
Bran and Millrun	24.00@27.00
Middlings	40.00@44.00
Cocoanut Meal	24.00@26.00
Alfalfa Meal	21.00@23.00
Cottonsed Meal	40.00@42.00
Sugar Beet Pulp	29.00@30.00
Molasses Tanks	21.00 Barr. 25.00
Milo Maize, Corn Meal and Cracked Corn	38.00@41.00
Scratch Feed	44.00@46.00

GRAIN

Sales on Grain Exchange:
Barley: Feed, 1.20@1.25; shipping, 1.27 @1.32½.
Red Feed Oats: 1.40@1.60; do, seed, 1.75@2.10.
Mill Wheat: 1.80@1.90; feed, 1.85@1.95.
Corn: California yellow, 1.45@1.50; eastern yellow No. 2, 1.37@1.40; No. 3, 1.36@1.38; No. 3 Kaffir, in bulk, nominal; white Egyptian, 1.67½@1.70; California, red milo, 1.62½@1.67½.

Citrus Markets

Los Angeles, November 9, 1921.

The citrus shipping year ended with Monday, October 31. The grand total of citrus fruit shipments for the year is 60,116 carloads, according to the reports of the railroads. The Fruit Exchange makes it slightly greater than this number, possibly due to some shipments by water not reported by the rails. Valencias were practically cleaned up with the end of the year though there will be occasional scattering shipments. Kern County is earliest in the field with a picking gang. She is sweating in order to give color. The Navel season is thought to be rather behind last year this date.

Shipments 1920-1921

Shipments of citrus fruits to date since November 1, 1920, Southern California: Oranges, 41,330 cars; lemons, 11,584; total, 52,914. To same date last season: Oranges, 30,025; lemons, 8,733; total, 38,758. The year 1918-1919: Oranges, 35,436; lemons, 9,441; total, 45,177.
From Central California to date this season: Oranges, 6,676; lemons, 216; total, 6,892. To same date last season: Oranges, 5,391; lemons, 289; total, 5,680. The year 1918-1919: Oranges, 3,337; lemons, 264; total, 4,001.
From Northern California to date this season: Oranges, 305; lemons, 5; total, 310. To same date last season: Oranges, 261; lemons, 23; total, 284. The year 1918-1919: Oranges, 256; lemons, 5; total, 261.
This makes total shipments from California 48,311 cars oranges and grapefruit and 11,805 lemons.

Shipments This Year

Shipments of citrus fruits to date since November 1, 1921, Southern California: Oranges, 221 cars; lemons, 105; total, 326. To same date last season: Oranges, 87; lemons, 136; total, 223.

AT THE AUCTIONS

November 2

New York: 30 or., 2 lem. Val. 1.85-8.55, lem. 1.85-5.85.
Boston: 9 or., 3 lem. Val. 3.05-7.05, lem. 2.90-4.10.
Philadelphia: 7 or., 1 lem. Val. 2.30-5.65, lem. 1.50-2.60.
Pittsburg: 4 or., 2 lem. Val. 3.15-5.90, lem. 1.10-5.00.
Cincinnati: 4 Val. 2.40-4.70.
St. Louis: 2 Val. 2.90-5.25.
Cleveland: 4 or., 2 lem. Val. 2.50-5.45, lem. 1.70-5.50.

November 7

New York: 39 or., 6 lem. Val. 2.50-8.05, most sales running under 5.00, lem. 1.80-6.35.
Cleveland: 8 or., 1 lem. Val. 2.35-4.65, lem. 3.40-5.05.
St. Louis: 3 or., 1 lem. Val. 3.45-5.30, lem. 2.80-4.60.
Boston: 16 or., 7 lem. Val. 1.90-7.00, lem. 1.25-4.45.
Pittsburg: 4 or., 5 lem. Val. 3.60-5.60, lem. 1.20-4.75.
Philadelphia: 13 or., 2 lem. Val. 2.35-7.45, lem. 1.05-6.05.
Cincinnati: 3 Val. 2.90-4.20.

November 8

New York: No sales of California citrus fruit because of election.
Boston: 13 or., 3 lem. Val. 2.25-6.05, lem. 2.40-4.25.
Philadelphia: 9 or., 2 lem. Val. 3.20-7.05.
Pittsburg: 2 or., 1 lem. Val. 3.40-5.00, lem. 2.80-3.90.
St. Louis: 2 Val. 2.75-5.00.

CALIFORNIA CATTLEMEN'S WEEKLY REPORT

San Francisco, November 7.

Receipts of cattle at Chicago during the past week were considerably lower than the previous week. This decrease was probably due to an accumulated supply on hand as a result of the threatened railroad strike. The receipts of cattle in San Francisco last week were about one-quarter of the usual number, for the same reason. The average price paid at Chicago during the past week showed a decline, but this should not be taken seriously, since it is a seasonal variation on that market. The Chicago market usually declines until the first of the year, at which time it normally picks up again. On the other hand, the Pacific Coast market usually improves from October 1 on until about April 1.
The San Francisco quotations have again increased a quarter of a cent, a price of 6½c f. o. b. yards San Francisco,

now being quoted.

Reports of sales continue to come to us of 6½c f. o. b. ranch for prime steers and a few extra choice lots have sold for as high as 7c f. o. b. ranch, in central California. Sales in the northern part of the state are for 5½c to 5¾c f. o. b. ranch.

Shipments of cattle continue to reach California from outside the state. Part of these are for immediate slaughter and part are feeder cattle. These cattle being brought into California are costing the packer as much, if not more, than is being paid California cattlemen. Cattle reported being bought outside the state for low prices are feeder cattle, and not for immediate slaughter.

All classes of cattle continue in great demand, feeder and stock cattle being exceedingly short.

Do not ship on consignment. Ship only f. o. b. ranch. We have a rising market! Beware of the speculative buyer who does not buy direct for a packing company. He is most active on a rising market. His profit belongs to you.—R. M. Hagen, Secretary.

POULTRY PRODUCERS MEET

Plans have just been completed for holding two meetings of the members of the Poultry Producers of Southern California, Inc., and others who may be interested in the cooperative marketing of poultry products. A banquet is to be served and a short program of entertainment will follow, after which we expect to have State Market Commissioner Maddox, also C. F. Stern, vice-president of the First National Bank of Los Angeles and who for several years past has been in close touch with all cooperative effort in this state, who will speak to us along cooperative lines.

The first meeting will be held at First Congregational Church, Seventh and Lemon Streets, Riverside, on Tuesday evening, November 15, the banquet to be served at 6:30 p. m., to be followed by the entertainment and speaking. The second meeting will come to Hotel Rosslyn, Fifth and Main streets, Los Angeles, on Thursday evening, November 17, the banquet to be served at 7 p. m., and followed by the entertainment and speaking.

If you have a neighbor who is not a member of our organization, and who should be with us, try and bring him with you or send his name and address that we may extend to him a special invitation.

Members who expect to attend either meeting and who can furnish transportation for one or more, please don't drive in with any empty seats; cooperate and bring a full load, members or non-members.

Committee: B. R. Holloway, H. R. Crum, W. S. Wheeler, Loring N. Kirk, J. H. Olsen, Leslie R. Gay, Dr. T. M. Cunningham.

A GREAT CITRUS YEAR

With anywhere from 50 to sometimes as high as 300 carloads of oranges going out of California every day in the year it is somewhat difficult to say when the "season" begins. The beginning of the shipping year, however, from the railroad men's standpoint is November 1, and reports of carload shipments as given on market page of this paper for many years have taken that date, so that we are now entering upon the new year.

For the year November 1, 1920, to October 31, 1921, the total shipments as reported by the railways aggregate 60,112 cars oranges, grapefruit and lemons. The Exchange reports slightly more than that, or 60,147 cars. As reported by the railways shipments are: Southern California, oranges 41,330, lemons 11,580. Central California, including Tulare, Fresno, Kern and other counties, 6,676 oranges, 216 lemons. Northern California, including Butte, Sacramento and others, 305 oranges, five lemons.

Commenting on the season's work Manager Powell of the Exchange reports:

During the year ended October 31, 1921, 48,350 carloads of oranges and grapefruit and 11,797 carloads of lemons, making an aggregate of 60,147 carloads of citrus fruits were shipped from California.

Members of the California Fruit Growers Exchange shipped for the same period 33,677 carloads of oranges and grapefruit, and 9,915 carloads of lemons, totaling 43,592 carloads, or 72.5 per cent of the citrus shipments from the state. In boxes this totaled 15,185,999 boxes of oranges, 204,106 boxes of grapefruit, and 4,175,239 boxes of lemons.

Returns for Exchange shipments f. o. b. cars California were $61,080,003.77, and based on these returns California received $83,537,344.22 for the season's citrus crop, the delivered value being $128,431,059.30 including $44,893,715.08 for freight and refrigeration. From investigations of jobbing and retail margins it is estimated that retail dealers paid $145,855,046.00 for the crop and consumers $203,642,100.00.

In a year characterized by many business failures and general financial stringency, the Exchange lost only $3,570.29 or 3/500 of one per cent. of the f. o. b. value of the fruit. During the past 18 years the returns to California through the Exchange have been approximately $443,000,000.00 and the total losses from all causes during this period have been $12,345.00 or 3/1000 of one per cent. of the f. o. b. returns.

Expressed in terms of boxes the Exchange shipments for the year ended October 31 were 15,185,999 boxes of oranges, 204,106 boxes of grapefruit, and 4,175,239 boxes of lemons.

BLISTER RUST THREATENS CALIFORNIA

The work of a fungus parasite that leads a dual life was seen by the foresters of 21 states at the annual meeting of the State Foresters Association held this year at Chestertown, New York, according to Merritt B. Pratt, California deputy state forester, who recently returned from a trip East, during which he attended the meeting. The white pine blister rust, a forest tree disease which is doing severe damage to the white pines in the eastern states, was the central topic of the conference. The fungus which causes this disease can harm the white pine only after a period of growth on currant or gooseberry leaves.

This disease has become prevalent throughout the New England states, New York and parts of Wisconsin and Minnesota, but has not yet been found on the Pacific Coast. Sugar pine is susceptible to the blister rust, and western foresters agree that should the disease become established in California it would speedily become the most serious forest tree pest in the state, not even excepting the destructive pine bark beetle which at present is doing considerable damage in the lumbering sections.

There are 62 different kinds of wild currants and gooseberries native to the Pacific Coast, and if the blister rust should gain a foothold in this region it would be very hard to combat on account of the difficulty of eradicating the currants and gooseberries which spread the disease.

A rigid quarantine against the shipment into California of white pine trees and currant and gooseberry bushes is being maintained by the state department of agriculture in cooperation with the state board of forestry to prevent the introduction of pine blister rust into the state. A federal quarantine prohibiting the shipment of nursery stock of this kind from eastern states west of the Mississippi River is a further protection. The state board of forestry, however, urges the cooperation of the people in protecting the California sugar pine by allowing no white pine trees or currant or gooseberry bushes to be shipped to them from outside the state.

The National County Agents Associational convention will be held at the Record Building, Union Stock Yards, Chicago, Illinois, on November 30,

Towner subsoiler at work on Irvine ranch in Orange County

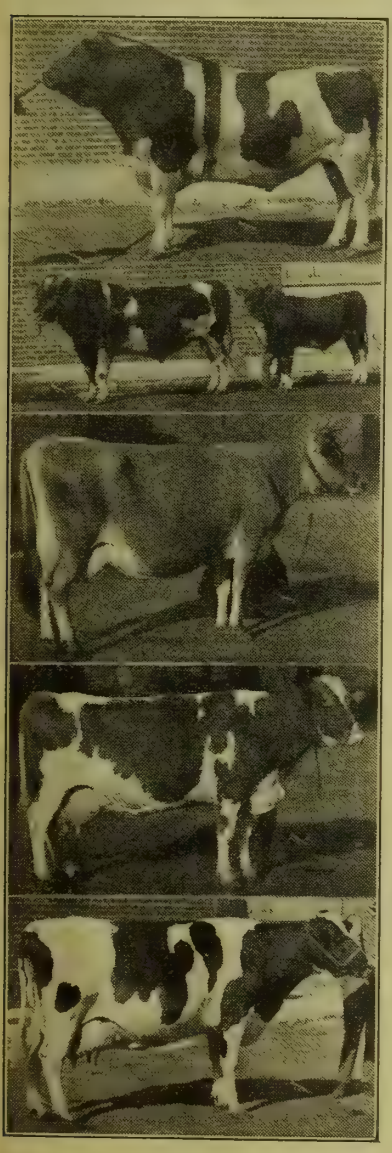
SWEET CLOVER IN ARIZONA

One of the latest publications on sweet clover which is becoming more and more popular is "Sweet Clover in Arizona," Circular 34, of the college of agriculture, Tucson, written by S. P. Clark. We believe this circular will be mailed to California people on request.

WEATHER REPORT

San Francisco, Cal., Nov. 5, 1921.

Stations	Rainfall Wk.	Season	Norm.	Temp. Max.	Min.
Eureka	.00	1.87	4.54	78	44
Red Bluff	.00	.65	2.76	80	44
Sacramento	.00	.80	1.62	86	50
San Francisco	.00	.87	1.81	79	52
San Jose	.00	.42	1.42	86	38
Fresno	.00	.21	1.04	86	48
San Luis Obispo	.00	.56	1.97	92	42
Los Angeles	.00	1.21	.91	94	59
San Diego	.00	1.91	.60	92	55



Some Champions at the California National at San Francisco

Top picture is King Segis Alcartra Prilly, grand champion Holstein bull, owned by Bridgford Holstein Co., Patterson. Next from top is a Guernsey, champion produce of dam, owned by Brant Rancho, Owensmouth. Third from top is Salome of Mossdale, grand champion Jersey cow, owned by J. E. Thorp, Lockeford. Fourth from top, Princess of Meadowbrook, grand champion Guernsey cow, owned by Brant Rancho, Owensmouth. Bottom photo, Betsy Lamb Prilly, grand champion Holstein cow, owned by A. W. Morris Corporation, Woodland.

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Will not run, crack or peel.

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GROWN and shipped DIRECT from my large BERRY FARMS and NURSERIES here of over 100 acres. ALL SELECT plants from IMPROVED STRAINS of record PRODUCING vines.
TWENTY-FIVE YEARS OF PRACTICAL EXPERIENCE.
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Sebastopol California

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600 BIRDS

Large turkeys can be raised at practically same cost as small ones. It is in the strain. One of our toms will give you five more pounds of meat to market in all his get the first year, besides vitality and beauty.

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Continually prove their superiority by winning Gold Special Sweepstakes for best turkeys at the following great shows: California State Fair, 1920; Oregon State Fair, 1919; Live Stock Show, Los Angeles, 1919; California State Fair, 1918, 1917; Texas State Fair, 1917; Pacific Coast Exposition, Oakland, 1918; Los Angeles Live Stock Show, 1920; Washington State Fair, 1919; Los Angeles Winter Show, 1919, 1918, 1917; Liberty Fair, Los Angeles, 1918; Arizona State Fair, 1916; Southern California Fair, Riverside, 1918.
Each judge pronounced them the best in show, all breeds competing.

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Why be satisfied with any but the best?
Young Toms, $15.00 to $25.00; hens, $15.00 to $25.00; pullets, $15.00 to $20.00; also a few high-class exhibition toms to win in any show or head the finest show flocks.
Book orders early for December and January shipment, as each year we are sold out.

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LUTHER BURBANK
California's "Wizard of Horticulture"

"Finest Apple in All the World!"

—*Luther Barbank, California's "Wizard of Horticulture"*

"STARK Delicious trees from your nurseries have been growing on my place for years and never failed to produce a crop," writes Luther Burbank, California's Wizard of Horticulture. "As the trees grow larger they bear more, larger, better fruit."

"The Stark Delicious is correctly named. No other apple has the Delicious combination of the spicy fragrance and flavor of Stark Delicious. Furthermore, it keeps longer than any other good apple. **IT IS THE FINEST APPLE IN ALL THE WORLD.**" California farmers, orchardists and home owners are planting Stark Delicious, Stark's Golden Delicious and other noted Stark quality trees, like Jonathans, Stark King Davids, Stayman Winesaps, "Double-Life" Grimes Golden, etc. by thousands. Leading them all, however, is

Average Size Stark Delicious

Stark Delicious

Beat All Red Apple Records for Top Prices in 1921!

$12.00 and **more** per barrel is the price that California, Washington and Oregon growers got for their Stark Delicious **in the orchard** this year.

Stark Delicious growers in this section absolutely refused to sell any of their Stark Delicious apples unless the buyers took ALL their other varieties and paid record-breaking prices for every **variety** of apples in their orchards.

Stark Delicious has for years been the "dessert apple supreme" of all this country. It sells for even $ .25 and $ .50 each in San Francisco, Los Angeles, New York and Chicago fancy fruit stores—the "only apple that sells for a higher price than the finest oranges."

The trees that bear these wonderful apples are the trees that **helped make $1.25 per acre land now worth $1,500.00 to $2,000.00 per acre in the Northwest,** according to Hon. Franklin K. Lane, former U. S. Sec'y of Interior.

WRITE TODAY for your copy of the 1922 Edition "Prize Fruits & Trees" Book —NEW fruit pictures—NEW proofs of remarkable crops Stark Trees (especially Stark Delicious) bring to growers—NEW ways to get better fruit for home and commercial growers — and NEW, lower prices.

Send name and address on the coupon.

STARK TREES BEAR FRUIT

STARK TREES Do Best in California

Average Size Stark's Golden Delicious

Get NEW, Big 1922 Catalog!

Get this Big Book and learn how to buy Stark Trees and **SAVE MONEY.** It's a handsome volume, well worth writing for. Complete with admirable reproductions of choicest fruits in Nature's own **Beautiful Colors.** 72 Big Pages of official **facts** about best Apples, Peaches, Pears, Plums, Cherries, Berries, etc.—packed with inspiring accounts of other growers' successes with thrifty, hardy, disease-resisting, young and heavy bearing Stark "Prize Fruit" Trees that we back with our 106-year-old reputation—an interesting and helpful book that every grower ought to have on hand always.

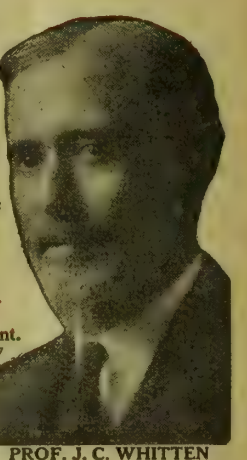
Get this Big Book and see how the greatest of all yellow apples—

STARK'S GOLDEN DELICIOUS
Is Praised by University California Authority

Prof. J. C. Whitten, Prof. of Horticulture, University of California, writes:

"Have never eaten an apple coming out of storage this late (July 15th) which retained so fully its normal crisp, juicy, condition as Stark's Golden Delicious. It far outstrips Grimes Golden!"

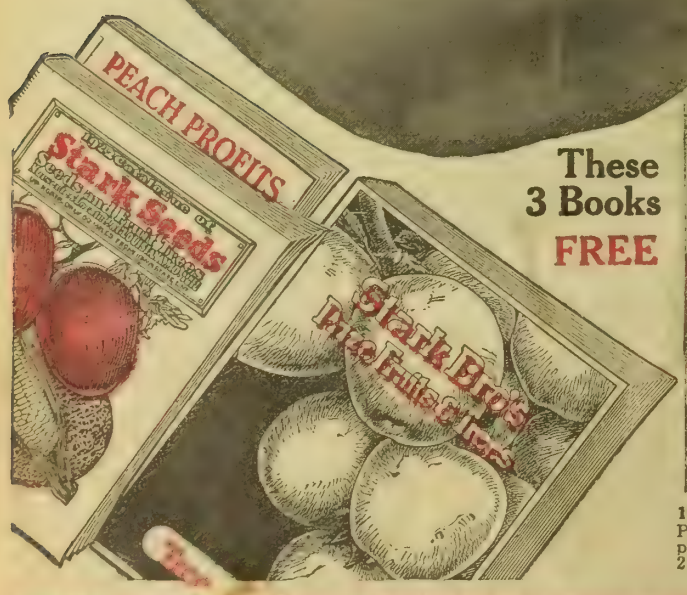
This glorious apple is not only 50 to 85 per cent. larger than Grimes Golden, but immeasurably better in flavor. Its beautiful golden skin makes an instantaneous appeal to the eye and its marvelous flavor completely entrances the taste. The crisp, tender, creamy-yellow flesh is blessed with a spicy, aromatic flavor savoring of a particularly fine, perfectly ripe pear and is fairly saturated with exquisite golden honey juiciness. Furthermore the tree is an astonishing young and heavy bearer—



PROF. J. C. WHITTEN
Professor Horticulture and Forestry, University of California. Read his statement at left

Stark's Golden Delicious
Bears at 2 Years Old in California

—and 27 other states. See 2 photographs below. They bore in many states this year (1921) *after 3 frosts and 2 freezes.* Get a copy of the FREE BOOK and learn all about these trees.



These 3 Books FREE

18 APPLES ON 2-YEAR OLD TREE
Photo of Stark's Golden Delicious tree planted by Ira A. Klein, Stent, Cal., 2 years ago, bearing 18 large apples.

128 APPLES ON 2-YEAR OLD TREE
Owned by Frank L. Wingard, Orange Cove, Cal. Think of it—128 large Golden Delicious apples 2 years after planting.

GET 1922 SEED CATALOG, TOO

Thousands of Californians say, "Every Stark seed comes up—and is true to name." "STARK SEEDS PAY"—everyone who plants them. Learn about our **New Proven Stark's "Blight-Resister"** Tomato—endorsed by members of U. S. Dept. of Agriculture.

Write at once for **Free 1922 Stark Seed** Catalog—also Free "Landscaping Plans" Portfolio—shows you **FREE** how to beautify home grounds at little expense.

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I may plant.....trees this Fall or Spring.
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California Counties Lead the World in Agricultural Products

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LVII — November 19, 1921 — No. 21

THAT season has come when, alike in pursuance of a devout people's time honored custom and in grateful recognition of favoring national fortunes it is proper that the president should summon the nation to a day of devotion, of thanksgiving for blessings bestowed and of prayer for guidance in modes of life that may deserve continuance of divine favor.

Foremost among our blessings is the return of peace and the approach to normal ways again. The year has brought us again into relations of amity with all nations after a long period of struggle and turbulence. In thankfulness, therefore, we may well unite in the hope that Providence will vouchsafe approval to the things we have done, the aims which have guided us, the aspirations which have inspired us. We shall be prospered as we shall deserve prosperity, seeking not alone for the material things, but for those of the spirit, as well; earnestly trying to help others, asking, before all else, the privilege of service. As we render thanks anew for the exaltation which came to us, we may fittingly petition that moderation and wisdom shall be granted to rest upon all who are in authority in the tasks they must discharge. Their hands will be steadied, their purposes strengthened, in answer to our prayers.

Ours has been a favored nation in the bounty which God has bestowed upon it. The great trial of humanity, though we bore our part as well as we were able, left us comparatively little scarred. It is for us to recognize that we have been thus far favored, and when we gather at our altars to offer up thanks will do well to pledge, in humility and all sincerity, our purpose to prove deserving. We have been raised up and preserved in national power and consequence, as part of a plan whose wisdom we cannot question. Thus believing, we can do no less than hold our nation the willing instrument of the Providence which has so wonderfully favored us. Opportunity for very great service awaits us if we shall prove equal to it. Let our prayers be raised for direction in the right paths. Under God, our responsibility is great; to our own first, to all men afterward; to all mankind in God's own justice.

Now, therefore, I, Warren G. Harding, president of the United States, hereby designate Thursday, the twenty-fourth day of November, to be observed by the people as a day of thanksgiving, devotion and prayer; urging that at their hearthsides and their altars they will give thanks for all that has been rendered unto them, and will pray for a continuance of the divine fortune which has been showered so generously upon this nation.

In witness whereof I have hereunto set my hand and caused to be affixed the seal of the United States of America.

Done at the capital of the United States, this 31st day of October, in the year of Our Lord nineteen hundred and twenty-one, and of the independence of the United States the one hundred and forty-sixth.

[Signed:] WARREN G. HARDING.

By the President: CHARLES E. HUGHES,
Secretary of State.

Established 1877 Forty-fourth Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877

Combined with California Cultivator 1914 Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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Subscription Price.....$1.00 per Year

Copy for change of advertisement must be in the office on Saturday preceding date of issue. New advertising copy must be in the office Tuesday preceding date of issue to insure insertion.

Advertising rates furnished on application.

The Sacramento office is Room 210 Ochsner Building. All mail pertaining to livestock should be addressed to our Sacramento office.

The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

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Entered as second-class matter February 12, 1900, at the post office at Los Angeles, California, under the Act of March 3, 1879.

Saturday, Nov. 19, 1921

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

If among the more than 40,000 Cultivator's weekly circulation any fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

EDITORIALETTES

The president of the United States makes appeal to all the people and urges that "at their hearthsides and their altars they will give thanks for all that has been rendered unto them, and will pray for a continuance of the Divine fortune which has been showered so generously on this nation." No day is more generally observed from Atlantic to Pacific than is Thanksgiving, and this year as the people make comparison of their lot and of conditions existing under the Stars and Stripes with those in almost every other part of the world, they will appreciate as never before their blessings.

* * *

No section of this whole blest country has more occasion for heartfelt thankfulness than California. Note the eloquence of some of the figures on the page opposite this. There may be seen figures with wonderful power to convince of California's greatness. Fifty of the highest producing counties of the United States are listed. More than a fourth of those 50 counties are located in California. Of the highest nine, six are in California, and of the highest four, three are Californian, and the place of honor for producing highest value of crops and livestock products is held by Los Angeles and Fresno Counties.

* * *

Speaking of great productions, California dried fruits are not always appreciated as they might be. For instance, 176,000 tons of raisins, one of our cured fruit products, means the labor of many thousands of hands on many thousands of acres. Other cured fruit products are the wastes of our apple orchards, 5,500 tons; apricots, 9,500 tons; figs, 12,300; peaches, 26,000; pears, 2,700; prunes, 97,500; raisins—and more accurately than the figures given above, 176,870; a total of cured fruits of 330,370 tons. The above are from figures gathered by the California Fruit News.

* * *

It is also worth while for us to consider not only our own blessings with thankfulness, but the "opportunity for very great service awaiting us if we shall prove equal to it." And America will prove—has proved—equal to the occasion of lending a hand to all the world, and through the Red Cross, Near East Relief, and other activities, opportunity at this Thanksgiving and Christmas time will be availed of.

A CALL TO THE SOUTHWEST

The League of the Southwest through its secretary-treasurer, Arnold Kruckman, is issuing a call to all the Southwest to send representatives to a great meeting to be held at Riverside, December 8, 9 and 10.

Quoting from its constitution the League is:

"A non-political alliance between the states of Arizona, California, Colorado, Nevada, New Mexico, Oklahoma, Texas and Utah to foster closer social and commercial relations and to link the communities of the Southwest in a spirit of brotherhood and the promotion of the civic, commercial and social interests of the territory."

Convention headquarters is Mission Inn, Riverside.

Here is the call:

Discussion through the Southwest has evolved so many new and conflicting angles in the consideration of the project to develop the resources of the Colorado river that it is believed the complex situation may best be clarified by a meeting of all elements at interest.

The members of the League of the Southwest therefore have ordered that a special meeting be called for the sole and express purpose of considering the present status of the project to develop the Colorado river resources. By an overwhelming vote of the membership Riverside was chosen as the place of meeting. The meeting is therefore called at Riverside on December 8, 9 and 10, 1921.

Since public thought has focused upon the proposal to build a dam in Boulder Canyon and the government's investigations have crystallized in an unpublished report prepared by Director Davis of the U. S. reclamation service (in obedience to the terms of the Kinkaid Act) this document will necessarily be an important topic of discussion. It is assumed that Secretary of the Interior Fall, as well as Director Davis, will be present to ascertain the sentiments of the people of the Southwest and give the meeting the benefit of their counsel.

The Interstate Colorado River Commission, which came into being as a result of the activities of the League of the Southwest and was created by the joint action of the federal government and the several states in the Colorado River Basin is expected to have its initial meeting concurrently.

Aside from the governors and other notable men and women of the Southwest it is anticipated distinguished persons from various branches of the federal government, as well as other eminent persons representing influential factors in the nation, will participate in the program.

This call is addressed to all constituent members of the League of the Southwest and to all other organizations in the states embraced in the League of the Southwest.

Your organization is earnestly and strongly urged to be fully and adequately represented by a large delegation at this meeting which will consider problems immediate and vital to the prosperity, welfare and future of your community.

COOPERATIVE MARKETING

The census bureau has given California some wonderfully interesting figures, but for once we have just a bit of a grouch. This is because of the report of the bureau on cooperative marketing and purchasing. According to that report of California's 117,670 farms there are only 25,772 reported as marketing their products through farmers' organizations, and many other states make a far better showing in this particular. For instance, Minnesota reports 78,314 farms marketing through cooperative organizations. Now then, we who live in California and know of the 12,000 or 15,000 citrus growers, 13,000 or 14,000 raisin growers, 7,000 peach and fig growers, 3,000 or 4,000 almond growers, 7,000, or possibly 10,000 prune growers, besides walnut growers, milk producers, poultry raisers, bean growers, pear growers, potato growers, alfalfa growers, and growers of almost every one of our products, which are largely marketed through cooperation, and we cannot help but feel that many farmers in filling out their blanks failed to report the fact that their products were moving through cooperative organizations. Of course we realize that some of these producers may market through two or even more associations, for instance, many members of the walnut growers' association are likewise members of the citrus growers' association, and this in the census would only count as one farm reporting, but even this consideration does not explain wherein California only has 21.9 per cent of her farms reported as marketing cooperatively.

But even in this report California is a star of the first magnitude in value of products marketed cooperatively. The value of productions of this state marketed through cooperative organizations is $127,990,981, and the next state, which falls far below us, is Minnesota, the first state as to number of farms cooperatively marketing, with $82,760,459.

Cooperative purchasing has not proved as popular in any of the states as has cooperative marketing. Only five states of the Union report the purchasing of over $4,000,000 worth of products cooperatively. These are Kansas, Nebraska, Iowa Minnesota and California, ranking in the order named.

SANDING THE MANURE

We used to hear of the grocer sanding the sugar in order to increase the profits and help pay rent, but sanding manure is a new one. Back in the grain growing days California manure piles were considered a source of expense and a great nuisance. Many a barnyard was relieved of its burden and soft dirt roadways made more travellable by hauling strawy material, and distributing over them. The benefit was hardly sufficient to cover the cost, yet the stuff had to be disposed of. Today it is different, and every scrap is gathered together and shipped from the city to the orchardist, who is paying long prices. The worth of a carload is gauged by its weight, or, in other words, it is sold by the ton, and a stream of water played over a load of manure before placing it aboard a train adds very nicely to the profits of the manure vender. In time of drouth a few loads of sand answer fully as well, and the buyer, who is Mr. Orchardist, is none the wiser, though considerably the poorer. T. M. Pierce of the state department of agriculture, has been doing some gum-shoe work, and has caught red-handed several middlemen in the manure business. In this campaign he has been aided by the Los Angeles police and has had quite a thrilling experience in bringing to justice a bunch of criminals. Good stiff fines have been imposed upon these law violators.

MORE COOPERATION

Californians were never offered such opportunity for benefiting themselves as today. This state is greatly blessed in its opportunities for conservation of water and hydro-electric power, but all these years the opportunity has not been taken advantage of and waste, and even disaster, has come. Today from one end of the state to the other producers are asking why are we not using this power and at a cost which is not prohibitive. Horace Porter, mayor of Riverside, is dealing some sledge hammer blows in the campaign for securing this power by the people and for the people. In an address recently made at Claremont he said:

"We must have cheap power for the farm and ranch. It is demanded there I think more insistently than anywhere else. For on the farm and ranch the home cares are the heaviest, and life holds the most drudgery. But I specially think of the California rancher, the man who produces our food and the prime necessities of life, on whom we are all absolutely dependent for life itself, the California rancher, who must so often have power to lift the waters from the deep well to supply every acre of corn or alfalfa or orchard; power to pump water for home and for thirsty cattle; power, cheap power, is his first necessity. And yet so short-sighted and suicidal are the private power companies of California that they are putting the power prices up and up for the rancher until he cannot pay his power bills. He cannot water his fields; he cannot water his cattle; his home returns to the desert for lack of cheap power."

DISARMAMENT

There is yet no excess of plowshares because of discarded armaments, but there is a great hope in the heart of the world that steps have been taken at Washington which may be considered the initial ones for the ending of world war. The endorsement given by three great powers to the Hughes plan has received world wide approbation. Let us all hope and pray that these days of great opportunity between Armistice Day and Thanksgiving of 1921 may give new meaning to the observation of those days to all the world for all time to come.

California Cultivator

Vol. LVII, No. 21 | Los Angeles, November 19, 1921 | One Dollar Yearly

California Counties Lead in Agricultural Crop Values

OF THE 50 leading agricultural counties in the United States, as shown by the 1920 census, California has 13, and the best of it is the two highest of all are likewise California counties. The Cultivator takes satisfaction in the fact that in its issue of April 2 it gave advance information made possible by preliminary figures given out by the bureau of the census. The table printed at that time gave probable ranking of the various counties, with Los Angeles first and Lancaster County, Pennsylvania, second. As will be noted in the table below, Fresno County now comes second, and in the first ten of the counties of the United States California has five, or one-half, namely, Los Angeles, Fresno, San Joaquin, Tulare, Sonoma, and in the highest 50 counties in the United States California has 13.

California has been accused of both boosting and boasting, but are not these figures given out by the bureau of the census justification for a very great pride in our own state? Also notice in the list below the great proportion of high producing counties which are on the Pacific Coast or in the far West. These figures include not only crops but, as well, all livestock products, and coming, as this announcement does, at our harvest and Thanksgiving season concretely shows the result of effort and of vision in using the opportunities placed before us. California, the West, the Union has in this report much to be thankful for.

The comment of the department of commerce, through its bureau of the census in giving out these figures, is as follows:

The census bureau has determined the rank of the 50 counties in the United States leading in the combined value of farm crops and livestock products in 1919. The livestock products include dairy products, chickens and eggs, honey and wax, wool and mohair, but not domestic animals sold and slaughtered. There is some duplication, to be sure, when the value of crops and the value of livestock products are included in the same total, by reason of the fact that a large part of the livestock products are derived from the feeding of farm crops to farm livestock. This combined value, however, appears to offer the best available index of the counties' agricultural production.

The 50 leading agricultural counties were distributed among the several states as follows: California, 13; New York, 7; Illinois, 5; Texas, 4; Pennsylvania, 4; South Carolina, 4; North Carolina, 3; Washington, 2; Wisconsin, 2; and 1 each for Arizona, Colorado, Connecticut, Maine, Minnesota, and Mississippi.

Los Angeles County ranked first among all counties in the United States in the combined value of crops and livestock products in 1919, the total value amounting to $71,579,899. The value of crops in this county was $61,864,479, which was greater than the combined value of crops and livestock products in any other county. Oranges contributed slightly more than one-third of the combined value of crops and livestock products in this county. Other important items were lemons, walnuts, and hay and forage.

Fresno County ranked second among all counties, with a value of $55,110,101 for crops and livestock products, and stood third in the value of crops alone, with $51,861,252. Grapes made up a little more than one-half of the combined value of crops and livestock products, with peaches and hay and forage following in order.

Aroostook County, Maine, stood third in the combined value of crops and livestock products, with $54,376,256, and was second in value of crops, with $52,541,205. Potatoes comprised about four-fifths of the combined value in this county, while hay and forage was the next item in importance as regards value.

San Joaquin County ranked fourth, with a combined value of $41,191,240 for crops and livestock products and also stood fourth in the value of crops, with $37,956,866. Potatoes, grapes, barley and hay and forage were the leading items from the standpoint of value.

Lancaster County, Pennsylvania, was fifth in rank, with $40,776,212 representing the value of crops and livestock products. Tobacco, corn, hay and forage, and wheat were the most important items, in the order named.

Yakima County, Washington, stood sixth in value of crop and livestock products, with $34,741,710. Apples and hay and forage were the leading items as regards value.

Other counties, with their rank according to the combined value of crops and livestock products in 1919, were as follows: Tulare County, seventh, with $34,036,167; Sonoma County, eighth, with $32,300,623; Whitman County, Washington, ninth, with $31,921,047; and Dane County, Wisconsin, tenth, with $29,395,753.

The 50 counties whose rank in the combined value of crops and livestock products has been determined are shown in the following table:

* * *

As noted above, the figures already given have to do with the production in certain counties of California for the 12 months preceding January 1, 1920, and not including livestock slaughtered and sold. Therefore, just a word as to the wealth of our state in livestock. There were in California, January, 1920, 99,661 farms reporting livestock of a value of over $200,000,000. Of horses there were 402,407, mules 63,419, sheep 2,400,151, goats 115,759, swine 909,272.

The number of "dairy cows," including heifers one year old and over, was 613,958, as compared with 467,332 "cows kept for milk" reported for April 15, 1910. This represents an increase of 146,626, or 31.4 per cent. The number of "beef cows" reported for January 1, 1920, was 575,279, as compared with 576,909 "cows not kept for milk" reported for April 15, 1910, representing a decrease of 1,630, or 0.3 per cent.

County and State	Value of Crops and Livestock Products Rank	Value of Crops and Livestock Products Amount	Value of Crops Rank	Value of Crops Amount	Principal Products
Los Angeles, Calif.	1	$71,579,899	1	$61,864,479	Oranges, lemons, hay and forage, walnuts.
Fresno, Calif.	2	55,110,101	3	51,861,252	Grapes, peaches, hay and forage, dairy products.
Aroostook, Me.	3	54,376,256	2	52,541,205	Potatoes, hay and forage, oats, dairy products.
San Joaquin, Calif.	4	41,191,240	4	37,956,866	Potatoes, grapes, barley, hay and forage.
Lancaster, Pa.	5	40,776,212	5	32,191,536	Tobacco, corn, hay and forage, wheat.
Yakima, Wash.	6	34,741,710	6	32,458,658	Apples, hay and forage, potatoes, peaches.
Tulare, Calif.	7	34,036,167	8	30,547,341	Grapes, oranges, hay and forage, dairy products.
Sonoma, Calif.	8	32,300,623	42	17,477,370	Eggs and chickens, plums and prunes, apples, grapes.
Whitman, Wash.	9	31,921,047	7	30,824,407	Wheat, hay and forage, oats, barley.
Dane, Wis.	10	29,395,753	25	20,978,957	Dairy products, hay and forage, corn, oats.
McLean, Ill.	11	29,161,454	9	26,938,018	Corn, oats, wheat, hay and forage.
San Bernardino, Calif.	12	27,957,448	10	26,517,455	Oranges, lemons, grapes, hay and forage.
Maricopa, Ariz.	13	26,819,662	12	24,054,416	Cotton, hay and forage, dairy products, wheat.
St. Lawrence, N. Y.	14	26,809,540	108	13,582,476	Dairy products, hay and forage, potatoes.
Orange, Calif.	15	26,635,748	11	25,572,032	Oranges, walnuts, lemons, sugar beets.
York, Pa.	16	26,600,746	26	20,953,838	Corn, wheat, hay and forage, eggs and chickens.
Santa Clara, Calif.	17	26,135,980	14	23,792,684	Plums and prunes, apricots, hay and forage, dairy products.
La Salle, Ill.	18	25,828,420	15	23,604,661	Corn, oats, wheat, hay and forage.
Champaign, Ill.	19	25,619,290	13	23,800,535	Corn, oats, wheat, hay and forage.
Livingston, Ill.	20	24,153,905	19	22,199,150	Corn, oats, eggs and chickens, wheat.
Bolivar, Miss.	21	23,703,571	16	23,114,901	Cotton, corn.
Iroquois, Ill.	22	23,627,284	22	21,474,008	Corn, oats, eggs and chickens, wheat.
Anderson, S. C.	23	23,528,158	20	22,012,165	Cotton, corn.
Orangeburg, S. C.	24	23,427,879	18	22,904,976	Cotton, corn.
Robeson, N. C.	25	23,389,828	17	22,955,950	Cotton, tobacco, corn.
Weld, Colo.	26	23,203,475	23	21,198,360	Sugar beets, hay and forage, wheat, potatoes.
Dodge, Wis.	27	23,049,660	90	14,331,352	Dairy products, hay and forage, oats, corn.
Stanislaus, Calif.	28	22,758,641	47	17,140,414	Hay and forage, dairy products, barley, wheat.
Hartford, Conn.	29	22,751,488	35	18,779,160	Tobacco, dairy products, hay and forage, corn.
Williamson, Tex.	30	22,324,436	21	21,500,490	Cotton, corn, oats, hay and forage.
Chautauqua, N. Y.	31	22,316,250	74	14,983,214	Dairy products, hay and forage, grapes, eggs and chickens.
Chester, Pa.	32	22,261,956	83	14,567,299	Dairy products, corn, hay and forage, wheat.
Sacramento, Calif.	33	21,981,958	27	19,845,858	Dry beans, wheat, hay and forage, grapes.
Pitt, N. C.	34	21,486,117	24	21,052,441	Tobacco, cotton, corn.
Otter Tail, Minn.	35	21,474,949	41	17,568,127	Wheat, hay and forage, dairy products, potatoes.
Berks, Pa.	36	21,447,279	71	15,232,909	Corn, dairy products, hay and forage, potatoes.
Erie, N. Y.	37	21,294,818	87	14,443,343	Dairy products, hay and forage, potatoes, eggs and chickens.
Spartanburg, S. C.	38	20,887,542	28	19,556,658	Cotton, corn.
Ellis, Tex.	39	20,375,681	29	19,262,474	Cotton, corn, oats, wheat.
Riverside, Calif.	40	20,253,304	33	18,934,265	Oranges, cotton, hay and forage, lemons.
Imperial, Calif.	41	20,195,367	46	17,200,734	Cotton, kafir, milo, etc., hay and forage, dairy products.
Fannin, Tex.	42	20,163,821	30	19,246,092	Cotton, corn, oats, wheat.
Steuben, N. Y.	43	19,938,904	77	14,805,641	Hay and forage, potatoes, dairy products, oats.
Jefferson, N. Y.	44	19,918,631	239	10,694,423	Dairy products, hay and forage, oats.
Johnston, N. C.	45	19,812,510	31	19,229,785	Cotton, tobacco, corn, sweet potatoes.
Delaware, N. Y.	46	19,832,943	....	7,972,256	Dairy products, hay and forage.
Marlboro, S. C.	47	19,419,921	32	19,136,190	Cotton, corn.
Onondaga, N. Y.	48	19,395,595	97	14,112,780	Hay and forage, dairy products, potatoes, eggs and chickens.
Lamar, Tex.	49	19,305,636	36	18,270,287	Cotton, corn, hay and forage.
Ventura, Calif.	50	19,160,414	34	18,829,031	Dry beans, walnuts, lemons, oranges.

Agricultural News Notes of the Pacific Coast

Northern California

The Butte County farm bureau has started its membership drive.

Tehama County's farm bureau is conducting a membership drive.

The University of Califonia reports securing over $900,000 in its stadium campaign.

One car Alicante wine grapes shipped from Lodi by the Exchange brought $4282.

A Thanksgiving song festival will be held at the state armory at Sacramento November 22.

The state university will give short courses in tractor operation at 14 localities throughout the state.

Logged-off lands about Susanville Lassen County, are being found well adapted to apple growing.

The women of several towns in Glenn County have organized a "buy a tree" campaign, the trees to be used in planting county highways.

Potato growers in the Delta district have received another 25 cent advance in wholesale prices. A large per cent of the crop is going into storage.

A series of meetings is being held in Sonoma County by the farm bureau poultry department to explain working plan of the accredited hatchery list.

The quail season in Del Norte, Humboldt and Siskiyou Counties will close on December 15, while elsewhere in the state it will close on January 15.

Four hundred bales of hops sold last week at 25 cents. This is below recent sales but growers who have not contracted their crops feel sure of an increase in price soon.

The Sonoma County Grange will hold a special session the last Monday in December at which it hopes to have present members of the National Grange who have come down from the Portland meeting.

Forty of the 54 Japanese language schools already established in California are distributed among the northern and central counties of the state, as compared with 14 in the southern counties.

Officers of the Placer County Growers Canning Association are: W. F. Kelps, San Francisco, president; Dana Perkins, Rocklin, vice president; J. A. Gray, Roseville; E. G. Sprinda, Cool; C. B. Freed, Newcastle, directors.

The California Canning Peach Growers was formally organized at Stockton, November 1. This is an outgrowth of the activities of the Sutter Peach Growers. A state wide membership campaign is now being carried on in all peach growing districts.

O. E. Squires of Willows and H. S. Brink of Biggs were appointed as representatives of the Rice Growers Association of California to confer with the University of California on survey of rice conditions in the state for which the last legislature appropiated $10,000.

The Susanville chamber of commerce announces that surveys are to be made at once of the Long Valley project in Lassen County. It is claimed that waters diverted from the Little Truckee river will make possible irrigation of 25,000 acres of productive land.

Central California

Lindsay, Tulare County, expects an orange crop much heavier than last year's.

The Exeter district will ship 400 to 450 cars of Emperor grapes this season.

A large acreage will be planted to lettuce this winter in the Delano section of Kern County.

The Tulare board of trade has selected space at the Visalia citrus fair to be held next month.

Lindsay, Tulare County, will ship about 60 carloads of pomegranates; other sections of the county about the same quantity.

Four hundred head of feeder cattle were received from Nevada last week by Charles Kassabaum of Waterford, Stanislaus County.

The senate agricultural bloc in conference October 31 decided that a 3 cent tariff on beans should be included in the permanent tariff.

Hog auction sales in Kern County will be held at Bakersfield, November 19; McFarland, 25; Wasco, December 3; Bakersfield, 17; McFarland, 23.

Directors of the California Bean Growers in the Stockton-Modesto district are: J. A. Aggler, Stockton; J. G. Berryhill, Modesto; I. L. Borden, Stockton.

The rate on beans by river boat from Stockton and Sacramento to San Francisco has been reduced by the railroad commission from $1.87 to $1.60 per 100.

Members of the California Peach and Fig Growers have received final payments for the 1920 crop. This settlement was for figs received from growers in February.

Officers of the California Bean Growers are: J. W. Mendenhall, president; I. L. Borden, vice-president; Clinton L. Danly, secretary-treasurer; Robert H. Frazer, manager.

The peach crop of Sanislaus County ran about 30,000 tons, of which half was canned at Modesto and Turlock, 10,000 tons at other canneries and 5,000 tons shipped to Eastern markets.

Practically all the beans are harvested in the Hughson district of Sanislaus County. Dry weather has made it possible to put practically the entire crop in warehouse in perfect condition.

There has been such brisk demand for the one pound cartons of raisins that the association is putting up a second lot in addition to the quantity that was considered sufficient at the beginning of the season.

President Mendenhall of the California Bean Growers in commenting on the coming year's business said that the management had made connection with at least 360 selling agencies throughout the country.

At a special meeting of the board of directors of the California Bean Growers on October 29 it was decided that sufficient beans of the 1921 crop had been secured to warrant continuance of the association's activities.

Lindsay citrus growers met last week to discuss shipping their fruit through the Panama Canal. Vice-president Whitcomb of the California Fruit Growers Exchange explained the plan now being followed by the southern growers.

Southern California

Imperial Valley farmers are planning a series of tests of various varieties of barley.

The fruit exchange at Orange is to build a $20,000 office building.

Los Angeles county farm bureau is conducting a membership drive.

Ventura County Walnut Growers reports all walnuts harvested and sold.

Ventura County sugar beet growers have figured the total production cost per acre $57.53.

Riverside beekeepers have voted almost unanimously in favor of cooperative marketing.

Beekeepers of Southern California will meet at Exposition Building, Los Angeles, December 5-10.

Fullerton packing house closed the season with 850 cars of citrus fruit shipped out this season.

Members of the Orange County farm bureau are planning erection of cold storage plant at Tustin.

More than 2,000 bales of cotton of the 1921 crop have been handled by gins in the Palo Verde Valley.

The state highway commission is calling for bids on a $50,000 highway near Garden Grove, Orange County.

Southern California was given some of the hottest October days which have been experienced for 21 years.

The San Dimas Lemon Association recently held its 21st annual meeting with banquet and review of last year's business.

Walnut growers have estimated that at least 25 per cent of the output of their orchards could be shipped by the way of the Panama Canal.

The Orange County Poultry Association, organized many years ago but not functioning for the last two years, is being reorganized and will stage a show some time in December.

San Fernando Valley is contracting to raise pickles for the Heinz Company. Some cucumber growers in the Compton district, Los Angeles County, secured as high as $400 per acre last year.

Coachella Valley Grape Growers Association has filed bylaws and organized a new association. The directors are: C. R. Cawthorn, O. Geissler, C. W. Hude, secretary; C. R. Patterson, Hugh W. Proctor and A. O. Hayward.

In many counties the last day for making payment of fall taxes before delinquency is the last Monday in November. In others it is the first Monday of December. There may be still other delinquency dates but don't pay penalty.

At the last meeting of the Ventura County farm bureau Adviser Staunton set before members figures he has collected from beet growers as to exact cost of all cultural operations the past year. The conclusion of the attendants was that either there should be more tonnage per acre or more pay per acre.

A warrant charging violation of the state motor vehicle act in exceeding the speed limit allowed trucks has been sworn to by Charles A. Whitmore, state highway commissioner, against the drivers of the Hodge Transportation Company of Los Angeles and is the first action of the kind ever taken by the state highway commission.

The Coast and General

Michigan's bean crop is a million bushels short of last year's.

Texas reports ideal harvesting season, being both warm and dry.

Operation of the emergency tariff has been extended to February 1, 1922.

Warehouses in Walla Walla County, Washington, are well filled with wheat awaiting shipment.

Beekeepers of Yakima, Washington, say that they have experienced heavy losses from spraying of fruit trees.

The irrigation district at Medford, Oregon, will soon be completed and water will be put on 14,000 acres.

Pacific County, Washington, has harvested over 20,000 boxes of cranberries. Practically all the crop has been shipped.

There are few arrivals of Oriental beans at Seattle. Local importers are buying only on orders and in small quantities at that.

Sheep are being brought down from the mountain ranges near Flagstaff, Arizona, and driven to the southern grazing grounds.

Wasco County, Oregon, expects to ship 275,000 packed boxes of apples. A very large percentage are running large and well colored.

The Interstate Fair at Prineville, Oregon, especially featured livestock exhibits though everything that grows on the farm was shown.

Thirty-three states have representatives at the 55th annual of the National Grange which is in session at Portland, Oregon, November 16-25.

The Colorado Pinto bean crop came in several weeks ahead of usual maturity due to early planting and favorable weather. There is no carryover from last year.

New Mexico bean growers report their Pintos being shipped to all parts of the United States and growing in popularity steadily. This year's quality is highest in years.

The Western Royal Livestock Show at Spokane, Washington, was held the week preceding the Pacific International at Portland and brought out some 3,000 head of livestock.

Oregon raises practically no beans, the bulk of its requirements being supplied by California. In order of amount consumed varieties bought are: Small Whites, Limas, Pinks, Bayos, Red Mexicans.

The state of Washington now holds first place of all the states in the union in the production of apples. It now claims a production of 6,543,000 barrels. Her nearest competitor is New York with 3,307 barrels.

There is a contest on between the milk producers of Spokane and the distributors because of the distributors endeavoring to raise the price of milk to the consumer from 10 to 13 cents a quart. Producers are uniting with the consumers in the fight.

Prof. J. W. Gilmore of the University of California, now exchange professor at University of Santiago, Chile, writes of two new beans that he has found, one of which is grown among the Indians of Chile, and the other suitable for higher elevations. He is collecting samples of all beans grown in Chile, and expects that some of them will prove to be better than those we already have in California.

Topworking Citrus Trees

By Robert W. Hodgson

With every period of depression in the citrus industry there comes the inevitable revival of interest on the part of growers in the practice of topworking. Perhaps the best testimony to the fact that periods of low prices in the citrus industry have alternated with seasons of prosperity from the very beginning is that bearing citrus orchards not yet 30 years of age have been topworked four times. Much interest is being manifested in topworking through the campaign launched by the agricultural extension service in Los Angeles County for the elimination of drone trees as a means of reducing production costs in the face of price declines of the past two years. It is estimated that approximately one tree out of four in the citrus orchards of California does not pay for its keep, and elimination of this source of waste must be expected to materially affect the profit side of the ledger.

Are Topworked Trees Successful?

In certain sections the question of the success of topworking bearing trees is under some discussion, there being some growers who are inclined to doubt the success of budding over old trees. These point out certain orchards which were topworked years ago and which are now yellow and unhealthy in appearance and failing in yield. Those holding the other point of view have little difficulty in finding similar topworked orchards which are today in most excellent condition and bearing heavily. Indeed it would seem that the weight of evidence were with the latter, although it must be admitted that in certain districts the majority of the topworked orchards are going back.

There seems to be no reason why topworked trees should not be as satisfactory in every way as those not topworked. The fact is that all citrus trees planted today in California are topworked in the nursery row. Topworking bearing trees is in no essential different from budding nursery trees. And the fact is that the majority of the old topworked orchards are doing quite satisfactorily. In fact, one of the orchards above referred to as topworked four times is counted among the most profitable in its district and is in splendid condition of thrift and vigor.

Close examination of those orchards where, after a period of years, topworking is claimed to be unsatisfactory, in almost every instance will uncover the fact that the work was not properly followed up. Large stubs were left where the old branches were cut off, which failed to heal over on account of being improperly made or poorly sealed. The result is heart rot in the interior of the tree, with inevitable decline. The products of decay, unable to gain outlet, are absorbed by the growing layer of the tree and, like an abscessed tooth, are certain to cause trouble. Gumming, yellowing and die-back follow in slow progression with the final result that the tree is worthless. On the other hand the writer has yet to find a case where the work of budding was properly followed up—all stubs sloped off to the growing buds the year following the work and all wounds sealed and kept sealed until entirely healed over—where anything but satisfactory results followed the topworking.

Methods Used

There are a number of methods of working over bearing trees in common use, all of which can be classified under two general methods, inserting the buds under the bark on the older branches or cutting the trees back and growing new shoots which are then budded in exactly the same manner in which nursery stock is budded, namely, shield budding.

The former method is perhaps that in most general use at the present time for topworking and is used in the recent series of topworking demonstrations in Los Angeles County, held by the agricultural extension service in cooperation with C. S. Milliken of the Fruit Growers Supply Company. Inserting the buds into the old bark may be done at any time when the sap is flowing freely and the bark lifting well. Perhaps the best months for this method of topworking are August and September. Buds inserted at this time set and heal in well before active sap flow ceases, and remain dormant and safe from frost injury through the winter period. The branches in which the buds were placed should be cut back to a point 8 to 15 inches beyond the buds in early March. The buds are thus forced into growth and get the full benefit of early spring growth, the result being a large top before the coming of cool weather in the fall.

If budding is delayed until the bark lifts in early spring there is a loss of six weeks to two months of the season's growth which results in just that much smaller top to go through the possible cold weather of the next winter.

The technique of topworking by this method is relatively simple. The first thing is to select the branches to be budded and the place where the buds should be inserted. Many budders make the mistake of putting in too many buds and of budding too many branches. Five to six framework branches are ample for any citrus tree, and these should not average more than two buds to the limb. Two to the limb are generally inserted as a means of making certain that one has enough buds for the head of the tree. If the top is made from five buds, one to each scaffold branch, usually the result will be better than if the top is formed from twice that number.

Another common mistake made is in inserting the buds too far out from the main crotch. They should be placed not more than two feet from the crotch and with small or even average sized trees closer than this.

After cutting out those branches into which no buds are to be inserted and selecting the place for inserting the buds it is a good practice to lightly scrape the bark where the bud is to be placed, using the back of the knife blade. This accomplishes two things; it thins the bark and makes it easier to handle, and it cleans it off so that the cut surface of the bud is not fouled with dirt as it is being inserted.

An inverted T cut is then made, taking care not to make the cross cut too deep, not deeepr than just through the bark. The bark is now gently raised, either with a special bone instrument or with the cut end of the bud stock. Unless this is done it is exceedingly difficult to insert the buds, especially where the trees are old and the bark thick. The bud is now carefully cut from the bud stick, taking care to make it reasonably large and taking considerable wood with it. It is then inserted in the cut and pushed into place, using the shoulder made by the leaf petiole. It should be pushed well up into place. The bud should now be thoroughly covered over, using waxed cloth, beginning at the lower end and winding upward. This insures shedding of water. The limb should be bound tightly so as to hold the bud firmly in place in order that early union between the two cambium layers may occur. The waxed cloth may be tied at the top, or a simpler and easier method is holding the end by means of a tack. An effort should be made to place the buds on the inner sides of the branches where possible. A much better union results and the bud is much less apt to break out than if placed on the outside. This is frequently not possible, however, because of the thinness of the bark on the upper sides of the branches and inability to raise it from the wood.

In from three to six weeks after inserting the buds, depending upon weather conditions, the waxed cloth is unwrapped and the buds examined. If the work has been done well the buds should have healed in well and a thorough union resulted. If spring budding has been done the branches are now cut back and the buds forced into growth; if fall budding, they are allowed to remain dormant over the winter.

There are some differences in practice among successful budders but merely in matters of detail. Some cut the bud from the bone and some from below, some insert them from above and some from below, all however inserting them right side up. Some cover the entire bud with the waxed cloth, others leave the eye exposed. All agree, however, that the essentials are a sharp knife, clean work, good buds, and firm wrapping.

Where the second method is used it is usually impossible to select new growth large enough for budding before late June or early July. The safest procedure is to insert buds into this growth but encouraging them to remain dormant by not cutting the branches back until the following spring. From two to three of the best shoots per limb and properly spaced should be budded, it being understood that either one or two should be cut away after the first season's growth, leaving the top eventually formed of not more than eight or ten buds. In this method ordinary nursery budding practice is used and waxed cloth is not necessary for success, budding twine being sufficient.

By the use of either method it is possible to topwork citrus trees so that at the end of four years the tree is again in good bearing and practically as large as at the time of the operation. Of course it goes without saying that only the best selected bud wood should be used, else the trouble of topworking is all in vain.

Bean Association Will Continue

At a special meeting of the board of directors, Saturday, October 29, it was unanimously decided that sufficient beans of the 1921 crop had been secured to warrant the continuance of the association.

In commenting upon the decision of the directors to carry on the work of the association, which was begun a little more than three years ago, President Mendenhall said, in part:

In making this decision to continue the association, I am firmly of the opinion that we, as bean growers, have done the only thing possible if we expect to make bean growing a profitable industry.

I do not believe the average bean grower realizes or appreciates the tremendous amount of work that has been accomplished during the past three years nor the handicaps with which the association has been confronted during that period. You, as directors, are fully aware of the conditions that have faced us, many of which have and are being overcome, until today the association stands as a tangible, strong, working, cooperative organization and is now in a position to give to its members the service which has always been its objective.

The history of the association to date may be briefly summed up under three heads; formative, constructive and objective. During its formative period the association faced unusual conditions, discouragements and handicaps; the World War, overproduction and damaged crops. However, despite all of this we have definitely accomplished something worth while.

We have sold the crops, perfected an accounting system and made sales connections; arranged to finance the crop whereby we can take care of our members.

By our financing system, members are not compelled to dispose of the crop at harvest time to speculative interests which reap the benefits which rightfully should be enjoyed by the grower. Previous to this, 75 per cent of the bean crop was out of the hands of the grower within 60 or 90 days after threshing and at a period when prices are lowest.

The association secured, through its tariff committee, an emergency tariff of two cents, and word has just been received from Washington that our Western senators have pledged themselves to demand a three cent tariff on Oriental beans. Even though we had only accomplished this latter thing the association has been of great value to the growers.

To do all of these things has taken time and money. No organization is built in a day, a month or a year. It is only through a process of careful elimination, of learning by actual experience, that a smoothly functioning business of any character can be erected, and the association has now reached that condition.

Now that we have passed through the formative and constructive periods the association is ready to put into execution those plans which it is absolutely necessary to carry out if bean growing in California is to be made profitable.

California consumes but a small per-

centage of the beans it produces. They go into the markets of the Middle West, East and South. It has been absolutely necessary to make selling connections in all of the distributing centers in order to find an outlet for the crops. These connections have been made, some 360 of them.

This was all constructive work and took time. The individual grower could not have done this and would be forced to sell his crop through channels largely speculative, without knowledge of prices, market conditions or supply and demand, accepting what the buyer offered. By means of the association's selling organization he is protected by the information it has of when, where and at what price beans may be sold. He has at his command the aggregate knowledge and definite, valuable information gathered from every section of the country.

California beans are in competition with those of five other producing states, all closer to the consuming centers, which demand the highest grades. Therefore California beans must be standardized and standardization can only be accomplished by means of organization. This is another of the vital things the association is prepared to do. It has established a constantly increasing demand for California beans, but to keep that trade the product must be standardized and have the backing of a responsible seller. The buyer in New York, Boston, Chicago or elsewhere does not know the individual grower, but he does know the association, its standing and responsibility, and also knows that when he receives a car of association beans they are of a standard quality and, therefore, has no hesitancy in offering them to the trade and receives the highest market price, which means that the grower also profits accordingly.

It is only through concerted, organized cooperative effort that we can increase consumption of beans by means of publicity as to their uses. Every time consumption is increased one sack, the grower benefits proportionately. The individual grower is unable to do this, but collectively he can.

The association has secured reduction in rail and water freight rates, assisted in getting passed remedial legislation affecting the farmer, secured an emergency tariff, and the prospects are very bright that a permanent tariff will be passed that will permit of the bean grower producing his crop at a living profit, by the elimination of the Oriental bean. None of these things could have been accomplished by the individual, but have been by the association.

I might continue indefinitely in telling of what benefit the California Bean Growers' Association has been to the grower, but I do wish to impress upon those loyal grower members who have stood by it through its early days that it was only by their loyalty that it has been able to continue and eventually carry out the constructive, beneficial policies which are now in process of consummation.

You have wisely decided to carry it on and I firmly believe that our association will eventually have the hearty cooperation and support of every bean grower in the state when they begin to realize just what this organization stands for and has actually accomplished.

AMERICAN FARM BUREAU

Next week will be a great one in the ranks of the farm bureau people of America. Monday morning at 10 o'clock President James R. Howard will call to order the third annual meeting of the American Farm Bureau Federation at Atlanta, Georgia. The sessions will continue through Tuesday and Wednesday on questions primarily of national scope, but in a measure handling questions of particular interest to the southeastern part of the country. Such topics as "The Crisis in Southern Agriculture" and "Cotton Marketing" are particularly of interest to southern growers, to all in the nation such questions as taxation, transportation, finance, marketing, especially grain and livestock marketing.

An Iowa farmer will discuss "The Agricultural Bloc and Other Blocs" which from the title will have more or less pep. We note Dr. Walker, president of the California federation, has important place on resolutions and other committees and is director of conference singing.

NAVEL SEASON OPENS

The first carload of navel oranges left Oroville for New York last week and Tulare is following on the heels of the northern county. The state department of agriculture has been making tests of the early season shipments and so far finds that practically all fruit is well over the 8 to 1 standard. Color requirements for shipping oranges will be rigidly enforced.

An eastern exchange is recommending the canning of salads. So long as we have canned bread and butter and pretty nearly everything else that is cannable, perhaps it is in order for the poor froze-ups back east to take the last step in canning and can salads. We, out here in California, prefer to be planting our salad seed about this time of the year, and the garden acts as the cannery.

Chicago packing houses have made material reduction in wages. One concern maintains its labor cost per hundred weight in 1915 was 40 cents while in 1921 it is $1.

HARVEST TIME

Through my long years of experience on the farm I have come to consider this season the most charming of the year. It's the time of the shortening day and the lengthening night. I know full well what it is to be awakened in the Iowa night by the flapping of the blind, the crow of the rooster, or the soughing of the wind in the trees outside the window and to note that it is darker than it was an hour or two before or when I went to bed. I cannot see my hand before me. It is the darkest hour of the night. Instantly I know that that darkest hour is the time when I should rise and go to work.

It is the night's darkest hour when the farmer gets up. He takes his lantern and goes to the barn. He feeds his stock. He milks his cows. He curries and harnesses his team. He goes to the house and eats breakfast, all before there is yet the first rosy tint of dawn in the east.

Breakfast over, the farmer hitches the team to his wagon and rattles off downhill, across the bridge and up the road into the cornfield. He pauses for it to get a little lighter; he cannot yet see his row. And while he is putting his sideboard over and getting his coat off he listens: From every direction there comes the sound of other corn wagons going to other corn fields. Soon there reaches his ear the rhythmic beat of the ears against the sideboards, the cadence of the corn, that corn which is converted into the gold and silver of commerce and manufacturing and industry. Where in all the world is there another song to equal it? Before noon the farmer brings in his load, and another at night.

We are in the dark hour just now. But it is time for us to get up and get our lanterns, whether we be farmers or manufacturers or business men. We want to get those chores done and our breakfast over for morning is close at hand. Let's put on an extra sideboard and grease up the old wagon this morning for we have got the biggest job we ever had ahead of us in America. It is going to take the energy and the faith of the American farmer combined with the energy and faith of the American business man to put it over. But we have just one common interest, service to the whole people.

As a farmer of this country, I ask you business men to join with us in the procession toward national prosperity.—J. R. Howard, President American Farm Bureau Federation.

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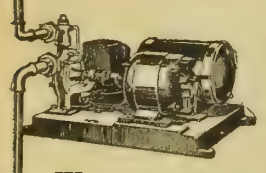

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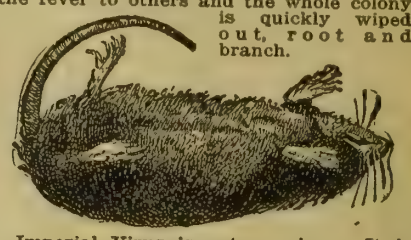

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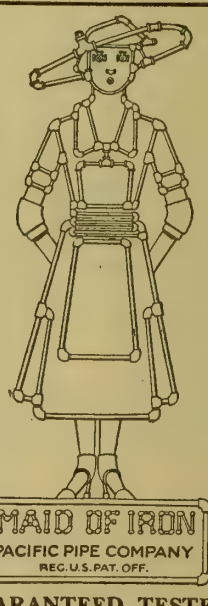

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Citrus Brown Rot Control

By Howard S. Fawcett

NO other species of fungus probably is capable of doing so much damage to citrus trees in California as the brown rot fungus—pythiacystis citrophthora. It is not only responsible during rainy, moist weather for brown rot of the fruit, but also for one of the most serious forms of gum disease—pythiacystis gummosis. The latter is often spoken of as lemon gum disease because lemon trees are most susceptible, but oranges and many other varieties of citrus trees, except the sour oranges, are also somewhat affected.

The fungus lives and popagates best in moist soils, especially those of the heavier type. During periods of rainy, damp weather when the rains and fogs continue during several days at a time, the fungus grows to the surface and produces motile spores that swim about in the films of water by means of cilia. During heavy rains the drops containing the spores splash up against the fruits that are hanging near the surface of the ground and infect them. Since these motile spores are killed by drying out they, as well as the fungus itself, are quite dependent upon moisture. This accounts for the occurrence of brown rot only during the rainy season and for the close relation of pythiacystic gummosis to excessive moisture in the soil near the trunk of the tree.

Losses in the Orchard

During some seasons the losses from brown rot of the fruit have been considerable. In one instance (an extreme case, one of the horticultural inspectors in Orange County counted 274 fruit affected with brown rot on a six year old lemon tree, all of which were less than three feet from the soil. There were left on the tree only about 200 fruits that were not affected, this being a loss of 58 per cent. Losses ranging from 15 to 25 per cent of the crop have been common in certain orchards.

The average number of brown rot lemons per tree in seven different unsprayed orchards, four to six years of age with branches low, ran as follows in February, 1916: 133, 80, 60, 59, 55, 30, 19. A similar orchard in the same section in which the soil and lower branches were sprayed with Bordeaux had no brown rot except on the lowest part where there were only an average of 1.3 fruit per tree affected. Fortunately, this loss can be almost entirely prevented by spraying the surface of the soil and the lower branches to a distance of about three feet with Bordeaux mixture. Where this had been done the brown rot had been cut down to almost nothing.

The results of one of the spraying experiments conducted by the citrus experiment station in cooperation with the Fruit Growers' Exchange in 1918 were as follows:

Bordeaux (4-6-50); number trees in plot, 20; number of brown rot fruits per tree, 0.75.

Lime-sulphur (5 per cent); number trees in plot, 30; number of brown rot fruits per tree, 11.1.

Not sprayed (check); number trees in plot, 10; number of brown rot fruits per tree, 12.1.

Although the brown rot was not severe in these experimental trees during this season, the results showed that Bordeaux spraying cut down the brown rot to less than one fruit per tree, while the lime-sulphur under the same conditions did not appreciably decrease the loss from brown rot over that for unsprayed trees.

Probably the best time to spray as a preventive measure is soon after the first rains in the fall, provided the fumigation for scale insects has already been done. Bordeaux spraying should follow by at least a week and should not precede fumigation.

Losses in Packing House

When fruits are picked during the season for brown rot and are put through the washing machine preparatory to curing, there are usually a number of fruits so slightly affected as to escape notice. These are capable of contaminating the wash water so that a large number of healthy fruits are infected and later contract brown rot. These by contact in the boxes often cause large losses. If the brown rot has been prevented in the orchard this trouble in the packing house is also avoided. Copper sulphate in the wash water will effectively prevent infection in washing. This will not, however, prevent brown rot from developing in fruit already infected before picking.

The loss from brown rot in the packing house, if not prevented in the orchard, is illustrated by a record in one house in the same section in which the records before given were taken. The fruit not yet apparently affected was picked from an unsprayed orchard and washed in bluestone water. After being stored at the packing house 50 to 70 brown rot fruits per box developed. Fruit picked at the same time from an orchard sprayed in December had practically no brown rot in the packing house.

Control Measures.

In the fall, before or soon after the first rain, and after fumigation if possible, the ground under the trees, the lowest branches, if they touch the ground, and the trunk may be sprayed with Bordeaux mixture to prevent infection from fungus. If the soil or vegetable mulch has piled up too high against the trunk this should be pulled away for a short distance so as to allow the spray to get down as far as the top of the first main roots and to allow the bark to dry out between rains. This will prevent most of the infections of gum disease which often occur during the winter and spring rains, and the results of which do not show above the soil until two to four months later. This applies especially to low budded lemon trees on heavy soils, but may also apply to orange trunks to some extent. Where the soil is particularly heavy and the trees are subject to brown rot gummosis, it is often advisable in addition to the above, to paint the trunks with the Bordeaux paste in the fall before the heavy rains come on to prevent this gum disease. If the soil is kept well pulled away from the trunks, and the trunks thoroughly drenched with the Bordeaux spray when spraying for brown rot, this will prevent brown rot gummosis on most soils.

TRACTOR SCHOOLS

Fourteen tractor extension schools similar to the gas tractor schools conducted during the past few years at the University of California farm at Davis, and at the citrus experiment station at Riverside, are to be organized and conducted in various parts of the state by a special staff of tractor experts from the University of California.

Three thousand dollars worth of tools, tractor parts, models, and other teaching equipment is available for the use of these schools. This equipment which will be carried from one location to another, will make it possible for students to do a large amount of actual repair work on tractors and engines secured from ranches in the vicinity of schools.

The first school is to be held at Modesto November 14 to 19. Similar courses will be given at Fresno, Tulare, at the university farm at Davis, and in ten other localities to be announced later. Further information concerning these tractor schools may be obtained from farm advisors' offices or from Agricultural Extension Division, University of California.

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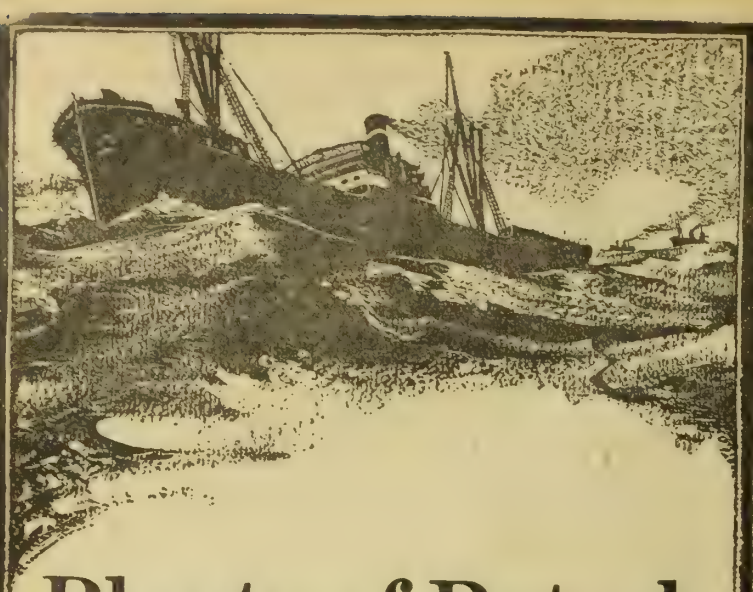

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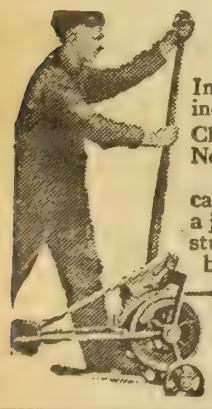

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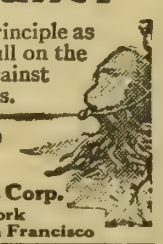

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FOREIGN CROP PROSPECTS, OCTOBER 31, 1921

PLOWING and preparation of the soil for winter seeding has made good progress throughout the northern hemisphere and is nearing completion in many countries, according to reports to the United States Department of Agriculture. Recent rains in Germany, Roumania, Hungary and central Europe in general have put the soil in excellent condition and will tend to increase this acreage. Recent rains have greatly facilitated fall seeding in Great Britain and the soil is generally in excellent tilth. The present outlook, however, indicates a probable reduction in acreage. The drouth is again becoming serious in France and fall seeding is being delayed.

Further good rains have generally benefited conditions in British India, and it is probable that a normal acreage will be sown to wheat. The prospects are not favorable for an increase in the wheat acreage in North Africa, as the growers are discouraged over present prices. Moisture conditions have been favorable in Canada and the seeding of winter wheat is nearly completed. Seeding is practically completed in the northern and central sections of the United States and some seeding is being done in the far western states, but rain is greatly needed in this section to facilitate seeding and germination.

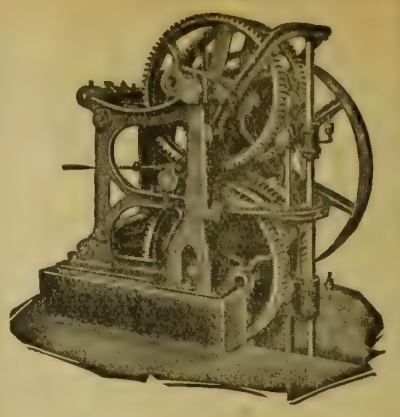
A recent communication from Argentina states that "on September 30 in the northern province of Buenos Aires and in the Pampa Central wheat is still being sown, which is nearly a month later than is usually done. This is due to the extremely cold and dry weather of July and August, so that seeding was impossible at the customary time." The wheat acreage for Argentina, as given by the Argentine government for the year 1921-1922, is 13,927,000 acres compared with 14,957,000 in 1920-1921. The director of agricultural statistics for Argentina also states "that in his long experience of 25 years he had never seen such adverse agricultural conditions as have prevailed during the usual period of spring plowing and planting. The spring rains began, however, on September 15 and have been general throughout the country, thus relieving what promised to be a most serious situation."

Good rains have benefited crops in Uruguay and a wheat crop of about one-third more than last year is now expected. Weather conditions continue favorable in Australia and considering the increase in acreage and the favorable growing conditions a large crop is expected. Good rains are also reported from South Africa over the bulk of the wheat growing area.

Thrashing of the grain crop for 1921 is now practically completed. Rain interfered somewhat with thrashing in some sections of Canada and a slight reduction both in quantity and quality of the wheat crop may result. Harvesting and thrashing were generally carried on under favorable conditions in the United States and also in eastern, southern and central Europe. According to estimates now available the total wheat production of the 29 leading wheat producing countries of the world (excluding Russia) was 2,852,825,000 bushels in 1921 compared with 2,661,959,000 bushels in 1920, an increase of 190,866,000 bushels.

The condition of crops in China is generally reported to be disappointing. Excessive rains in the early part of the growing season, succeeded by a long continued drouth, caused much damage. As no statistics are available it is impossible to state the amount of damage done, but the general belief is that crops are below average. The wheat crop in the Yangtze Valley has proved about 60 per cent of the normal and 20 per cent below that of 1920. In Shantung and Chihli the crop is again very poor and almost as bad as last year's production, when the great famine occurred. The crops in southern Manchuria are reported to be abundant excepting part of the Liao Valley. In general crops are expected to yield about 20 per cent above average. The condition is not so favorable in northern Manchuria and the continued drouth in the Hunchun district has nearly killed the bean and Italian millet crops. The wheat crop for northern Manchuria is expected to be about 20 per cent below average.

The prospects for the rice crop in



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British India continue to show improvement. The condition is good to excellent in the central provinces. Winter paddy is normal in Bengal but poor in Assam, while transplanted rice in Assam is reported to be good. Owing to the improved prospects for India in general the price of rice has fallen appreciably in most provinces. The first official estimate of the yield of rice in Japan is given as 18,241,439,000 pounds (hulled) as compared with 19,849,197,000 pounds in 1920. Recent figures available for Spain give the production as 402,877,000 pounds (hulled) compared with 393,759,000 pounds in 1920.

DECIDUOUS PRUNING DEMONSTRATIONS

By Ernest Braunton

THE farm adviser of Los Angeles County is conduoting a series of 16 pruning demonstrations in deciduous orchards. The first was held in the ten acre orchard of F. L. Williamson at Lankershim, November 9. The planting consists of eight acres of peaches and one and a half of apricots, the remaining half acre being used for house, outbuildings, etc.

Last year, owing to adverse climatic conditions, this orchard bore but a one per cent crop while an adjoining orchard bore a 25 per cent crop. Last autumn in order to properly handle a melilotus cover crop Mr. Williamson gave a heavy irrigation in late September. He now thinks irrigation should not be given later than August and that the September irrigation produced a too early blossoming which late spring frosts severely injured, there being an almost total crop failure. The neighboring ten acres which bore a 25 per cent crop has never been irrigated and blossomed much later. He said: "This is my explanation of the difference; it is mere theory; perhaps I am wrong."

Assistant Farm Adviser Blanchard gave the talk and pruning demonstration. He said: "It has been abundantly proven that the long pruning system, so called for want of a more fitting name, improves production. These demonstrations have been staged continuously for four years in all sections to get the more conservative growers out of a rut and to overcome strong preconceived ideas of what constitutes proper or profitable pruning. So each year we prune two trees by our system and two adjoining trees by the old stubbing process. I shall after this talk do the long pruning on the tree I pruned last year, while Mr. Williamson will prune the next tree, as he did last year, by the old stubbing method. My tree will be pruned but little, just some thinning.

"This new pruning process came about after years of study and experiment because the old style was not always bringing good results and it was known something was fundamentally wrong or lacking. The stubbing process produces much long new growth requiring a long season to mature; the leaves are many, thin and papery and of light color. Such growth does not have sufficient time or energy to ripen and store food for next season's crop effort. Long pruning or thinning allows growth to function naturally and to the fullest, store food, etc. The leaves are thick and of a fine dark green color, the sap is rich, thick and sugary. Subsequent growth each year is vigorous and robust—the tree grows larger in all parts, diameter of trunk included. The crop is always heavier and better than that of trees treated by any other pruning process.

"In this section trees should be planted in January or by February 1, and whitewashed at once. This is far preferable to yucca or other protectors, for the latter will not allow side shoots to develop except above top of protector. We wish to get three limbs at intervals of eight inches well distributed around the young stem. These are allowed to grow out and all others have their terminals nipped or pinched off. These latter then make rosettes of leaves which protect the trunk and branches from sunburn and manufacture plant food. The second year these three leaders should be five feet long and on each of these two are left, making a total of six in all, and these are never headed back but grow out continuously as the foundation of the framework of the tree.

"After this we prune little except to thin, but every year we thin and encourage branches that hang 'down and out.' This thinning lets in sunlight through all parts of the tree so that fruit spurs are produced on lower parts where usually lack of light prevents their development. It takes about three years to get proper fruit spur development where change is made from stubbing to long or natural pruning. On account of richer sap stored in the naturally pruned tree—more sugar—it cannot suffer so much from frost as in the case of the weakly succulent growth following stubbing. In the latter the sap is too much diluted to resist cold. But pruning is not all of care or necessary provision. The last three or four years of insufficient rainfall have so dried out the subsoils that the tops have too much drawn upon the water supply needed by the roots and summer irrigation has been necessary to good crop production.

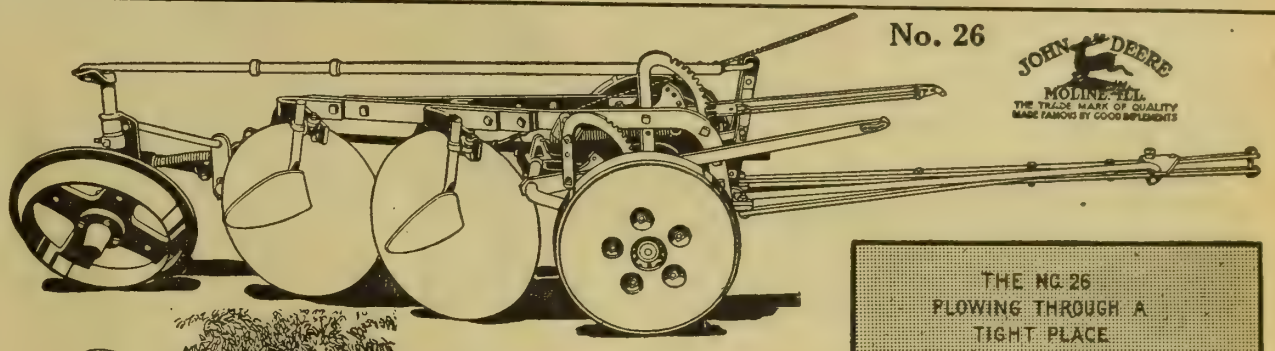
"As to results of change from the old method to the new, I know of one orchard that for years yielded four to five tons of fruit to the acre. After the first year of long pruning it yielded eight tons and the second year after nine tons. I know of a 60 acre orchard where the owner was doubtful of value of the new process, but he long pruned six rows across the entire 60 acres, gave six rows an intermediate pruning and stub pruned the remainer as usual. The latter continued to yield four to five tons as of old; the intermediate pruning gave over six tons, while the six rows long pruned yielded at the rate of ten tons to the acre. Last year one-half the orchard was long pruned and this year the entire 60 acres has been so treated. In the face of such marked examples at widely separated points, one coastal, the other interior, and scores of like examples at various points, the value of long or natural pruning has been clearly demonstrated."

DEVELOPMENT OF POTATOES

For three years Charles F. Clark, horticulturist, United States department of agruculture, has carried on experiments at the Colorado potato experiment station and for four years in Maine, for the purpose of determining the beginning of tuber formation and development in the potato.

The time of beginning tuber formation is approximately the end of the period of flower bud development, and the greater part of those which grew to exceed a half inch in diameter were formed at that time. The greatest rate of growth was about 80 days after planting (in Colorado). An increase in the weight of tubers took place after the vines had been killed by frosts. The number and the weight of tubers in a hill were found to be influenced by the size and kind of the seed piece planted, the larger pieces producing heaviest crops. Soils were important factors; the largest numbers and weights being produced on the lighter soils. Additional irrigations, until they became too frequent, while not increasing the number of tubers, did increase the weight per hill.

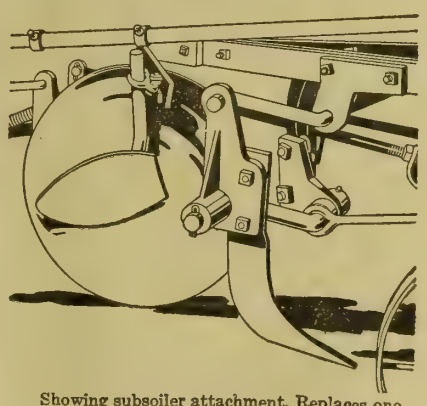
The apple packing schools held at Hood River, Oregon, were well attended.



No. 26

JOHN DEERE MOLINE, ILL. THE TRADE MARK OF QUALITY MADE FAMOUS BY GOOD IMPLEMENTS

Showing No. 26 with ridging attachment preparing soil for proper irrigation. Attachment costs very little and does away with necessity of buying extra implement for ridging.



Showing subsoiler attachment. Replaces one disc. Controlled by power lift. Permits plowing and subsoiling in one operation with small tractor.

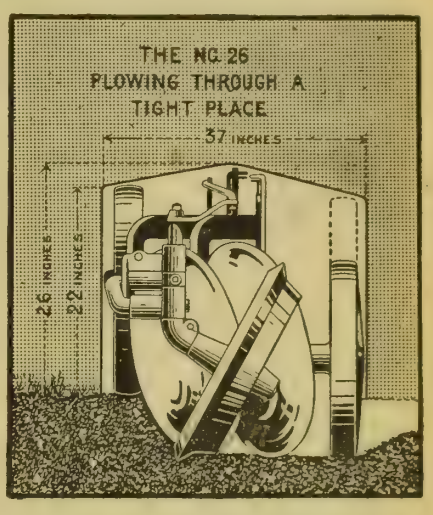
A 3-in-1 Plow

You can use the No. 26 Orchard Plow—

1. For thorough plowing without injuring the trees.

2. For ridging the soil to control irrigation water.

3. For subsoiling to break up plow pan, save much irrigation water and increase fruit yields.



JOHN DEERE ORCHARD PLOWS
FOR SMALL TRACTORS

They get under low limbs, up close to the row. Only 26 inches high when plowing six inches deep. Only 37 inches wide. No projections to interfere. Hitch permits wide offset of plows to right or left of tractor for work close to row.

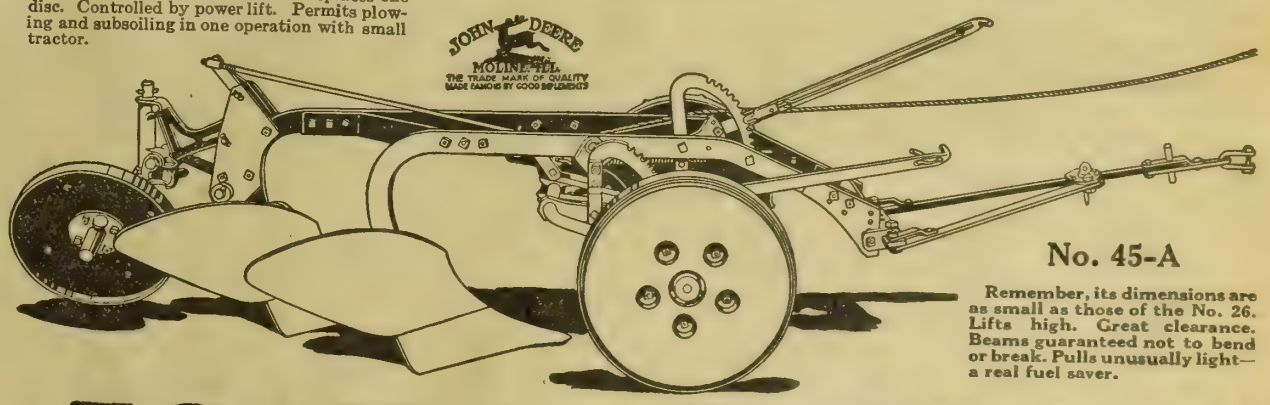
Stiff Hitch on No. 26 is a great disc plow improvement. Being stiff, it tends to hold the plow in the furrow when offset, and its control of the rear furrow wheel makes possible short turns and close work at ends of orchard.

Floating Rear End is another No. 26 feature that you will be sure to appreciate. The set-screw collar on the rear axle may be left loose to permit rear end of plow to rise over a root without carrying weight of rear wheel—a great aid in preventing damage to large roots.

Unusual clearance. Compound power lift raises plows unusually high. Simple construction, and every part strong and substantial. Just the right size for small tractors.

Write us today for folders describing John Deere Orchard Plows.

John Deere Plow Co.
San Francisco, Cal.



No. 45-A

Remember, its dimensions are as small as those of the No. 26. Lifts high. Great clearance. Beams guaranteed not to bend or break. Pulls unusually light—a real fuel saver.

JOHN DEERE

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We have a magnificent stock of properly grown, vigorous, well rooted Deciduous and Citrus Fruit Bearing Trees, Ornamentals, Vines and Roses.
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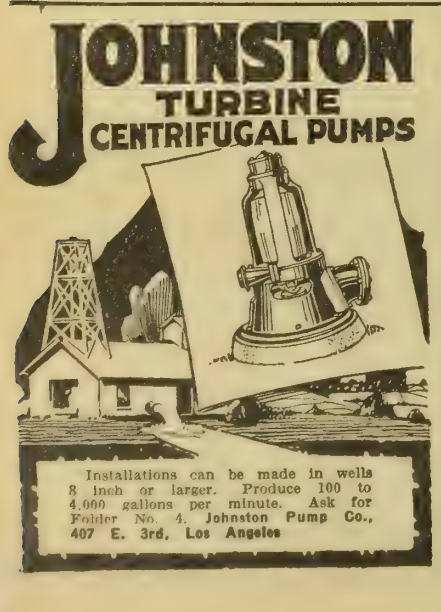
Fresno, Calif.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624 California St. San Francisco, Cal.

RHUBARB PAYS
Let Me Tell You Why and How
FRED W. KELSEY, President
California Rhubarb Growers Association
South Rosemead Ave., El Monte, Calif.

Queries

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Mottle Leaf or Chlorosis

Am asking information in regard to my orange trees, ten years old, grown in light soil and good bearers, foliage dark green, though I find many with mottled leaves of a lighter green, with some nearly white, or yellow spots mostly on the east side of the trees. What is the matter with them and what should I do?—Subscriber, Anaheim.

Mottle leaf, or chlorosis, or various similar manifestations of trouble cannot be answered definitely without personal inspection or having before one definite information as to methods of handling and present condition of soil. These various colored leaves are usually considered an indication of unfavorable soil condition or constitutional trouble. Build up the soil, and soil building is a slow process. Stable manure, green manure, commercial fertilizers, straw, alfalfa hay, and various other soil builders should be used. The coarser strawy manure should be put as deeply into the soil as possible. Some use ordinary mold board plow, throwing out two furrows. Others use shovel plow, but in any case put deeply in the ground, cover lightly and irrigate. This may be repeated across furrows, but the building up of an old orchard calls for much more extended discussion than is possible in this department.

Pimiento Goat Cheese

Query as to how to make pimiento cream cheese from goats' milk is answered by Mrs. Winthrop Howland of Rancho El Chivar, Redlands:

First make Neufchatel. Fresh clean new milk is used. (Can be pasteurized if any doubt as to thorough cleanliness is felt.) Temperature about 72 degrees Fahrenheit. To every 30 pounds of new milk one cubic centimeter of commercial starter is added and then ½ cubic centimeter of rennet extract is put in, and the whole thoroughly mixed and set aside to coagulate, which it should do in about 18 to 24 hours. As soon as the milk is firmly coagulated it is placed on a cotton covered strainer rack or in cotton bags to drain. I find a very fine cheesecloth is the best material to make the bags or strainers of; the coarser cheesecloth is apt to allow the loss of too much butter fat. The acidity of the exuding whey at this time should not be over .35 per cent or the flavor of the cheese will be too acid. The draining process requires several hours. As soon as the curd is dry salt is added to taste. Neufchatel cheese should have a sweet, clean, mild flavor; the texture should be fairly dry, yet smooth, and entirely free from lumps. There should be no leaking whey. If properly made Neufchatel will keep in good condition for two weeks if stored in a cool place.

To make pimiento cheese: To every 10 pounds of Neufchatel add ¼ to ½ pound of pimientos. Put through a meat mincing machine and grind to a pulp. The cheese and peppers are then mixed thoroughly and pressed into rectangular shapes weighing about ¼ pound, if desired. The usual way is to sell in bulk.

Gypsum

Is gypsum good for wheat, oats and barley?—Subscriber, Corning.

Yes, we think gypsum would be valuable on Corning soils. It has the faculty of lightening or making more friable the surface. If we recall rightly much of the soil about Corning is a reddish, rather heavy, especially rich soil. The mechanical effect of the gypsum should prove beneficial on that type of soil, provided it can be had at a reasonable price so that a fairly heavy application can be made. If it has not been tested and may be had at reasonable price, try it on different plots, say, one with 500 pounds per acre, another with 1,000 and another with 1,500 pounds per acre.

Almond Seedlings

Do almond seedlings have to be grafted or budded in order to produce a good crop of almonds? When is the proper time to have the budding done?—Subscriber, Lindsay.

If you wish to be sure of raising a desirable variety of almonds it is necessary to graft onto almond or, as usually preferred, peach seedling stock. To grow your tree from the seedling root would probably result in a very indifferent quality of nut or possibly a non-bearing tree. The proper time for grafting is in spring just before growth starts, or if budding is done it should be done just after sap has begun to flow.

Thin Shelled Nuts

By same mail we are sending you a sample of walnuts grown on healthy trees ten years old. These same trees bore a fine crop last year of large, healthy nuts, but this year the nuts are small and some have holes in the shell. Will you kindly give us your opinion regarding the possible cause of the poor crop?—Subscriber, Oceanside.

This insufficient shell is usually considered an indication of lack of moisture or lack of fertility in the soil or some other lack which prevents the tree properly functioning. Of course there are some trees which have the inherent fault of always giving a large percentage of nuts so that many are really defective. But apparently this tree is not in that class and we believe another year with sufficient moisture and fertility added to the soil will show perfect nuts.

Fertilizer in Furrow

Referring to furrow manure distribution in article by A. D. Shamel in Cultivator of September 17, how close can fertilizer furrow be to two year old pear trees without danger of burning? Fertilizer composed of about one part stable manure, two parts alfalfa, six parts bean straw.—Subscriber, Lancaster.

Mr. Shamel answers: "I believe the furrows for distribution of fertilizer of stable manure, alfalfa and bean straw can be located safely within five or six feet of the trees. I do not believe that there will be any danger of burning trees with a fertilizer of this character even if applied in furrows closer to the trees. I have seen one or two instances where stable manure has been buried in furrows within three feet of apple and pear trees from two to four years of age, without any apparent damage and with very markedly beneficial results. There is very little heating, so far as I have ever observed, in the case of manures such as stable manure, bean straw or alfalfa, when buried in the manure furrows as described in a recent issue of the California Cultivator. The decomposition of these organic fertilizers goes on slowly and without any detrimental effects from overheating or burning, so far as I am aware. I have frequently observed in manure furrows in citrus orchards that the young and actively growing fibrous roots of the citrus trees developed in the decomposed manure on the outer edges before the bulk of the manure had become decomposed. This would indicate that the conditions during decomposition of the manures in the furrows are satisfactory and favorable to the fibrous root development of the citrus trees, and so far as I am aware are equally favorable to the development of the feeding roots of other fruit trees as well. I have also had the opportunity of studying recently the behavior of grape roots in the buried manure in furrows. The behavior of the roots of the grape in this furrow manure area seems to be very similar to that of the citrus tree roots. With young trees I think that it would be desirable to plow furrows on all four sides of the trees if possible, fill them with manure and cover immediately with soil. If this plan is not practicable, furrows, on two sides of the trees in the direction of the irrigation flow will probably be satisfactory."

Leaves Dropping Prematurely

Am sending leaves from young apple trees, which are turning yellow and falling. There are only a few trees in the plot so affected, other apple and prune trees in same orchard still holding leaves. Trees are in Alameda County. Am anxious to know the cause of the trouble and how to

(Continued on Page 543)

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Household Department

FRAGRANCE OF THE DAY

From every open kitchen door
A whiff of fragrance flies,
The aroma appetizing
Of tarts and pumpkin pies.
Above the homestead's shingle roof
The sunset fades away,
And fair and frosty falls the eve
Before Thanksgiving day.

The children and their children, too,
By auto, car and train,
A happy, laughing, loving crowd,
Come trooping home again
To wander in the woods and fields
Where once they used to stray,
And with the old folks on the farm
To keep Thanksgiving day.

Within the shadow of the barn
The fattest of the flock
By lantern light is made to do
Obeisance to the block;
And baby fingers, pink and small,
Will with his drumsticks play
A merry measure at the feast
Upon Thanksgiving day.

In honor of the noble bird
That shares the eagle's fame,
Bring out the finest tablecloths
The linen chest can claim;
The best of silver and of glass
In glittering array,
And grandma's rosebud china, too,
Upon Thanksgiving day.

Lo! from the Pilgrim's barren rock,
Surrounded with the snow,
The swiftly passing years have seen
A land of plenty grow;
'Tis founded on the loyal love
That brings from far away
The nation's sons and daughters home
To keep Thanksgiving day.
—Minna Irving in Leslie's.

THE LOST THANKSGIVING PUDDING

By Annette Squire

IT was on Thanksgiving day, not an hour before dinner, that Peggy Weggy and Jerry Dumpling found Needle Naddle, Mother Goose's Robin Redbreast, scratching furiously and excitedly in the grass by the garden path.

"What in the world is the matter?" cried Jerry Dumpling.

"I'm hunting for the lost bag pudding," chirped the birdie, "and where can it be? Where can it be? The little King of Hearts made it for his mother's Thanksgiving dinner! He filled it full of plums and in it put two lumps of fat as big as your two thumbs! And he lost it! Where is it, where is it? At first he cried. But now he has stopped. And because he is so brave and has stopped crying, Mother Goose says that his pudding must be found! And to whomever finds it Mother Goose will give—but that's a secret!"

"Oh, let us hunt for it," cried Jerry Dumpling.

The robin looked pleased at that. He stood on one foot a moment, then away the robin ran.

"He's going otward Primrose Hill," said Jerry Dumpling, "let us go there!"

They thought that the house of the little King of Hearts was beyond the hill. So surely the lost pudding must be somewhere near there. But when they came to the hill they saw a funny, thin-legged, peaked-capped little fellow running about among the rocks and stones, turning them over to look under them, and crying as if a trouble had come upon him. So they stopped; and Peggy Weggy said, "We must go to help that little man. The little king has many helpers. This poor little man has none."

"Who are you?" Jerry Dumpling asked. "And are you looking for the little king's bag pudding?"

"No, no," groaned the queer little fellow. "I'm Peter Piper, who picked a peck of pickled peppers. But if Peter Piper picked a peck of pickled peppers, where is the peck of pickled peppers Peter Piper picked?"

"I don't know," said Jerry Dumpling, "but why do you feel so very badly about losing the peppers?"

"Oh, oh! That's because I promised to bring them to the little King of Hearts for his Thanksgiving dinner! I went into his mother's pantry and got her peck basket to carry them in, and now I have lost basket and all!"

Just then Peggy Weggy saw what looked like a great basket turned upside down at the foot of the hill. She ran to it, righted it, and there inside it were the pickled peppers! And, oh joy! There was the bag pudding! And now she remembered that Peter Piper was always forgetful and careless.

"Jerry!" called Peggy Weggy, "the little king's pudding is here in his basket! Peter Piper carried it off because he didn't notice that it was in the basket! You funny, foolish, forgetful Peter Piper!"

And at that very happy moment Mother Goose and her gander came up the hill, followedby a great band of children—Bo-Peep, Boy Blue, Tommy Grace and all of them.

"Oh, children, look!" rejoiced Mother Goose, "Peggy Weggy and Jerry Dumpling have made two people happy! They have found Peter Piper's peppers! And they have found the lost pudding for the little King of Hearts. For a reward they shall be doubly full of happiness and thanksgiving all the day long! And besides that, for their dinner they shall have the top slice off the little king's bag pudding!"

We are thankful because we have found out that "laughter is as divine as tears."

LET US GIVE THANKS

Oh, blest Thanksgiving day! Nor yet
Can feast of bread and meat and wine
Alone, within the breast beget
The peace of gratitude divine.

Nor for men's selves, nor for their own
Loved few, the thankful board is spread;
For him who wills to dine alone
The spirit of the day is dead.

The joy is his whose loaves or crust
Are shared with stranger folk or friend;
Who, in his larger loving trust,
Gives of whatever God may send.
—Nixon Waterman in Collier's.

Back home to spend Thanksgiving!
Each step upon the sod
My footsteps pressed in childhood
seems to draw me nearer God.
The rustle of the dead, brown leaves
seems like a murmuerd prayer,
And the spirit of Thanksgiving
broods softly everywhere.

A THANKSGIVING MENU

Grapefruit.

Radishes, salted nuts, olives.

Cream of oyster soup.

Roast turkey, cranberry sauce in molds; mashed sweet potatoes; cauliflower au gratin.

Celery Mayonnaise, with lettuce hearts.

Pumpkin ices.

Crackers and cheese. Coffee.

HOW TO CARVE

To carve with ease one of the first requisites is a good knife, well sharpened, before coming to the table. It is a most uncomfortable and disagreeable sound to hear the carver whetting the knife while the guests are waiting to be served.

The knife should be used for no other purpose than carving. It should never be found in the kitchen cutting vegetables, meat and breads, its sole office being to carve the meats brought to the table. Heat destroys its temper. A sharp, strong blade, a good handle and a keen edge are qualities belonging to a good carving knife. Another point to be observed in carving is to always cut at right angles with the fibers of the joint. When a joint is properly carved it is more agreeable to the eye, pleasanter to the taste and much more easily masticated.

New Lamp Burns 94% Air

Beats Electric or Gas

A new oil lamp that gives an amazingly brilliant, soft, white light, even better than gas or electricity, has been tested by the U. S. Government and 35 leading universities and found to be superior to 10 ordinary oil lamps. It burns without odor, smoke or noise—no pumping up, is simple, clean, safe. Burns 94% air and 6% common kerosene (coal-oil).

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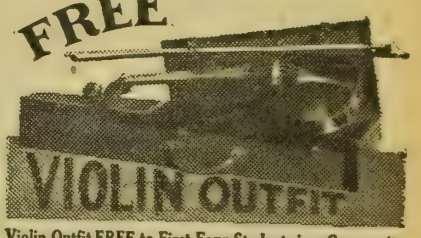

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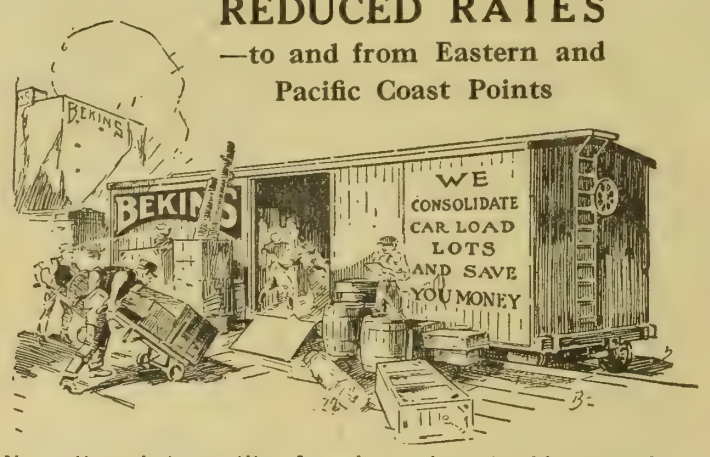

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FOR THE THANKSGIVING DINNER.

Some Old-Time Southern Recipes

By Annette Squire

Southern Roast Chicken

Cut two fryers in halves, put in roaster and pour boiling water on them and bake about half done. Turn, and pour these flavors over the chicken, thereafter basting till a golden brown: ¾ teaspoon salt, 2 good lumps butter, 3 tablespoons flour rubbed smooth with 1 tablespoon vinegar and 2 tablespoons vinegar from pickled peaches, with pepper to taste, and 1 teaspoon or more mustard mixed with flour.

Roast Chicken With Sweet Dressing

Rub salt on chicken and stuff with this dressing: ½ loaf stale bread made moist with milk, mixed with 2 tablespoons sugar, 2 tablespoons bacon drippings, 1 sliced apple, 1 cup raisins, and salt and pepper to taste, with lastly 4 dry crumbled crackers mixed in. Pour a little hot water around chicken, bake uncovered for 20 minutes in hot oven, then reduce heat; pour over chicken 2 quarts milk, cover and bake tender. Add hot water to gravy and thicken with flour.

Sour Cream Biscuits

My mother is one of those cooks who make delicious hot breads without measuring. As near as I can tell, this is what she "takes" and these biscuits are tender and flaky rather than feathery: 1 quart (4 cups) flour sifted with 1 teaspoon salt, 1 level teaspoon soda, ½ cup thick sour cream and 1½ cups sour milk or buttermilk; or use 2 cups buttermilk with 2 tablespoons cooking oil. Beat with spoon. Toss on board to take up a bit more flour, but do not knead. Brush with milk.

Feathery Biscuits

4 cups flour sifted with 1 level teaspoon salt and 3 heaping teaspoons baking powder. Stir up all at once with 2 cups sweet milk and 2 tablespoons melted butter or oil. Tip bowl and beat like cake. If too stiff to beat, add a little milk. Toss on board to take a bit more flour on outside, but do not turn this flour in. Do not knead, and roll very gently so as not to lose the puffiness that the beating puts in and which makes them come out feathery. Turn over in melted butter or oil that has been heating in the baking pan. As far as I know, this whipping of the biscuit dough is original with us. I have never seen it in any recipe. I never have made especially good biscuits in the ordinary way. These biscuits always bring me compliments. They should go into a hot oven as soon as cut.

Sour Cream Slaw

Shred white, tender cabbage and toss it in the bowl with a little vinegar. Let stand awhile, pour vinegar off, salt cabbage and toss it in heavy sour cream. Shake paprika or black pepper on top.

Apple Pie With Vinegar Sauce

Make ordinary apple pie, only have it sweeter than usual. Serve with this sauce: Shake together 1½ tablespoons cornstarch and 1 cup sugar. Moisten with 2 tablespoons vinegar and a little water; stir into 2 cups boiling water with 2 tablespoons butter in it. Stir and cook till thickened.

Cream Pumpkin Pie

Line 3 pie tins with pie crust and brush outer edges with cream. Take 1 can pumpkin (or 1½ pints baked pumpkin, baked till tender in shell, scraped and put through colander), and mix with 3 cups milk, ½ cup thick cream, 4 eggs beaten with ½ teaspoon salt, 1 teaspoon each ginger, allspice and cinnamon, ½ teaspoon each nutmeg and cloves, 2 tablespoons molasses, and enough sugar to make the custard taste decidedly sweet, probably 2 cups. Some pumpkins are sweeter than others. Some pies taste flat for lack of sweetening. Thin or stringy pumpkin will spoil the pie, and so will cooking it too fast or too long. To avoid soaked crust, do not pour the custard into the pie crust until you are ready to set it in the oven. Now watch carefully that the custard does not get hot enough to bubble, and remove from the oven the moment the custard is set, when the pie at the center ceases to be watery.

Fig Dainty

Line gem pans with flaky pastry. Rolling your pastry on quite a bit of flour, doubling over without working in the flour picked up, and then rolling out again helps the flakiness. Prick with a fork and bake. When cool and ready to serve fill the patties with peeled and sliced figs and heap with whipped cream, sweetened and flavored with lemon. On the top of each drop a bit of any red, tart jelly.

FOOD FOR THE CHILDREN

FARMERS of the United States have contributed thousands of bushels of grain for distribution to the starving peoples of the Near East. Collection of this food is in charge of the Near East Relief Grain Campaign, 700 Kansas Avenue, Topeka, Kansas. This story of a little Armenian child is given to the Cultivator by the association:

Didjirian Hieg crawled from the gutter and hid behind a pile of old boxes and barrels in a dark corner of the street. When he saw three Americans coming down the street he scurried away much like a rat from the grain bin when the door is opened.

Didjirian, in fact, resembled a rat in his actions and in his search for something to eat. He was a shriveled-up youngster, dirty beyond description, hollow-eyed and frightened.

Barely existing on the occasional scraps of food he found in the gutter and clothed in the rags he could pick up, this mite of humanity ran to his hiding place whenever he saw a man in the distance. Even starvation could not overcome his fear.

Didjirian was hunted from the hole in which he had sought to hide. So frightened was he that he could not talk, and his emaciated body trembled. He did not know that the men who found him were Near East Relief workers whose duty is to search out the orphans and destitute in Armenia, the Russian Caucasus and the Holy Lands. Helpless, he considered every one his enemy.

Knowing resistance was useless, this Armenian boy, victim of years of suffering and starvation, went along as he was bidden. He finally found himself in an orphanage, seated at a table on which there was bread and some other food. He ate ravenously when bidden.

A bath and decent clothes and Didjirian was transformed. Kindness and food had wrought a miracle. Fright merged into astonishment and peace. Then he began to talk.

His story was shocking in its misery. His father and mother had been murdered before his eyes, and his sister carried away into a horrible slavery. He had been left alone without food or friends. Didjirian had wandered in the country, getting a little food now and then. He had fallen in with a group of refugees and had come to the city. There the struggle was more intense. Most of the refugees had no food and none enough to share with him. He had taken to the gutter to find bread. Men had cursed and beaten him. He had been hauled home by a burly brute and made to work at tasks beyond his strength with only scraps of food to eat. Finally he had run away and gone back to the gutter, living as a rat lives on whatever he could find to eat.

There are thousands of other Didjirians. The Near East Relief, acting as the agent of the American farmers, is collecting 5,000,000 bushels of grain for the relief of these orphans and refugees during the coming winter. Every farmer is invited to aid.

A bushel of wheat will save a life. It will rescue an orphan from the misery and horror of a gutter existence.

And in the heart of every child succored in this time of extremity will be written indelibly the name of their benefactors and saviours, the farmers of America. These farm boys and girls of the Near East will never forget.

SOMEBODY SATISFIED

The vegetarian is on the job,
His features wreathed in optimistic leer.
The price of meat he scorns. Corn on the cob
He now consumes, and smiles from ear to ear.

—New York Sun.

HOUSEHOLD QUERIES

Mincemeat

Please print in household department a recipe for mincemeat.—R. F. M., San Gabriel.

Among all holiday sweets, mince pies take first place. The filling for these is put together in stone crocks and allowed to remain untouched at least two weeks. It gains an added flavor the longer it stands. Here are two capital recipes procured from old-fashioned cooks:

No. 1—5 pounds chopped beef, 2 pints chopped suet, 10 pints chopped sour apples, 2 pounds sugar, 1 quart molasses, 2 ounces cinnamon, 1 ounce cloves, 1 tablespoon salt, 1 teaspoon pepper, 6 pounds fruit. Thin with 3 pints cider. Mix all together and cook.

No. 2—Cook 2½ pounds beef (this should make 2 quarts when chopped), 4 quarts chopped apples, 1 pint currants which have been thoroughly cleansed, 1 quart raisins stoned just before using, 1 cup chopped citron, 4 cups brown sugar, 2 cups molasses, 1 cup chopped suet, 1 nutmeg, grated; 1 tablespoon salt, 2 tablespoons cinnamon, ¾ tablespoon cloves, 4 cups sweet cider or 3 cups cider that has been boiled down. Place in an earthen vessel and keep in a cool place. This quantity will make 12 pies.

HINTS FROM HOUSEKEEPERS

Fruit Cake

2 eggs, beaten separately; 2 cups fruit, currants and raisins; 1 cup citron or nuts, 1½ cups sugar, 1 cup molasses, 3½ cups flour, 1 teaspoon baking powder, ½ cup butter, 1 cup strong cold coffee, 1 teaspoon cinnamon and nutmeg, ½ teaspoon cloves, 1 level teaspoon soda wet in a little water.

Brown Betty, a Very Inexpensive Pudding

Butter toasted bread freely, cut into small dice and lay in bake pan or pudding dish. Wet each layer with water, then take fresh apples, peel, cut in small pieces and lay over toast. Sprinkle with nutmeg, cinnamon, sugar, then another layer each of toast and apples, till the pan is full, putting sugar, nutmeg and cinnamon on each layer. For sauce take 2 or 3 tablespoons flour, a little sugar, butter, nutmeg, cinnamon, and vinegar about 3 tablespoons; wet with cold water, then pour boiling water on and boil a few minutes. Serve warm.—Mrs. Leitch.

Sweet Pickles

I notice that a subscriber has requested a recipe for "sweet pickles like those you buy from the store." I wish to submit one that insures the finest sweet pickle:

Choose only small cucumbers. Lay 150 small cucumbers in cold water for 1 hour, remove and drain, then turn into a stone jar and pour over them cold brine (strong enough to float an egg on the surface). Let stand 3 days, then remove pickles, drain and dry on a clean cloth or towel. Wash jar and return cucumbers to it. Cover with pure water until next day. Have ready hot vinegar in which you have boiled 2 minced onions, 20 cloves, an ounce each of mustard and celery seed and a few blades of mace. Fill jar with this boiling mixture and add 5 cups sugar (brown is best) stirring the cucumbers up from the bottom. Cover tightly. Put over a clean heavy cloth, then two layers of cotton (sheet cotton); tie on well and place a board on top. In a week scald the vinegar again and return to the jar. Let pickles stand for 6 weeks before using; 6 months is even better. These are delicious.—Jeanette Steendahl, Los Altos.

Horehound and Honey Syrup

Now that the fall season is here and colds are easily taken, a little home remedy may be of help to some one. I have found it very beneficial myself, and it is very easily prepared. Take the leaves only of horehound, a small handful, boil in small quantity of water about ½ hour, then strain and boil down to a rich syrup, adding 3 tablespoons honey. If you haven't the honey, ¾ cup sugar will do, but the honey has healing qualities and should be used if possible. I always use the honey that has sugared.—Aida.

Green Tomato Mince Meat

8 quarts green tomatoes chopped fine; squeeze out juice and pour boiling water on them, drain through colander. Repeat this three times. Cook slowly 2 hours, add 6 pounds brown sugar, 2 pounds raisins, 2 pounds currants, 1 pint vinegar, 2 scant tablespoons cinnamon, cloves and salt. Add 2 oranges and 1 lemon chopped fine. Stew ½ hour and can boiling hot. Add water any time while cooking, if needed.—Mrs. H. W. Keith, Oroville.

Buttermilk Yeast

Scald 1 quart buttermilk, stir in corn meal to a stiff mush, let cool, then add 1 yeast cake that has been soaked in a little warm water, let rise and stir down 3 or 4 times, thicken with corn meal, roll out on board, cut in rounds with a tin baking powder can, dust a large pan with meal, lift cakes with a broad knife on the pan. Don't let them touch; dry in the shade on a porch for several days. Keep turning until thoroughly dry, then put away in a cardboard carton. One cake will make about 6 loaves of bread. The quality is excellent and it never fails. This is my favorite yeast recipe.—Aida.

French Omelet

Take from 6 to 12 young onions, according to size, clean carefully, cut, slicing white part thin and tops in short pieces. Heat 2 tablespoons fat in frying pan, add onions with 1 teaspoon salt; cook until well wilted and tender, stirring frequently. Do not allow to brown. Set aside to cool while preparing a batter as follows:

Sift together 1 cup flour, 2 level teaspoons soda and 1 teaspoon salt; add gradually 2 cups sour milk, preferably buttermilk, then onions, stir well. Lastly drop in 6 or 8 eggs, break yolks and stir very lightly. Cook on hot griddle like hot cakes and serve with butter.—Subscriber, King City.

THE CORN SONG

Heap high the farmer's wintry hoard!
Heap high the golden corn!
No richer gift has Autumn poured
From out her lavish horn!

Let other lands, exulting, glean
The apple from the pine,
The orange from its glossy green,
The cluster from the vine!

We better love the hardy gift
Our rugged vales bestow,
To cheer us when the storm shall drift
Our harvest fields with snow.

Through vales of grass and meads of flowers,
Our plows their furrows made,
While on the hills the sunny showers
Of changeful April played.

We dropped the seed o'er hill and plain,
Beneath the sun of May,
And frightened from our sprouting grain
The robber crows away.

All through the lone, bright days of June
Its leaves grew green and fair,
And waved in hot midsummer's noon
Its soft and yellow hair.

And now, with Autumn's moonlit eves,
Its harvest time has come.
We pluck away the frosted leaves,
And bear the treasure home.

There, richer than the fabled gift
Apollo showered of old,
Fair hands the broken grain shall sift,
And knead its meal of gold.

Let vapid idlers loll in silk
Around their costly board;
Give us the bowl of samp and milk,
By homespun beauty poured!

Where'er the wide old kitchen hearth
Sends up its smoky curls,
Who will not thank the kindly earth,
And bless our farmer girls!

Then shame on all the proud and vain,
Whose folly laughs to scorn
The blessings of our hardy grain,
Our wealth of golden corn!

But let the good old crop adorn
The hills our fathers trod;
Still let us, for his golden corn,
Send up our thanks to God!
—Whittier.

A can of Calumet Baking Powder will make more pies, cakes, biscuits, muffins, etc. than a can of most other brands.

It lasts longer—goes farther because it contains more than the ordinary leavening strength—therefore you use less.

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Livestock News Notes

J. D. Rowe & Sons, Davis, lessees of the Alexander and Kellogg herd of milking Shorthorns, have sold a promising young bull to George Need of Galt, and Snowball, white junior bull calf that stood third at Sacramento, to Henry Traynham of Davis. The same firm has sold Duroc boars to John Rodgers, Davis; Eggert Bros., Dixon, and H. McCollough, Dunnigan.

Among recently completed seven day official tests made at the Los Angeles County Farm are three three year old records all above 20.8 pounds butter and 460 pounds milk. A daughter of Beryl Luecke De Kol made the above figures, followed by 21.616 pounds butter from 487.8 pounds milk made by a daughter of Sir Veeman Korndyke Pontiac. Alice Cornucopia Segis Phoenix also made 21,289 pounds butter from 476.6 pounds milk as a junior three year old, she being by a son of Sir Gelsche Walker Segis, one of the very well bred sons of King Segis who has sired two 38 pound daughters. In the long time division a daughter of the senior herd sire, King Segis De Kol Mead, has just completed a junior four year old record of 824.35 pounds butter from 19,711 pounds milk in 12 months. The remarkable thing about this test is the persistency shown as this young cow only made 17.38 pounds butter in seven days. Her yearly record is more than 47 times her best seven days, showing extent to which this strain has been perfected for persistency and continued production. Another daughter of this bull is now on yearly test as a junior four year old and is making a very promising record. This is Whittier Pontiac Netherland 4th that made a seven day record of 28.70 pounds butter last winter. She has now made over 1,000 pounds butter and still has nearly two months of the year ahead of her. A son of this young cow is in service and is getting some of the nicest calves in the county farm herd.

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Sultan's Dale, the white senior yearlnig Shorthorn heifer owned by the Pacheco Cattle Company, Hollister, was junior and grand champion at the Pacific International last week.

Prilly Adirondac Dairy Maid, a junior yearling Holstein heifer bred by the Bridgford Holstein Company, Patterson, and sold in the Brentwood sale at Philadelphia last year, won her class at the recent New Jersey state fair.

The livestock judging team representing the University of California at the Portland show placed third. Oregon was first, Washington second, Utah fourth, University of British Columbia fifth and Idaho sixth. The boys composing the California team were A. H. Powers, C. A. Reeves, S. J. Bell, P. J. Webster and C. J. Burnham. The team was coached by Professors Hughes and Howell. It won first honors in cattle judging.

Romie C. Jacks of Monterey, the only California Hereford breeder to exhibit at the Portland show, had the honor of showing the grand champion Hereford female. Ruth Domino, the Jacks two year old, downed all competition including her stable mate, Bocaldo Beauty.

The three highest scoring samples of raw milk entered at the Portland show were exhibited by J. Henry and Burr Farms, Los Angeles, and the Model Creamery, Redlands. Burr Farm won the class for pasteurized milk and for guaranteed milk. Cold Spring Dairy, Pasadena, won the class for certified milk. Other California exhibitors at the same show were: Brant Rancho, Owensmouth; Adohr Stock Farm, Van Nuys; E. D. Simmons, Owensmouth, and the Associated Milk Producers' Association, Holt.

Fifty-two Shorthorn bulls and females made a general average of $255 at the Portland sale. The junior bull calf, Hercules Model, grand champion of the show, sold for $1,575.

Pacheco Lad 215th, the champion Shorthorn bull at the California state fair, owned by the Pacheco Cattle Company, Hollister, was first prize senior yearling at Portland.

Sixty-six registered Holsteins entered in the Portland sale sold for an average of $316. The top of the sale was the cow, Tyee Yucca Johanna, at $1,260.

The Hereford sale held in connection with the Portland show made an average of $267 on the 26 head offered.

J. E. Thorp, the veteran Jersey breeder of Lockeford, represented California in the Jersey classes at the Pacific International and succeeded in landing in the money in the face of hot competition. He won first with his senior yearling bull and senior heifer calf.

The Holstein-Friesian cow, Wisconsin Pride 2d, has broken the record for fat production in the senior three year class of the semi official yearly division, by producing in 365 consecutive days, 29,502.9 pounds milk containing 1,062.35 pounds fat. Her sire is Sir Pietertje Ormsby Mercedes 37th; her dam Wisconsin Pride. She was bred and is now owned by John Erickson. In the senior three year class of yearly division she displaces Lady Aaggie Echo Hengerveld 323463, whose record for 365 days is 28,008 pounds milk containing 960.56 pounds fat. Her 365 day fat production of 1,062.35 pounds fat, equivalent to 1,327.93 pounds butter on the 80 per cent basis, gives her twelfth place among cows producing above 1,000 pounds fat, she being the forty-second Holstein-Friesian cow to gain the high honor of producing more than 1,000 pounds fat in 365 days.

Following the dispersal of Toyon Farm Association herd at Los Altos, last April, Horace L. Hill, Jr., almost immediately began the foundation of another herd, owned by himself personally, but which will be handled under the old name, Toyon Farm Association. Most of the young females comprising the present herd are daughters of Sir Aaggie Mead, the great young sire for which W. J. Higdon, Tulare, and F. S. Borror & Son, Tipton, paid $9,250, and Sir Korndyke Ormsby Piebe, son of Sir Korndyke Hengerveld De Kol 36th and Queen Piebe Ormsby Mercedes, the famous 1136.01 pound four year old yearly record daughter of Sir Pietertje Orms-

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by Mercedes. It lately became necessary for Mr. Hill to secure a herd sire, and with a preference for one of Aaggie Acme breeding he finally secured a splendid young son of Sir Aaggie Mead out of Cascade Pauline Mercedes, a daughter of Sir Korndyke Ormsby Piebe that made 940.26 pounds butter from 21,789.70 pounds milk as a junior two year old. This youngster has an average of 1153.09 pounds butter and 24,347.5 pounds milk in one year for five of his seven nearest dams and presents a most promising combination of Aaggie Acme-Mead-Ormsby breeding.

Aaggie Artis Fobes 2nd, a senior four year old owned by G. S. Borror & Son, Tipton, recently made an official record of 26.11 pounds butter from 507.5 pounds milk in 7 days. She is a typey daughter of Sir Bessie Fobes Tritomia and out of a daughter of Mutual Fobes Longfield De Kol. She will be bred to Sir Aaggie Mead and continued on long time test. Baby of Bloom 2nd, also in the Borror herd, made 21.56 pounds butter in 7 days from 551.3 pounds milk, going on test four weeks after calving.

Gracia Pontiac Burke, owned by Burr Farm, Los Angeles, recently made 33.17 pounds butter in 7 days as a senior four year old. She is by King of the Pontiacs 14th and out of Gracia Colantha Burke, a 26 pound daughter of Dutchland Colantha Sir Ormsby and the good breeding cow Alamo, formerly in the Vina Ranch herd.

The great herd of registered Holsteins owned by Frank M. Helm, Fresno, and located on one of his farms near Corcoran, promises to be a prolific source of official test news during the months to come. Herdsman Harry Redd now has 36 head lined up in preparation for freshening, and two heifer records have just now been completed. Helm Lady De Kol Pontiac Burke as a two year old made 18.35 pounds butter from 379.8 pounds milk in 7 days. She is sired by Segis Mead De Kol Burke, a son of Segis Pontiac De Kol Burke and De Kol of Valley Mead 4th. Another heifer, Helm Lady Hiske Mead, made 19.23 pounds butter from 420.7 pounds milk in 7 days as a two year old. She is sired by King Hiske Mead, a son of King Mead of Riverside and Lady Hiske Walker, the 34 pound four year old daughter of Prince Gelsche Walker. Another heifer in the Helm herd, Natoma Hermosa Pontiac, a four year old daughter of King Pontiac Mayflower, lately completed a 305 day record with 702.43 pounds butter and 16,207.3 pounds milk.

Under the capable direction of R. A. Condee, registered Holsteins at California Junior Republic, Chino, awakened a splendid interest in good animals on the part of the boys composing the republic, and under their care the herd progressed until it was the sensation of this year's California state fair. Now the boys are beginning to demonstrate what their cows can do in the matter of production, and a number of very creditable records have recently been completed. Colina Snowflake Korndyke, a junior two year old and the first tested daughter of the grand champion bull, Dichter Spofford Korndyke Lad 5th, placed on test two months after calving made 16.84 pounds butter from 419.8 pounds milk in 7 days. Another junior two year old, Queen Canary Lyons Segis, made 597.21 pounds butter from 15,836.6 pounds milk in 305 days. Ida De Kol Pearl Lyons, their first prize three year old at the last state fair, made 28.16 pounds butter from 588.9 pounds milk and the boys expect to make a big 305 day record with her. Juliana Darington of Rock, one of the foundation cows in the Republic herd, and she is only five years old at that, made 24.60 pounds butter from 457.4 pounds milk in 7 days, and 647.31 pounds butter from 15,975.5 pounds milk in 305 days. She has three heifer calves in the herd and has paid 7 per cent interest on a valuation of $3000 every year she has been in the herd, but she cost less than one-tenth that sum.

A better job of sheep shearing can be done with a power clipper operated by a small engine. Less danger of cutting the animal and more even length of fleece.

HORSE COMFORT MEANS HORSE EFFICIENCY

According to United States Census Bureau figures for 1920 there are 465,419 head of work stock in California. These figures would indicate a vast amount of farm power being furnished by animals in this state. If this power is to be developed to its greatest efficiency and economy there are several important things to be considered.

The humanitarian side of the application of animal power is most to be considered. It is not reasonable to expect work horses to develop the maximum of power or to complete a high average task in a given time in an efficient and economical way unless their comfort is given careful consideration.

After giving horses the advantage of proper feed for development of strength, conservation of that strength should be guarded by careful attention to the weather conditions under which they are working.

These are simple facts which will be recognized as important, but perhaps one of the most vital features to successful work with horses is the harness.

Poorly fitted harness will cause sores and fretting, which reduce the efficiency of the team. Don't work your horses with a hardened or worn out collar or one with holes in it. The collar is the most important part of the harness, and a right fitting, easy working collar is due the horse and may save a sore shoulder or a sweeney.

If your dealer has your best interests at heart he will sell you only harness bought from a well known, dependable manufacturer who has a volume of business large enough to get the best the market affords at right prices. To insure long life to harness, curing of the leather is an important factor. Cheap split leather harness is generally unsafe and expensive in the end. Workmanship counts, of course, but machinery has become so human in its working that the machine made harness has advantages over the old time hand made harness both in quality and price.

It is important to give careful attention to keeping harness in repair. Your dealer can supply you with the necessary findings and with soap for its cleansing and softening.

MILK SHEEP WORTH EXPERIMENTING WITH

This is the first year I have taken the California Cultivator, but, believe me, as long as I am interested in agriculture I will not do without it. It is fine.

I wanted to ask you a question. I know America imported from the Old World nearly everything that was worth importing and improving. So it did with goats. Still there is in Holland a sheep they call the Frisian milk sheep that I think is worth trying over here. It gives much more milk than a goat, is much bigger than any other breed of sheep and will be healthy in low places where a goat gets sick. They feed it over there on weeds and grass on the roadside, some hay and linseed cakes. As far as I know they have only one vice, they are not very gentle or timid like their sisters, so little children should not come near them without the man that handles them.—M. Van Tonningran, Capitola.

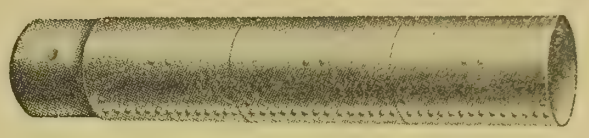
STOCKYARDS UNDER PACKER ACT

Fifty-four stockyards in almost as many cities throughout the country were posted November 1 as coming within the provisions of the packers and stockyards act. Under that act the secretary of agriculture will exercise supervision over transactions in these stockyards. In addition the department is preparing and will soon have ready for distribution tentative regulations governing the stockyards, commission men and other market agencies which operate at the stockyards. The packers and stockyards administration of the department invites criticism of these regulations and is arranging for a series of hearings. During the two weeks beginning November 7 hearings will be held at Fort Worth, Kansas City, Denver, Portland, Oregon, and Chicago.

Choose a little larger engine than you think may suffice to do your work. It means less wear and tear on your engine, longer life, and when you need extra power you have it.

"Drudgery" on the farm is lack of foresight and in not applying easily obtainable power to heavy work being done by hand.

The question of a regular water supply for stock is answered by the gas engine.



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Riveted Well Casing, Double Dipped and Galvanized Pipe (Lock Seam) Corrugated and Plain Tanks
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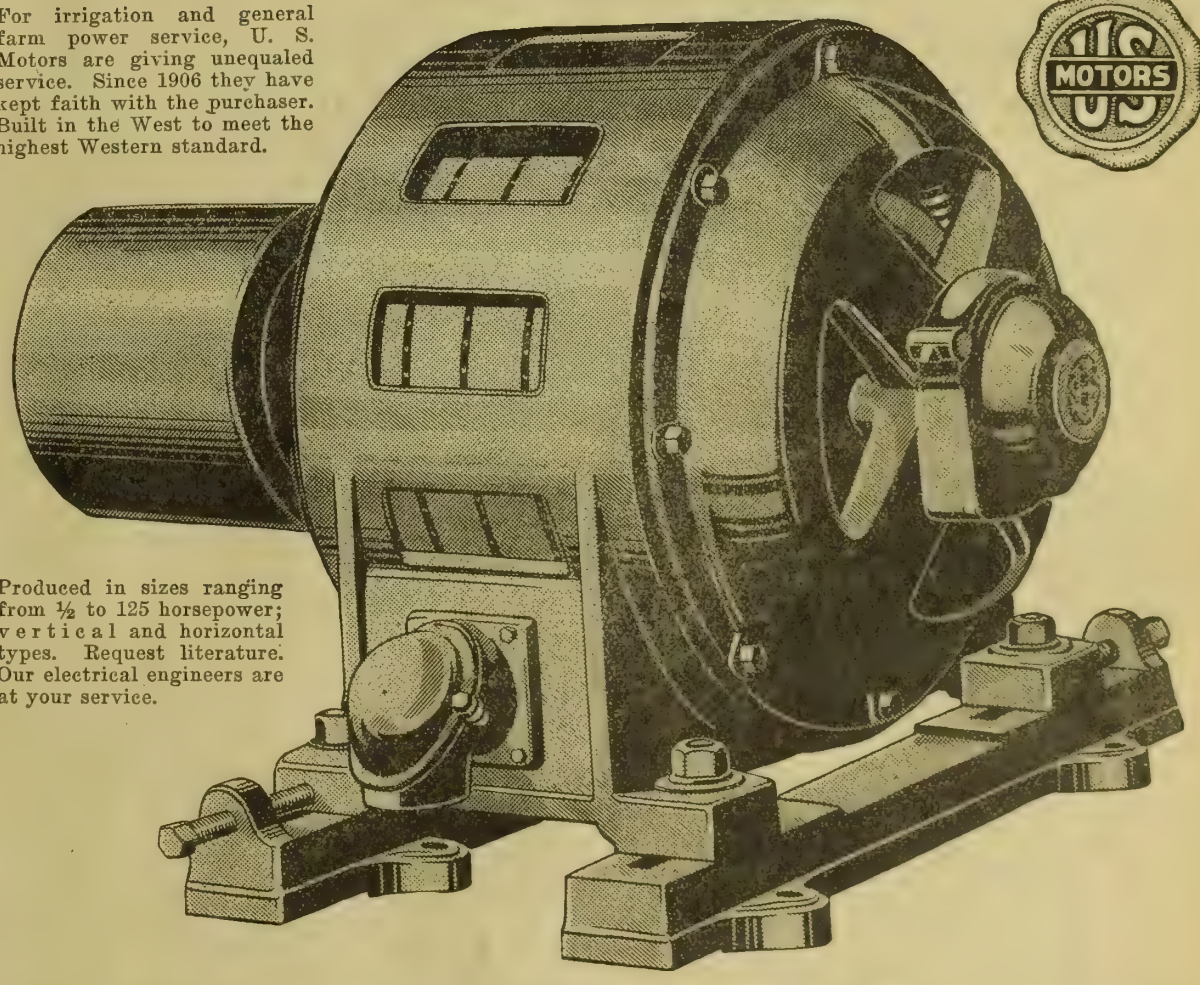
For irrigation and general farm power service, U. S. Motors are giving unequaled service. Since 1906 they have kept faith with the purchaser. Built in the West to meet the highest Western standard.



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Before buying your Alfalfa seed, ask any neighbors who have used

A & M Hairy Peruvian Alfalfa Seed

They'll tell you it's pure, satisfactory and gives maximum results.

A. & M. Hairy Peruvian Alfalfa seed, backed by our 28 years' experience in growing reliable seeds, is of bright color, better than 99½% pure, and of highest germination.

Get your Alfalfa seed from a reliable source.

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Santa Anita Rancho

Pure Bred Registered Percheron, Arabian and Thoroughbred Horses, Holstein-Friesian Cattle, Southdown Sheep, Big Type Poland China Swine, Mammoth Jacks and Jennets.

Young Breeding Stock of All Kinds

Every Animal Guaranteed

Santa Anita Rancho and Anoakia Breeding Farm

SANTA ANITA Anita M. Baldwin, Owner CALIFORNIA

HOLSTEIN Fred Hartsook RANCH CATTLE

We have assembled an excellent foundation herd of females and will be glad to have breeders call. Fred Hartsook, Lankershim, California.

Tosantos Walker Mead

Born December 9, 1919
Exceptional Yearly Record Backing

His five nearest dams average over 1,000 lbs. butter in a year. He is out of a wonderful daughter of Prince Gelsche Walker and Sir Aaggie Mead De Kol. He is a show bull and is priced for immediate sale.

E. D. BARRY, JR. Workman and Azusa Ave., Covina, Cal.

SANTA MONICA DAIRY COMPANY

HOME OF QUALITY HOLSTEINS

Sons of KING SEGIS PONTIAC JANNEK

From High Producing Dams

Write for Particulars to VENICE, CAL. Visitors Always Welcome

GLOBE "AI" FEEDS

-Judge them on Business Principles!

FEED FOR SWINE, STOCK AND POULTRY ASK YOUR DEALER

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A prescription for every animal ailment, whether it be cow, horse, pig, sheep or poultry. Send for FREE copy of "THE CATTLE SPECIALIST;" describes our medicines; tells all about ABORTION in cows; how to treat your own herd at small expense. Advice free.

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A veterinary doctor book which tells you just how to treat your own livestock—Retained Afterbirth, Calf Scours, Caked Udder, Loss of Appetite, Stoppage of the Bowels, Barrenness, and all other animal ailments. Half a million copies now in use. Ask how to get this book FREE. Write tonight. Consultation calls by appointment. DR. DAVID ROBERTS VETERINARY CO., Inc., 119 Grand Ave., WAUKESHA, WIS.

When Writing Advertisers Please Mention the Cultivator.

Cattle News to Date

By A. L. Spellmeyer

THE weekly market report for Southern California by the cattle association quotes sales of Arizona grass steers at $6.50, weighed Los Angeles, and of beet top cattle at $6.65, f. o. b. Los Angeles.

These prices are paid for lots to certain men and are not being paid for a few cars here and there. A car of steers sold at $5.50 near Calabasas, and various lots of cows run at bargain prices with no demand in early November, but the buyers of these cheap cattle admit prices must change by Christmas, and some figure eight cent January and February beef. The cattle association gives California shipments to Los Angeles as 516 for the last week in October, as compared to 6,976 head shipped in from other states. The total of 7,492 for that week as compared to 4,629 for preceding week shows packers stocked up when the strike threatened. That is also a probable reason for slow sale of good California fed cattle in early November.

Good steer carcass beef can be bought for 11 to 11½ and cremo cows for 10 cents. The packers' list has been merely something to cut from in carcass trade. The killers taking on the cheap lots of good feed 55 per cent dressing out steers at 5½ to 6 cents have on the 11 cent carcass beef price been clearing $12 up her head over slaughter expense, while the producers of those steers dropped about $40 for every head, and in some cases more.

A few weeks ago the plant of H. F. Lewis, Inc., burned down. This plant was killing for commission men and peddlers or anyone who went out and bought cattle or owned them. They charged so much per head for killing and a half cent per pound for selling the carcass meat. Anyone who had cattle could market them at this plant, and at one time I tried it, but the difficulty I found was that in order to sell the meat one had to cut regular existing carcass prices about 10 per cent. Mr. Lewis made every effort to interest cattlemen in his plant and at one time it was thought the cattlemen might purchase the plant for a marketing effort, but result did not materialize. Although the cattle association persistently advises against commission killing, Mr. Lewis stood very well in the opinion of many large cattle owners.

A few days ago the California Dressed Beef plant, owned by Bliss, burned down. This plant did what was probably the largest meat volume business in Los Angeles and it was, like the Lewis plant, independent. It bought cattle and the bulk of its trade was small lot distribution. Mr. Bliss is considered the best packing house man in California and only a few years ago started to compete for the big bulk meat trade of this city.

The destruction of these two meat plants, both independents, put the bulk meat supply again in the hands of line packers. These two plants were hard competition for the line packers, with their heavier overhead, and kept carcass prices down in this city. What may come in November and December we don't know, but it is certain that if four packers here wish to do so they can advance carcass beef price, and such an advance would make possible a better price to the cattle raiser and fattener. While there is today an apparent $12 per head in 11 cent steer carcass beef on a 5½ cent base, on a 7 cent base there was a loss. A higher carcass price for packers and killers is necessary under present conditions to a material cattle advance.

The best top cattle have had fine, clear weather for feeding, without rains or cold, which greatly helped them in gains. The Globe yards are full up.

These Globe cattle, 6,000 or more of them, are reported to be costing 35 cents per day, according to rumor. What I have seen fed before took 90 to 120 days, depending on condition on arrival. If I were figuring it I would assume 100 days on a steer weighing 800 pounds, feeding cost $35, and probably $4 freight, and final weight 1,050 pounds. I would assume at a cheap buying price six weeks ago a steer cost $45 plus $5 freight, interest, etc., and plus $35 or, when finished, about $85. Now killers are loaded up heavily and doing this feeding, and these steers will equal better than $7.50 in cost. However, they serve the purpose of an immediate supply that makes a packer immune from price advance and give a kill supply that permits cheap prices for cattle that have to sell, and this home supply acts as a market maker. The inference exists, however, that prices will receive a boost by the time these cottonseed fed cattle are ready to go, carcass prices surely, or they would lose the killers money, and we never see that happen.

In the general cattle and livestock and farming industry three noteworthy things have happened in the last few weeks. One is the distribution of some $22,000,000 of war finance money, the second is the consideration of taking control of public range lands and lease thereof by the government, and the third is the packer entry into retailing of meat. Everybody is for the war finance help. As to the leasing and control of public range and domain it has already started a roar of those outfits who use vast acreage without any control or payment and who graze it to depletion.

La Rue, the government engineer, who made what I consider one of the closest surveys ever undertaken during the war of Arizona cattle supply and numbers, was one of those who inevitably arrived at the one conclusion that it takes many cattle to make a living for a family and several thousands of acres to supply those cattle and that the present 160 to 320 acre homesteads are in semi-arid range districts unprofitable unless several hundred cattle can be run under fence and unless several thousand acres are possible to lease and control at a minimum cost. This range leasing matter if handled right can make the livestock industry of this country, but it permits a danger also. Right or wrong it will be fought as the forest reserves were first fought, but the same men who fought forest reserves now fight for them.

The permission of the government to permit packer retailing is a logical completion of the step of packer operation at a time a cure is needed for retail greed. Most association opinion current among individuals rather favored the packer established retail markets. Opinion in most livestock circles, and that doesn't mean among cattlemen only or among part of the cattlemen represented in associations, seems to be that the time is ripe for the cattlemen and packers to work out a mutual plan of salvation and that we should work with present conditions, as the citrus men work, rather than change the economic structure in our resoluting.

ANNUAL MEETING OF THE HORSE ASSOCIATION OF AMERICA

From Maine to California, from Canada to the Gulf, members of the Horse Association of America will gather at the Hotel Morrison, Chicago, for their annual meeting on November 30. Stockmen whose cattle furnish hides that go into harness and saddles, packers, tanners, saddlery manufacturers, accessory manufacturers who make buckles, snaps, bits and other harness accessories by the billion, wagon and carriage builders, hay, grain and feed dealers, horseshoe manufacturers whose output runs into millions of kegs of horseshoes annually, farriers, veterinarians and breeders of every known breed of horses, jacks and mules, will meet to hear the reports of their officers and consider ways and means to extend the breeding, raising and use of horses and mules.

EFFICIENT TO THE END

"Yes," said the traveler, "my wife's mother was an admirable housekeeper. Poor soul, she was eaten by cannibals in Africa."

"You don't mean it?"

"Alas, it's true! Why, when the savages had thrust her into the cauldron and she was beginning to cook, she cried out faintly with her last breath: 'Don't forget the salt and pepper'!"—Houston Post.

Straloch Farm

Davis, Cal.
(2½ Miles West on Highway)

Shorthorns

Herd Sires:
California Model 635776
Imp. Braywood Collynie 951409

Three of the get of California Model were shown at the Show in San Francisco. These won two firsts and one second. The steer was Reserve Grand Champion and sold at public auction for forty-five cents a pound.

Poland China Swine

Big—Prolific—Easy Feeders—
The Farmers' Kind.
Prices Reasonable

Hampshire Sheep

Strong show at California National. Straloch Hamps took half of the firsts.

Visit the farm at any time.

J. I. Thompson Manager — **C. Harold Hopkins** Owner

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Blackhawk Ranch Shorthorn Cattle

One of the most select herds in America. Only Scotch females of the best families headed by

ROAN RADIUM
COLLYNIE PRINCE LAVENDER
Imported direct from the famous Duthie herd.

SHIRE HORSES

A great opportunity for interested parties to buy a stallion at the San Francisco show. For prices and particulars see **E. LOVELL, Mgr.**

Diablo, Contra Costa Co., California

Rosebud Shorthorns

A Choice Herd of Fifty Females Headed by Milmar Stamp a Cruickshank Secret

We can now offer a few extra good young bulls that we do not hesitate to recommend. They are well grown and correct in type and quality. We invite you to visit our herd or to write us your needs.

Edinger-Johnston Company
Hood, California
(Just south of Sacramento.)

IMPORTED

Corston Masher

Senior Champion at 1921 California State Fair heads our selected herd of

SHORTHORNS

and we can offer some rare bargains in Scotch and Scotch topped cows and heifers, some with calves at foot, and rebred to the above bull. Most of the heifers are by Double Callant, a grandson of Avondale. Write us for prices and particulars.

Warm Creek Land and Livestock Co
J. Selby Badt, Pres. & Mgr., Wells, Nevada

Prevent

Blackleg

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Blackleg Aggressin

(Germ-Free Vaccine)

Scientifically Prepared and Tested

Consult your veterinarian or druggist. Write for booklet on blackleg prevention.

Animal Industry Department of
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DETROIT, MICH.

ADAMS PIPE WORKS

New and second hand pipe and casings. Riveted steel pipe, valves and fittings. Mail orders given prompt attention. Write, phone or call.

2025 Bay St., Los Angeles, Cal.

CHESTER WHITES OR O. I. C.

FOR many years there has been more or less friction between breeders of Chester Whites and other breeders of Chester Whites who have bred and sold under the name of O. I. C. or Ohio Improved Chesters or Famous O. I. C., terms which have been coined by one concern in Ohio and used with promises of superiority for its particular strain, more recently with that particular "breed" which the concern desired to create. Other breeders of Chester Whites than those who were affiliated with the O. I. C. concern asked that the practice be discontinued, and ultimately the matter was carried up to the federal trade commission, before which it was shown that the L. B. Silver Company had sold O. I. C.'s as a separate breed though the O. I. C. was still exhibited at fairs in competition in the regular Chester White classes. Further, the claims had been made "not liable to cholera" and "resistant to tuberculosis and other diseases." These latter claims have been shown to be entirely not founded on fact. In the endeavor to establish this claim it had been asserted that there has been "no cholera, foot and mouth or other contagious disease in our locality for over 50 years," to which the commission's finding of fact replies, "This statement is not true."

The Commission Finds

"The federal trade commission having issued and served its complaint herein wherein it allowed that it had reason to believe that the respondent, The L. B. Silver Company, had been, and was at the time of the issuance of the said complaint, using unfair methods of competition in interstate commerce in violation of the provisions of section 5 of an act of congress, approved September 26, 1914, entitled, 'An act to create a federal trade commission, to define its powers and duties and for other purposes,' and that a proceeding by it in respect thereof would be to the interest of the public, and fully stating its charges in this respect, and the respondent having entered its appearance by White, Johnson, Cannon and Speith, its attorneys, and having filed its answer to said complaint, and the issues so raised having, pursuant to due notice given respondent, come on for hearing before a duly authorized examiner of the commission, and testimony having been introduced in support of the charges alleged in the complaint, and the respondent having appeared in person and by attorney and introduced its evidence in denial thereof, and the attorney for the commission, and the attorneys for the respondent having submitted briefs and oral arguments herein, and the commission being duly advised in the premises, and upon its consideration thereof having made its report in writing wherein it stated its findings as to the facts and its conclusion that the respondent has violated the provisions of section 5 of the act of congress, approved September 26, 1914, entitled 'An act to create a federal trade commission, etc.,' which said report is hereby referred to and made a part thereof;

"Now, therefore, it is ordered that the respondent, the L. B. Silver Company, its officers, directors, agents and employes cease and desist from representing, in interstate commerce, to the public, by circulars, pamphlets, catalogs, trade journals, periodicals, newspapers or otherwise:

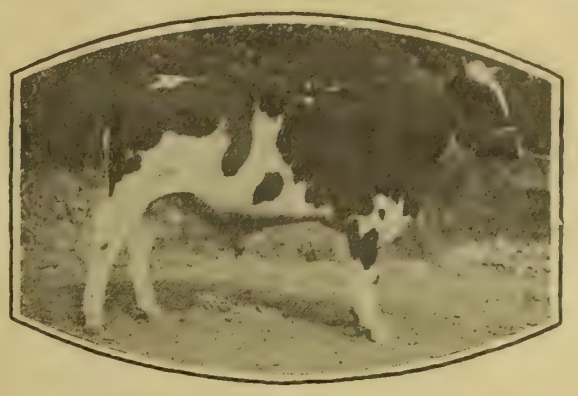
"1. That the so-called Ohio Improved Chesters, or O. I. C.'s, or Famous O. I. C.'s, are a breed of hogs separate and distinct from the Chester White breed of hogs;

"2. That it has Chester White pigs when it has none, and upon receiving orders for Chester White pigs refusing to fill these orders and instead urging the intending purchaser to accept in lieu thereof O. I. C. pigs;

"3. That the so-called O. I. C. pigs, as a breed, or otherwise, are not liable to cholera, foot and mouth disease, tuberculosis and other contagious diseases; that there has been no cholera, foot and mouth disease, tuberculosis or other contagious diseases in respondent's locality; that the O. I. C. pigs possess a power to resist disease in a degree unknown to other breeds; that in localities where contagious diseases have swept off the dark and black hogs the O. I. C.'s were unaffected; from in any way representing to the public that the O. I. C. pigs are

(Continued on Page 543)

Sir Prince Aaggie Mead



CONSIDER THE TREMENDOUS PRODUCTION AND DEMONSTRATED ABILITY TO TRANSMIT PRODUCTION ON BOTH SIDES OF HIS PEDIGREE.

His sire, King Aaggie Mead, is a son of the 1,000 lb. foundation cow Aaggie Acme of Riverside, who produced the 1,331 lb. world's strictly official record cow, Aaggie Acme of Riverside, who in turn produced California's only 1,000 lb. junior 2 year old, Miss Aaggie Acme Burke.

His dam, Miss Valley Mead De Kol Walker, with two records above 1,000 lbs. butter in one year, and now making a yearly record that promises to exceed her previous best record of 1,113 lbs., is a daughter of the 1,011 lb. 4 year old De Kol of Valley Mead 2d, who in turn is out of the foundation cow, De Kol of Valley Mead.

HE IS BEING GIVEN HEAVY SERVICE IN BOTH OUR HERDS. KEEP ONE OF HIS SONS IN MIND FOR YOUR HERD SIRE.

OWNED JOINTLY BY
Fred Hartsook, LANKERSHIM, CALIF. and A. W. Morris & Sons Corporation, WOODLAND, CALIF.

Herd Bulls

Harris Standard 2d

Beau Blanchard 76

Nevada Hereford Ranch

J. H. Cazier & Sons
Wells, Nevada

A government accredited herd. No reactor in 16 years. A herd whose record in the show and sale ring is only surpassed by the esteem accorded its productions by cattlemen. We can furnish bulls or females to fill any need—and at sound prices. Visit our herd or write for information.

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FULL INFORMATION AND LOAN PLAN SENT YOU (WITHOUT OBLIGATION) UPON REQUEST

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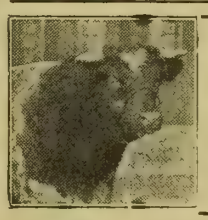

At the Minnesota Fair

There were 212 Shorthorns exhibited in the Beef, Milking and Polled classes at the Minnesota State Fair, and 68 Herefords, 51 Angus, and no Galloways. Shorthorns are growing in favor. It is the breed for the farm.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION
13 Dexter Park Ave. Chicago, Ill.

A R M M

Prevents Hog Cholera—Cresy-lol

A standardized Disinfectant. Dilute 1 part with 50 parts of water and use as spray or dip. Manufactured by

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NEW OFFICE and FACTORY
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WOLF AND OTHER FURS IN BIG DEMAND

SHIP TO FRIEND OF DENVER

SQUARE DEAL TO YOU.

FREE BAIT!

For a limited time only, we offer our friends the exceptional opportunity to secure a bottle of FRIEND'S FAMOUS ANIMAL DECOY, absolutely without cost. Act quick before supply is exhausted!

WRITE TODAY FOR DETAILS OF THIS OFFER. PRICE LIST AND FUR SHIPPING TAGS. **ALL FREE**

CHAS FRIEND & CO. INC. DEPT. A 917 Wazee St. Denver, Colo.

Classified Liners

The direct selling method from producer to consumer, and a clearing house for over 40,000 subscribers. Weekly Liner rates: Single insertion 4½ cents per word; 45c per issue minimum charge. Cash with Order.

Mail all classified copy to Los Angeles Office.

POULTRY

Continued requests are being received by the California Cultivator for varieties of poultry not advertised in our columns. If any of you, our readers and friends, have any you wish to dispose of, send a small advertisement to this office and you will be doing our readers a service as well as yourselves.

LEAD BY TEST

The Queen Incubators after a three years test in a Northern University were found to hatch 9% more chicks than any competing machine among all makes. This should guide you in buying. Write for full particulars and catalogue. Get your name in for our 1922 catalogue on general supplies for Poultryman and Dairyman. Order Baby Chix now. Demand heavy on our Tom Barron White Leghorn.

C. E. HILL COMPANY
418 11th Street Oakland, Calif.

Day Old Pullets—Here is your chance to get day old White Leghorn and Ancona chicks, guaranteed at least 90 per cent pullets. We are taking orders fast for October and November delivery. We also have R. I. Red and Barred Rock chicks but do not separate the sex. All chicks are from strictly thoroughbred laying stock and are hatched right and shipped by Special Delivery Parcel Post. Send for prices and get your orders in at once. Orange County Hatchery, Santa Ana, California.

We Are Now Booking Orders for S. C. White Leghorn Baby Chicks, from strong, healthy, vigorous stock. Bred especially for heavy egg production, from two hundred to two hundred and eighty egg strain. If you want strong, healthy baby chicks, place your orders with the Vineburg Hatchery. All baby chicks guaranteed safe delivery. Vineburg Hatchery, Vineburg, California.

White Leghorn Baby Chicks from heaviest laying stock for Spring, 1922, delivery. January prices $5.00 per 25, $9.50 per 50, $18.00 per 100. Special prices 500 and 1,000 lots. Safe delivery live vigorous chicks guaranteed. No money in advance, pay on delivery. Order early chicks now and realize big broiler profits. Established 1898. Must Hatch Incubator Co., 438 Seventh St., Petaluma, Cal.

Caldwell's Bred to Lay Exhibition Reds win in largest shows. Choice breeding stock from greatest producing females. Cockerels, $7.50, $10.00, $15.00. Pullets, ready to lay, $3.50, $5.00, $7.50. Pens and Trios properly mated for a foundation. Special price for November: four $5.00 pullets and $15.00 cockerel, $32.50. Satisfaction guaranteed. T. S. Caldwell, 335-B West Broadway, Glendale, Calif.

It's no wonder so many poultry raisers make a failure of the business. Without any knowledge of raising poultry people will branch out expecting to make a success. By putting in practice the valuable contents of POULTRY FOR PROFIT, $1.00 postpaid, success is assured in the poultry business. Cultivator Publishing Company, Los Angeles, California.

Penn's Quality Barred Ply. Rocks, and Ferris Heavy-egg type White Leghorns. If we knew of better fowls we would have them. Our Rocks led again at Fresno, 9 out of a possible 14 places. They lay. Stock for sale. Booking orders for chix and hatching eggs for 1922 delivery. Golden Rule Poultry Farm, Porterville, California.

Sly's Single Comb Rhode Island Reds again show their quality, winning at San Fernando and Ventura seven first prizes, two silver cups, many special honors and other ribbons. Am offering a limited number of line-bred cockerels at $7.50, $10.00 and $15.00; excellent breeders. Send for yours today. Albert Sly, 1642 Middleton Place, Los Angeles.

"It Pays to Buy the Best" Baby Chicks. Book your order with us now for early Spring Chix—from our own selected flock of 4000 birds. Order now and be sure of your chix. White Leghorns only—the Laying Strain. Steeles' Egg Ranch. Phone Gardena Exchange 692. Moneta, California.

Baby Chicks from my carefully selected flock of pure-bred S. C. White Leghorns. I am accepting orders now for spring delivery. Make your arrangements early and write for prices and particulars now. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

Baby Chicks from 227 egg strain of heavy winter laying S. C. White Leghorns. Book your order now for 1922 delivery of guaranteed chicks and hatching eggs. Pullets and breeding stock. Meyer Poultry Farm, Route A, Box 17-C, Modesto, California.

Baby Chicks—Booking now for 1922 delivery. Order early. White Leghorns, R. I. Reds. Brown Leghorns, Barred Rocks. Write for circular. Stubbe Poultry Ranch and Hatchery, P. O. Box 67-E, Palo Alto, California.

Hatching Eggs—We are now booking orders for Eggs from our well selected and mated heavy laying stock S. C. White Leghorns only. Pine Tree Poultry Farm, Los Gatos, California.

For Sale—Barred Plymouth Rocks; prize winners; some extra fine cockerels for sale now. Eggs for hatching in season; satisfaction guaranteed. Mrs. J. W. Snodgrass, Los Olivos, California.

Anconas, Our Sixth Year—Cockerels, single birds, $3.50 and $5.00. Satisfaction guaranteed. A. S. Wilkinson, Winton, California.

Watch Us Grow: Fall chicks, Rhode Island Reds, B. Rocks, White and Brown Leghorns and Anconas. E. W. Ohlen, Campbell, California.

POULTRY

Baby Chicks—Barred Rocks and Reds 25, $5; 50, $10; 100, $20. We have a hatch off every Sunday. We ship by Special Delivery Parcel Post, pay all charges, safe arrival guaranteed. Order your spring chicks now. Established 1915. Hargett & Son, Route 2, Box C, Compton, California.

White Leghorn Baby Chix from Petaluma's heaviest producing stock. We guarantee safe arrival. Literature on request. Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

Barred Plymouth Rocks — "Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Vodden, Los Gatos, California.

Hudson White Leghorns: Cockerels from 200 egg hens. Official records made in five egg-laying contests. Hudson Ranch, Escondido, California.

Success in business is attained by experience and knowledge. The poultry business can be made to pay by following the teachings and information contained in POULTRY FOR PROFIT, $1.00 postpaid. Cultivator Publishing Company, Los Angeles, California.

TREES

For Sale—Budded Walnut Trees, Placentia Perfection, Eureka, Chase on Northern California black roots. Scions selected from parent trees showing superior quality of nuts and above the average in productiveness. Grown under the supervision of expert walnut tree growers. Prices reasonable. **Royal Apricot Trees,** 4-6 and 3-4 ft. Also standard varieties of deciduous and citrus fruit trees. Los Nietos Valley Nursery, Downey, California. Phone 692.

FOR SALE — 100,000 SOUR ORANGE SEED BED STOCK; WASHINGTON NAVEL, VALENCIA LATE ORANGES AND EUREKA LEMON TREES; ALSO FUERTE, LYON, PUEBLA AND DICKEY "A" AVOCADO TREES. T. J. WALKER, 1142 PORTER AVE., SAN FERNANDO, CALIFORNIA.

For Sale—Walnut Trees — Erhardt and Placentia grafted on Northern Black Root—4 to 6 feet high, $1.00; 6 to 8, $1.25; 8 to 10, $1.50; Placentia, 12-14, $2.00; Erhardt, 8-10, $2.25; 10-12, $2.50. Borely and Wilkins, Puente, California. Phone 162.

Nursery Stock at bargain prices. Prune 10c each; grafted walnuts $1.00 each; pears 20c each; Black caps $20.00 per 1,000; other stocks at bargain prices. Submit your want list, and send for planters list. 31 years in business. Carlton Nursery Co., Carlton, Oregon.

For Sale—Placentia Perfection and Eureka grafted walnut trees. Prices 1-3 off from last season. Our stock is grafted from choice grafted orchards. See our stock before buying. The Walnut Nursery, Whittier, California. Phone 6294.

For Sale—Grafted walnut trees, also citrus and deciduous trees. Order now for 1922 delivery. Get my prices. Ketscher's Nursery, 1101 E. 4th Street, Santa Ana, California. Phone 572-W.

Reliable Trees and grapevines at a fair price. Write us for price list. We ship on approval. J. F. Miller & Sons, Healdsburg, Cal.

Trees—Tuscan Kling peaches, Sugar and French prunes, five to eight foot trees $35.00 per hundred. Johnson's Nurseries, Almaden Road, Los Gatos, California.

For Sale—Grafted Walnut Trees, Placentia Perfection and Eureka. These are well rooted and first class in every way. Rivera, California, C. E. Bullock.

For Sale — ATHEL OR EVERGREEN TAMARIX. Best tree for immediate windbreak and shade in hot dry localities. Leonhardt Swingle, Indio, Cal.

For Sale—Fruit Trees, grapevines, unrooted grape cuttings, etc. Write for price list. Burke's Nursery, Lodi, Cal.

For Sale—One and two year old Wonderful Pomegranate trees. fine stock. J. W. Irwin, Lindsay, California.

For Sale—California Black Walnut seedlings, 1-3 feet. Ripon Nursery Company, French Camp, California.

Citrus Nurseries, Murphy Oil Company, East Whittier California. Selected stock for sale; inspection invited.

MISCELLANEOUS

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

For Sale—Orchard Heaters—5,000 7-gallon "Citrus" Heaters, 500 "Hislop" Heaters. Practically as good as new, having been used but very little. Will sell at bargain prices. Call or write. Charles C. Chapman, Fullerton, California.

Avoid Law Suits by having your property lines properly surveyed and established by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

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WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

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Catalogues and Booklets, office forms and correspondence stationery for the nursery, seed and florist trade; half-tone cuts of many standard plants. Correspondence invited. The Kruckeberg Press, 236 Court St., Los Angeles.

FARM LAND FOR SALE

FOR SALE

20 acres Improved, 1½ miles from State Highway:
17 acres in 7 yr. old Almonds.
2 acres in 7 yr. old Apricots.
1 acre around buildings.
6-room house, garage, shop, barn, good well. Property fenced on three sides.

This place is a good buy at $10,000. Owner is forced, by poor health, to sacrifice.

Write us for the price. We are ashamed to publish it. Good terms. This is a dandy.

NELSON REALTY CO.
Arbuckle California

WE WANT "GO-GETTERS"

Sutter Basin is ready for "Go-Getters." It is a practical farming project in crops today. Deep, rich soil with irrigation and drainage system, river and rail transportation. In the heart of the Sacramento Valley. Very liberal terms to men who know how and will work. Write today. Sutter Basin Company, California Fruit Building, Sacramento.

Avocados—42 acres choice avocado land in frostless belt, with abundance of water, on reasonable terms. Other small tracts at very reasonable prices. This must be seen to be appreciated. C. M. Jay, 718 Washington Bldg., Los Angeles, Cal.

For Sale: 850 acres improved and equipped farm and pasture ranch. Seventy-five cows and modern dairy outfit. Unexcelled market, social and climatic conditions. A bargain. Address the Cultivator or Superintendent Indian Hot Springs, Eden, Arizona.

Paradise Your Future Home—The district with the greatest possibilities in the state for fruits, nuts, berries and poultry. Inquire C. H. Nielsen, Paradise, Butte County, California.

Mountain Land For Sale—Four hundred acres, good fruit land adapted to apples and pears, timber, water, good house and barn. E. S. Phillipps, Sultana, California.

For Sale — Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

TURKEYS

Turkeys—Mountain raised pure bred giant bronze breeding and exhibition stock for delivery after November 15th. Prices reasonable.

FLOCK No. 1—Cockerels and pullets sired by "GOLDBANK BOY," champion giant bronze first prize winning cockerel at Madison Square Garden Show, New York, January, 1921 (premier poultry show of America), himself a son of "GOLDBANK VIII," winning adult tom at same show. This champion cockerel weighed between 28½ and 30 lbs. at seven months and was last season mated to our choice 20-lb. hens.

FLOCK No. 2—Cockerels and pullets sired by "COPPER KING JR.," a 36-lb. yearling son of "COPPER KING V," the 38-lb. yearling that was grand champion at Madison Square Garden Show, January, 1919. "COPPER KING JR." also mated to choice 20-lb. hens.

Your inspection of our choice flocks invited.

Egg orders accepted for spring delivery. For further particulars address Bronze King Mountain Farm, Calistoga, California.

Thorough-bred White Holland Turkeys until Christmas. Some fancy young stock for sale. Orders booked for spring hatching. Geo. H. Parks, Riverside, R. No. 1, California.

"Goldbank" Strain—Giant Bronze turkeys. A few choice toms for sale. Write for prices. J. E. Mintun, Box 145, Livingston, California.

Bourbon Red Turkeys, Buff Orpingtons. The Ferris Ranch, Reservoir Street, Pomona, California

Turkeys—GIANT BRONZE grown on free range. M. Risk, Petaluma, Cal. R. D. 3, Box 13.

DUROC-JERSEYS

Weanling Boars and Gilts by Pathfinder Wonder (Great Wonder I Am ex an 800 lb. Pathfinder sow) for $10 each. Bred sows and gilts. Derryfield Farm, Capital National Bank Bldg., Sacramento, California

Greenwood Farm Durocs — Moderate prices on bred gilts and weanling boars. Select individuals. Most popular breeding. H. C. Witherow, Mgr., Live Oak, Sutter County, California.

Boyana Big Type Durocs — Breeding stock, priced right for sale. Inquiries invited. Satisfaction guaranteed. J. Boyd Harrold, Dixon, California.

Big Type Durocs—Better Durocs at right prices. Harvey M. Berglund, Dixon, California.

Winsor Ranch Durocs—The best of stock at reasonable prices. BONITA, CALIFORNIA.

BERKSHIRES

Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Calac Orchards, Martinez, California.

POLAND-CHINAS

Lendorris Ranch Polands — Big type Poland Chinas of all ages for sale. The kind that makes weight quickly. Weanling boars and gilts sired by Lendorris Liberator out of Lendorris Liberty Bond sows. Now ready for delivery. W. L. Haag & Son, Hanford, California.

Big Type Poland China open and bred gilts, young and service boars and young pigs. Your letter expressing your wants will bring a quick reply. California Swine Corporation, H. A. Patten, Manager, Route 2, Box 38, Escalon, California.

Big Boned Poland Chinas—Bred gilts and young boars priced to sell at once. Young stock, either sex, for sale at all times. Bassett Bros., Hanford, California.

CHESTER WHITES

Weanling Chester White Boar Pigs, $15 each, crated F. O. B. Dixon. Only a few and they are good ones. Howard Vaughn, Dixon, California.

SEEDS AND PLANTS

ROOTED VINES

For Sale — Alicante-Bouchet, Malaga, Thompson Seedless, Zinfandel and Emperor rooted vines. These vines are guaranteed A No. 1, true to name; certified and from clean producing vines. We are also booking orders for cuttings. CHAPMAN & SON, Modesto, Calif. P. O. Box 906; phone 663.

Sweet Clover Seed for Sale—Buy direct from the producer and save money. Fine clean seed 15c per lb., cheaper rates on 100 lb. lots. Order early for fall seeding. Write for samples. Address George Forest, Standish, California.

For Fall Planting Carolina strawberry plants, 150,000 strong, vigorous plants best and most productive, good shipper, good crop first year. Enquire or write for prices. Olive Ranch, Lakeside, San Diego County, California.

Strawberry Plants for Sale—Extra strong "Happy Valley" Marshall plants for fall planting vigorous plants that will insure best results. $1.00 per hundred, $8.00 per thousand. Address Jack McCrory, Olinda, Shasta County, California.

For Sale—Sturdy Plants of pansies, violets, stocks, snapdragos, sweet williams, cosmos, baby primroses, foxglove, canterbury bells, columbine, verbena. Postpaid, 50c per dozen. The Hopkins Nursery, 163 S. Hartwick Ave., Eagle Rock, Cal.

Strawberries Six Months in the year. Plant Everbearers, Superb, Progressive; $2.00 hundred. EVERBEARING RASPBERRIES six $1.00. Inspected. Fred Leissler, Route 6, Seattle, Washington.

For Sale—Brandywine Strawberry Plants, fifty cents per hundred; Banner, one dollar, here. E. A. King, West Fourth St., Riverside, Calif.

Cory Thornless Blackberry Extra Large Plants, ready; 12 $2.40; 24 $4.40 postpaid. Illustrated price list. Write Chas. E. Mortenson, Route 1, Lodi, California.

500,000 No. 1 Rootings, Thompson, Malaga, Emperor, Muscat, Sultana and Carnichon (Wine Grapes.) Get our prices before buying. Box 501, Fowler, California.

Alfalfa Seed — Certified Hairy Peruvian, Smooth Peruvian, Common. Write for samples and prices. Delta Seed & Feed Co., Yuma, Arizona.

CATTLE

Guernseys — Grape Wild Farms—Berkshires—Young bulls, from calf age up to 16 months old, of May Rose breeding and out of A. R. cows. Bred sows and gilts, service boars and pigs of both sexes for sale. Grape Wild Farms, Escalon, California. A. B. Humphrey, Proprietor.

Berrywood Stock Farm—Breeders of registered Holstein cattle and Duroc-Jersey swine. Every cow an A. R. O. and T. B. tested. Bulls and females for sale. J. W. Snodgrass, Hueneme, California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1,000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Polled Herefords and Durocs — Diablo Stock Farm, G. W. Emmons, Prop., Danville, California.

Some Choice registered Holstein heifers and bulls of serviceable age for sale. J. W Scudder, Escalon, California.

Winsor Ranch Jerseys—Bull calves with production behind them, at reasonable prices. BONITA, CALIFORNIA.

ROOFING MATERIAL

Save Your Roof for 15c a gallon with Asphaltoid. Direct from producer to consumer permits this low price of 15c a gallon. The finest roofing and preservative paint under sun. This is a natural product—why pay more for acid treated asphalt that eats your roof? Mail orders, barrel lots promptly shipped. Equally good for shingle, paper or metal roofs. Woolner Oil Co., 4th and Commonwealth, Los Angeles.

Roofing Paper—
Firsts complete with nails and cement.
1-Ply $1.25; 2-Ply $1.60; 3-Ply $2.20.
Lead & Oil Paint.....$2.20 a gal.
Roof Paint Special.....35c a gal.
Prompt Deliveries on Mail Orders.
ANGELUS ROOFING & PAPER CO.
764-766-768 So. San Pedro Street,
Phone Bdway 5401. Los Angeles, Calif.

WANTED

Wanted—Established California concern wants men, with rigs preferred, to represent it. Good pay. Can use local agents working during spare time also. Address J. H. Yetter, 317 Central Ave., Los Angeles.

Wanted—Walnuts Meats and cull walnuts. We solicit culls for cracking only, paying cash. Fred L. Mitchell & Son, 214 French St., Santa Ana, California. Phone 551-M.

Wanted—To put on shares Eight, Big Type Poland China, registered gilts. Sire Fashion Plate, one of largest Eastern boars. H. W. Haines, Box 126, Arcadia, California.

Wanted—Thompson Seedless and other varieties of rooted grape vines grown in Southern California. Mail list and prices. Los Nietos Valley Nursery, Downey, California.

Wanted to Buy—Any kind of dried fruit, honey or walnuts. Mail samples to W. A. Collins Co., Box 397, Santa Ana, California. Phone 71.

We Will Buy your Calla Lily roots. If you have 100 or more, write us. Sevin-Vincent Co., 512 Washington St., San Francisco, California.

Wanted—Half Dozen Dark Dorkings and rooster. E. S. Phillipps, Sultana, Calif.

Wanted—To hear from owner of land for sale. O. K. Hawley, Baldwin, Wisconsin.

MACHINERY

For Sale — Rebuilt windmills, tanks, pumps, cylinders. Why pay more. We make galvanized tanks, 400 gallons, $16.25; 600, $26.25; 1000, $36.25; 2000 capacity, $48.25. New irrigating pipe, all sizes for less. Why pay more? Demmitt Co., office 120 N. Main, L. A. Phone 15191.

For Sale at Bargain Prices—One 750 gal. heavy steel oil tank and wagon; one six foot land leveler; one International feed grinder; one four-gang Stockton plow. Drew Carriage Co., Ontario, Cal.

For Sale—One C. L. Best 12-25 Tractor, in fine shape. Might take as part pay span of good mules or horses. Terms to responsible party. Address Box 279, Sawtelle, California.

Heavy Yuba No. 99 Disc Plow, five 24 inch discs, $200.00. La Mesa Country Club, La Mesa, Calif.

RABBITS

New Zealand Reds — Splendid type, 3 months old, $5.00 pair, $6.50 trio. Armstrong's Rabbit Farm, Petaluma, Calif.

Pedigreed Flemish Giants — No fancy prices. Maud Beeching, 1578 W. 46th St., Los Angeles.

GOATS

For Service—Pure Swiss Toggenberg Buck—Sire California Chief — Heavy Milk Strain. Arcadia Goatery, 50 R 11, Arcadia, California.

For Sale—Highest class pure bred and grade Toggenbergs. Milk goats. La Corona Goatery, El Monte, California.

Prevent
Blackleg
by using
Blackleg Filtrate
(Germ-Free Vaccine)
Scientifically Prepared and Tested
Consult your veterinarian or druggist.
Write for free booklet on blackleg, No. 352.
Animal Industry Department of
Parke, Davis & Company
DETROIT, MICH.

CHESTER WHITES OR O. I. C.

(Continued from Page 541)

more resistant to disease than any other breeds of hogs;

"4. That in the shipment of livestock the respondent enjoys or has enjoyed, either or both, from express companies rates of transportation lower than the rates granted to other shippers of livestock by the said express companies.

"5. That two of its hogs weigh 2,806 pounds, that such hogs are in existence, that their progeny is for sale by the respondent."

QUESTIONS AND ANSWERS

(Continued from Page 534)

prevent it another year.—Subscriber, West Berkeley.

There were some yellowish spots on the leaves which were badly dried when they reached us. It is possible the cause of the dropping is the season of the year, which would naturally make them drop, or it might be due to a gravelly soil or other condition in that section of the orchard which has denied them the water needed even in the fall of the year. Again it may be natural for this variety to drop its leaves at this time. However, thinking there was a possibility of fungous trouble, the leaves were sent to Prof. H. S. Fawcett of the experiment station at Riverside, and he writes: "I have examined the fragments of apple leaves carefully but have been unable to find anything on them that would account for the condition spoken of. I am wondering whether at this time of year some of the older leaves are not falling off from natural conditions rather than the effect of any particular disease."

TEN MILES OUT

The Associated Grower is responsible for this:

The towns are swarmin' with folks these days. I got up before breakfast the other day and saw a fellow cutting across my vineyard.

"Are you a hunter?" I hailed him.

"Yes."

"Just going out, eh?"

"No. Coming in. And didn't get a thing."

"It's all hunkydory you didn't," I says. "Didn't you notice the sign, 'No shooting'?"

"Ha, ha!" he laughed dryly as he stepped over the fence. "I was out house hunting."

Legal Queries

Louis B. Stanton, attorney, 343 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 317 Central Ave., Los Angeles.

Right of Way

A road is desired to run along a section line. One of the property owners will not give the necessary 30 feet along his ranch. Is it necessary to buy his land or is he compelled to give the 30 feet?—Subscriber, Modesto.

Land may be given to the state for such purposes but no one can be required to do so. On the other hand, land may be condemned by the state in a suit brought in its name and upon payment of the value thereof, which the jury may award, the land becomes subject to road purposes.

Title to School Land

How does one proceed to obtain title to state school land?—Subscriber, Eureka.

It is necessary first to make affidavit that the applicant is a citizen of the United States or has filed his intention to become such, that he is a resident of this state, of lawful age, and that he desires to purchase the described lands, of which he has made personal examination; that there is no adverse occupation of the land; that he desires to purchase the same for his own use and benefit and has made no contract to sell the same. The affidavit must also state whether or not the land is suitable for cultivation and if it is, that the applicant is an actual settler; that he has not entered school land, which, together with the amount stated to be purchased, exceeds 320 acres, or if the land is not suitable for cultivation, then the affidavit must state that he has not entered in excess of 640 acres. This application is filed in the office of the surveyor general and retained 90 days. Within such 90 days the applicant must answer such interrogatories as may be placed by the surveyor general, and if it is found that the land is open for sale and the application made in good faith by a qualified entryman it shall be approved. On notice of the approval the purchaser must within 50 days from date of approval pay the county treasurer of the county wherein the property is located 20 per cent of the principal of the sale price of the land. Some of these lands are of a value of $1.25 an acre; other $2.50; and other timber lands of a higher value. The remainder of the purchase price is made payable subject to the subsequent act of the legislature. When full payment is made a patent signed by the governor is issued.

Public Utility Service

A dispute arose as to service of public utility corporation. The customer, pending settlement, did not pay his account for upwards of a year. Can the company require him to pay the whole amount at once or can he take the matter before the railroad commission?—Subscriber, Roseville.

Undoubtedly the company could bring action to collect the amount which it claims to be due. In such action the consumer could set forth his claims in respect to the delinquent service and have the matter determind by the court wherein the action is filed. If the consumer has cause for the belief that any appliance used in the measurement of his service is incorrect he may have the railroad commission test it. In case the appliance is defective the utility company must pay the costs. A shorter method of operation would be to set forth your claims before the court wherein the action by the utility company is taken than to involve the railroad commission.

Private School

Can a child under eight years of age be required to attend school? What steps shall be taken if I desire to place my child in a private school?—Subscriber, Roseville.

The compulsory education law requires the attendance at school of children between the ages of eight and 16 years. If it is desired to place the child in a private school it might be well to notify the superintendent of schools of the school in which you desire to place the child. That would end any possibility of having the child brought up by the truant officer.

Complaint of Assessment

How may I present a complaint concerning my taxes, to whom, and when does the tax equalization board meet?—Subscriber, Roseville.

The best method to avoid difficulties in respect to taxes is to submit to the assessor a statement of the property to be taxed and, in case of personal property, the estimated value thereof. The assessor values real estate and improvements. If you disagree with his valuation you may appear before the board of supervisors, sitting as county board of equalization, between the first Monday of July and the third Monday of July of each year and there file your complaint concerning the assessments which you consider unjust. This application need be in no particular form other than to clearly state the point at issue. On hearing of the application, the board may hear witnesses, take such evidence as it may deem proper, and either raise or lower the assessment.

Grocery Bill

A party owes a grocery bill which he has not paid for four years. Can it still be collected.—Subscriber, Palms.

The account is undoubtedly outlawed both as an open account wherein the statute runs for two years and as a book account. If the merchant has kept books, consisting of one or more entries, the statute in such case runs for four years.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Skin Trouble

I have a horse that has a rash on the head and body and also breaks out in large lumps or pimples the size of a bean when he is heated up, but these disappear when he cools off. He seems restless and bites and rubs his body and tail. Have used sheep dip several times but it seems to do no good. Would the zenoleum treatment do for him? He is the only one in the corral so affected. Will others catch it?—Subscriber, Santa Ana.

Zenoleum is only a sheep dip but we think it is a little better than the rest. If the others have failed it would probably fail also. When using any of the skin remedies one should clip the animal and brush the skin clean before using the remedy, so it can soak well into the skin. You had better try giving a small handful of Epsom salts in the feed once a day and also get a pint of Fowler's solution of arsenic and give a tablespoon of it in the feed once a day.

Worms

I have a seven year old horse that has been in poor condition for over a year. He had scours continually and was not able to work. Last April I had a good veterinarian examine him and he found the teeth sharp and fixed them and also gave him some medicine for the stomach, but he is very little better. I have had him on pasture. He eats well now and has no scours but is not doing well. He never had colic and his water is all right. What would you advise doing for him?—Subscriber, Encinitas.

He may have worms. Mix 10 pounds common salt with 1 pound fresh wood ashes and give a tablespoon of the mixture in the feed morning and evening. Also get these powders of your druggist: Gentian, ginger, nux vomica and bicarbonate of soda, of each 2 onces, and enough cornmeal to make 1 pound. Give a teaspoon of the mixture in the feed morning and evening after you have given all the salt and ashes.

Cow Ailing

Cow about seven years old is not doing well. When she comes to the water she hesitates and finally after tasting several times will dive in and drink a large amount. She eats sugar beets well but cares little for grass or other feed. She is falling off in flesh and in her milk. What remedy would you advise giving her?—Subscriber, Arroyo Grande.

She acts like a cow that had eaten some nails or other indigestible things and they are in the stomach and will not pass, or she may have an aching tooth. If there is someone near who understands animals have him examine the mouth. You might try giving her a mixture of 10 pounds of salt with 1 pound of fresh wood ashes. Give a tablespoon of the mixture in the feed morning and evening.

Losing Cud

We have a cow that is losing her cud. That is, we have to remove it every time we feed her. She has been that way for a week or longer. We had a veterinarian examine her and he said she had a sore tongue. He gave her some medicine but it has done her no good. Kindly tell us through the Cultivator what you think is wrong and what to do for her.—Subscriber, Newman.

The sore tongue may be caused by barley beards or sharp teeth. A veterinarian should be able to find the cause of her holding the cud in her mouth. Sometimes a loose or split tooth will turn out toward the cheek and a wad of feed will gather over it which will make it appear that the cow is holding the feed but she cannot get it out without help. The trouble is probably where you find the cud. Examine it again and let us know what you find.

Mange

Is there any known remedy that will cure mange?—Subscriber, San Jose.

Yes, mange can be cured. It is due to a very small mite that burrows in the skin, attacking a spot in colonies, spreading as the number increases. Ordinarily medicine applied to the surface does not reach them. They must have air to live, so if you can shut off their supply of air they must die. About the simplest and most effective way of combating them is to clip off hair and scrub parts with soap and

(Continued on Page 547.)

Headquarters for
FRUIT TREES
Our trees are grown under most favorable conditions in the choicest spots in California.
New Price List of Fruit Trees and Ornamentals ready for mailing.
Sent Free on Request
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Fresno, California

Longer Life For Tractors

Wagons, Silos and Farm Implements

PROPER paint protection will preserve your farm tractors, vehicles, silos and various agricultural implements and machinery. Such protection is vitally important to you because it is economical.

Constant exposure to all kinds of weather tends to materially deteriorate the usefulness of all farm implements and buildings. A protective coat of good paint will make them last longer, look better.

Buy Good Paint

Always buy the best paint—it is more economical—it costs less in the end.

Good paint is easier to spread and so goes farther. Besides it lasts five or more years longer than cheap paint, and always looks better.

So when you figure *labor, square yards covered, lasting qualities* and *appearance,* cheap paint is a great deal more expensive than good paint. It pays to invest in quality, when quality means *economy.*

Remember that Fuller makes a "special paint for every purpose." No matter what you have that needs painting there is a Fuller product made to cover it.

Here are but a few of the many Fuller paints that make for economy on the farm.

Pacific Wagon Paint: Adapted for repainting Agricultural Implements, Farm Wagons, Farm Machinery, Windmills. A glossy and durable finish offered in seven colors.

House Paint: Pure Prepared Paint, Phoenix Pure Paint for Painting Houses. . The purest, best protective and most durable paint made. Made in 32 colors.

Barn and Roof Paint: A protective coating for Barns, Roofs, Fences. Dries with a good gloss and wears. Economical in cost and dependable in quality. Six colors to select from.

Rubber Cement Floor Paint: A sanitary, waterproof and durable paint for floors and kitchens, closets. Attractive in color and gloss. Dries hard over night. Made in 12 colors.

Also makers of Decoret, Washable Wall Finish and Silkenwhite Enamel.

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For 72 years Fuller has been making "paints for every purpose."

This experience means a thorough knowledge of paint manufacture and has resulted in skill, second to none, in mixing the very best of materials to obtain only the best products.

Fuller's Pioneer White Lead base is finely ground pure white. It must pass through a silk screen with 40,000 meshes to the square inch. We use special machines for mixing the materials in scientifically exact proportions. Fuller products are famous for their covering capacity, ease of spread and great durability.

Try Fuller's—a western paint for western use—a paint *you know.*

Free Advice on Painting

If you cannot get a master painter, and wish to paint your home yourself, but do not know much about painting, ask Fuller's Specification Department for advice. How to treat the old paint. What color scheme to use. How many coats. The proper brushes. The best time to paint, etc.

Take advantage of Fuller *Service* as well as Fuller Paints.

Write us *now.* Take steps to *paint now.* Don't let weather depreciate your investment.

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We'll send also our booklet describing Fuller's Specification Farm Paints, Varnishes, etc. Send coupon now. Find out what good paint means to you.

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Please send me, without charge, a copy of "Save the Surface" and your booklet of farm paints and varnishes.

Name.....

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City.....State.....

AN ENGLISH EGG LAYING TEST

By Jean A. Koethen

IN ENGLAND, it seems, they call them tests instead of contests, and the test which is announced to begin on the 23rd of November, 1921, will run for two years instead of one, so it will be a real test of the hen's ability, not only to lay but to keep on laying.

The Daily Mail Two Years International Egg Laying Test will be the first international egg test ever held in England, the first two year test which has been undertaken on a large scale and the first test in which a prize of 500 pounds has been offered for the leading pen. The first prize of 500 pounds will be awarded to the pen which lays the largest number of first grade eggs during the first year of the test.

As the name indicates, the test is held under the auspices of a newspaper, the Daily Mail, but the announcement states that this test is "organized by the Daily Mail in cooperation with the Great Eastern Railway Company" and will be carried out at the Great Eastern Railway Farm at Bentley, Suffolk, under the supervision of J. N. Leigh, poultry adviser to the Daily Mail and the Great Eastern Railway and joint author of the Daily Mail Poultry Book.

Entries

Each entry shall consist of one pen of eight pure bred pullets of the same variety of one breed, hatched not earlier than the first of January, 1921. The entry fee is 5 pounds and the number of entries that will be received is limited to 200.

All birds must be in good health. If any are found not in good health the pen will be returned and half the entrance fee handed over to St. Dunstan's Blinded Soldiers' and Sailors' Funds.

The Daily Mail reserves the right to mate up in the second year of the test and breed from all or any of the pens and to hatch, sell or otherwise dispose of the eggs or chickens therefrom upon such terms as it may think proper, but subject to the distinct understanding that such eggs and chickens shall only be supplied to discharged or disabled soldiers and sailors or such persons as may prove to the satisfaction of the Daily Mail that they are not in a position to purchase from specialist breeders eggs or chickens from good laying strains; that the number of eggs or day old chicks disposed of to any one person shall be limited to one dozen and that ten per cent of the amount received from the sale of eggs and chicks shall be applied to and form a prize fund to be awarded to the 23 best pens in the second year of the test.

As American and Canadian entries can be received only up to November 1 no one who reads this notice for the first time will be able to compete, but the rules of the contest are of interest as showing the high standard set by our English cousins. Especially notable is the rule for grading eggs according to weight:

"First grade eggs during the first four weeks of the test shall be those weighing 1⅝ ounces or more; for the second period of four weeks, those weighing 1¾ ounces; for the third period of four weeks, those weighing 1 13/16 ounces or more; for the fourth period of four weeks, those weighing 1⅞ ounces or more; for the fifth period of four weeks, those weighing 1 15/16 ounces or more; and for the remainder of the test those weighing 2 ounces or more."

FOR THE IMPROVEMENT OF POULTRY STOCK

County Agent Russell T. Robinson of Alameda County writes:

"The progressive poultrymen of the Hayward district were ambitious to establish a reputation for the quality of the chicks produced from their locality. The poultry department of the Alameda County farm bureau formed a committee of breeders and hatcherymen to formulate a plan to accomplish this.

"The result has been that an agreement was drawn up by the breeders and hatcherymen whereby the breeders bind themselves to have their breeding flock inspected by an inspector employed by the poultry department and approved by the representative of the U. S. department of agriculture and the University of California. The birds must be without blemish and must conform with the standard for the breed. The flocks are to be inspected during the months of September, October and November and all hens not laying during at least one of these three months are rejected as breeding stock. It is required that there be no roosters with the hens that do not pass inspection, and any eggs produced by these hens until such time as they are eliminated from the flocks, are to be sold as market eggs only. Roosters before being placed with the inspected flocks are examined and passed on according to their capacity, vitality and conformation to type.

"The hatcherymen agree to take only eggs from inspected flocks and the chicks hatched from these eggs are sold with a certificate guaranteeing these chicks, so that the buyer will know he is getting chicks from approved stock.

"One advantage of this agreement is that it assures the poultrymen stronger and better chicks than before, since the eggs produced by inspected flocks are taken only from those hens laying during the months of September, October or November.

"The committee composed of A. M. Hinman, chairman, R. R. Graham, P. A. Day, Graham Barber, Harry Tolle and Geb. F. Campbell have worked unceasingly, and no effort has been spared to work out a plan which would bring positive results. To date about 20,000 hens and 500 roosters have been inspected.

"This plan of improving the poultry stock has aroused interest in every section where people have known of it and inquiries are coming in to the farm bureau office regarding this practice. It is a practical guarantee of the best quality of chicks procurable and people getting them will know they are produced by the best stock to be had."

GRADING EGGS FOR PROFIT

By Chas. E. House, Sales Manager Poultry Producers of Central California

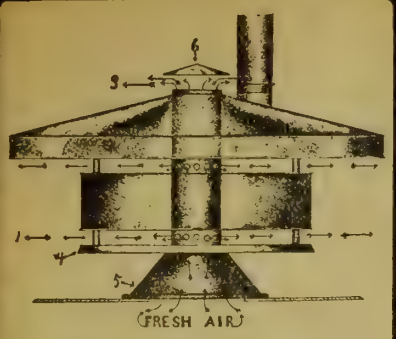
To Our Members: In the absence of a subject of greater importance to this association we again present the one that has perhaps been responsible for more trouble and dissatisfaction within our ranks than all other problems

The Foundation for Poultry Success
PCA Dry Mash
Los Angeles

Superior in Quality. Hundreds of Poultrymen have Adopted Its Use
ALL FEED—NO WASTE
Made by Poultrymen for Poultrymen
Poultrymen's Co-Operative Milling Ass'n
1516 Industrial Street
Los Angeles, Cal.
Main 2935 Home A2076

Orange Brand Egg Mash
With Buttermilk or Without
"For Hens that will pay by the Eggs they will lay"
Write Us for Booklets
NICHOLLS - LOOMIS CO.
2505 Santa Fe Ave., Los Angeles, Cal.

Plant Winter Rhubarb FOR PROFIT
Growers netted this year $1000 per acre. This is the best time to plant for full crop next winter and spring. We can supply plants—all sorts for large fields. Write for price list.
J. B. WAGNER
Rhubarb and Berry Specialist, Pasadena, California.



If You Are Going to Brood

anywhere from 200 to 1500 BABY CHICKS and would like to have a SYSTEM that will furnish all the WARM FRESH AIR required, no matter what the climatic conditions may be, write us for our

Literature on KRESKY STOVES

Ask for Literature No. 70, which describes all sizes.

Kresky Brooder Stove Co.
Petaluma, Cal.

Earl E. Sanders

BREEDER OF

Mammoth Bronze Turkeys

AND

S. C. White Minorcas

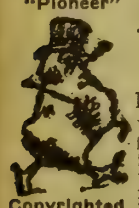
Place Your Order Now for
Eggs—Baby Turks—Breeding Stock
Route D, Box 1880, Modesto, Cal.

FOR $25.00

we will deliver to any express office in California a fine young pair of Mammoth Bronze Turkeys from last spring's hatch.

Sierra Vista Stock Ranch
PERRIS, CALIF.

"Pioneer"



Baby Chicks

All the Popular Breeds
Every Day
Baby Ducks, Baby Turkeys

We can supply Baby Chicks in any quantity. Best quality. Can ship to any point within seventy-two hours' ride from Los Angeles.

Copyrighted Hatching Eggs, Fireless Brooders, Poultry Supplies, Remedies, Feed, Seed, Feeders, Fountains for sale.

We are the SOLE AGENTS of this County for the Pioneer Incubators and Brooders. Send for Price List.

Visitors Welcome.

PIONEER HATCHERY
320 So. Spring St., Los Angeles, Calif.
"World's Largest Chick Dealers"

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

combined. This topic is a difficult one to handle and to those with sensitive minds it does not meet with favor.

Carelessness and individual opinion are the two principal offenders in egg grading or grading eggs for profit. In using the words of one of the leading minds upon the subject he relates: "There are differences of opinion among egg shippers as to the relative profitableness of shipping mixed qualities as received, making a casual assortment as to size and cleanness, or making a more rigid grading. Anyone who watches the wholesale marketing of eggs in a big city is able to appreciate the value of an established reputation for dependable high quality. This can, of course, be furnished only by careful grading, in which the highest grade must be closely guarded from the admission of any defective eggs as judged by critical trade in the market to which they are sent."

Our experience in the packing and grading of eggs is only a repetition of the experience of those engaged in other lines of business; that is, it pays to do anything a little better than the other fellow. Anyone can grade eggs carelessly or merely rehandle without grading, but it takes experienced help, constant application and honesty of purpose to pack a premium egg.

Experienced help is absolutely necessary to secure uniformity in grading.

Constant application of grading rules is also necessary to secure this same uniformity.

Honesty of purpose to avoid temptation to put too small an egg in once in a while, or a large slightly dirty one, and to secure the confidence of the receiver so that he will know when he sees a car of our mark that every case of eggs therein is a case of eggs all the way through.

Your management has worked very hard on the matter of grading in the face of much discouragement. Many members from time to time have seemed unable to grasp the true significance of strict grading and the value of establishing a permanent reputation for a standard product. One of the main objects of this association and every other farmers marketing organization is the standardization of the product. This means not only improved grading, but selling according to grade, so that the producers of high class eggs may get the real value of them instead of having to sell them at a price based on the market for inferior goods. A well graded product is actually worth more than a poorly graded one and people will pay more for it.

CALIFORNIA FARM BUREAU EGG LAYING CONTEST

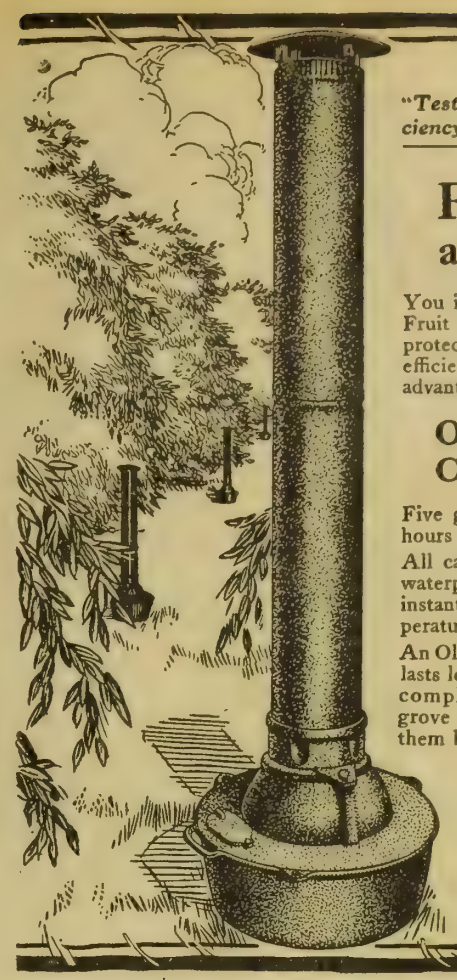
The pullets in the third annual California Farm Bureau Egg Laying Contest at Santa Cruz finished their first month with a production of 39.25 per cent or at the rate of 12.17 eggs per hen for the 62 entries of ten hens each finally qualifying for entry. Toward the end of the month a number of the birds developed a neck moult and production decreased somewhat.

Full report of last year's contest is not ready, but we announce that entry of Hanson Paultry Farm of Corvallis won with a grand total of 2,440 eggs, or an average of 244 eggs per hen. Hollywood won high individual hen with a record of 298 eggs.

Full report of last year's contest is always a difficult one for both fowls and management. The birds come into new and strange quarters, they come from many localities, and, in California especially, from rather a wide variety of climatic conditions. They must go through a period of readjustment and the effect upon some of the entering pullets may be such as to cause the management a great deal of worry and subject it to much unjustifiable criticism from owners of birds. To prevent outbreak of chickenpox 744 pullets were vaccinated. Epsom salts was administered in the drinking water October 23 and 25. The stock tonic recommended by the poultry division was also administered in the first 800 pounds of mash fed as an aid to birds during the initial readjustment period. During the latter part of the month the tobacco treatment for worms, as recommended by the poultry division, was given.

Electric lights are being turned on at 5 A. M. and the pullets find enough

(Continued on Page 547)



"Tests on Oldsmar Heater show 100% Efficiency."—Prof. Peeples of Armour Institute

Frost Insurance at Minimum Cost

You insure your house, why not your crop? Fruit growers everywhere can have assured crop protection through the use of this improved and efficient heater which has a number of notable advantages over any other kind.

Oldsmar Frost Protector Costs Less To Operate

Five gallons of distilate fuel oil burns 10 to 15 hours according to temperature desired.

All cast iron (stack excepted), the Oldsmar is waterproof and cannot get out of order. Lighted instantly, it requires little attention and temperature regulation is positive.

An Oldsmar costs less than other cast iron heaters, lasts longer, requires fewer to the acre; affords complete protection — California and Florida grove owners and truck farmers are ordering them by thousands.

Write today for literature and full information about how the Oldsmar can protect your crop

Oldsmar Tractor Company
Oldsmar, Florida
Kell-Oil Heater Company
Coldwater, Michigan

Correct lubrication for your tractor

A grade for each type of engine

STANDARD OIL COMPANY
(CALIFORNIA)

La Habra Heights

Higher and Adjoining East Whittier and La Habra Districts

3,600 acres pronounced by experts the ideal location for avocado and citrus planting. Protected from frost and wind in combination with good soil. Nearly $250,000 spent on irrigation plant, roads and other improvements. The Hacienda Country Club, with 151 acres of golf course and other recreations, is located in the center of this property.

Ideal conditions for avocado and citrus growing. Fine country club for recreation; beautiful homesites.

Any acreage desired. Low prices. Reasonable terms.

We also specialize in choice Southern California walnut, orange, and lemon groves. Suburban property.

EDWIN G. HART
Developer and Exclusive Agent for North Whittier Heights
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Dry Mash Feeder

Weather proof. Rat proof. Large capacity. Taper body prevents clogging. Height, 19 inches.

In three sizes:

No.		Each
35—Width	8½ in.	$1.65
36—Width	12 in.	2.20
37—Width	24 in.	3.10

Use Moe's Poultry Supplies

Practical fixtures, designed by specialists and made to last.

Ask your dealer, or get our New Catalogue.

HOEFT & COMPANY, INC.
220 No. Alameda St. Los Angeles, Cal.

Baby Chicks

POULTRY, DOGS,

Cats, Pigeons, Rabbits, Supplies of All Kinds — Everything for the Poultryman—Chicks hatching twice a week. Pullets of all kinds. Write for Price List.

Fancier's Exchange
640 So. Main St., Los Angeles, Cal.
Phone Bdwy. 2824

Los Angeles Markets

Los Angeles, November 16, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price 51 cents.

Nov.	9	10	11	12	14	15
'21	51	51	---	51	51	51

CHEESE

Brokers prices:
California flats, 28@30.

EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 62; case count, 57; pullets, 49; pewee pullets, 33.

Nov.	9	10	11	12	14	15
'21	60	60	---	60	60	62

POULTRY

Price to producers: Hens, 25; colored, 32; broilers, 40; roasters, 28; old roosters, 16; fryers, 30; ducks, old, 20; ducklings, Pekin, 3½ up, 28; others, 28; geese, 28; turkeys, live, young tom, 34; dr., 40; old, live, 29; dr., 35; hens, live, 34; dr., 40; squabs, 55@60.
Belgian hares, 12@17; old, 8.

LIVESTOCK

Los Angeles, Nov. 15.—Weighed and delivered off cars without food or water: Hogs (hard grain fed), 125 to 175 lbs., 8.00; 175 to 225 lbs., 8.50.
Cattle (on foot, gross weight): Steers, good, 6.50; medium, 6.00; cows, good, 5.00; medium, 4.50; bulls and stags, 3.00; calves, 125 to 150 lbs., 8.00; 175 to 225 lbs., 7.00.
Sheep: Ewes, 3.50@4.00; lambs, 7.00@7.50.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, November 15, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.
Potatoes: Market steady. Lugs mostly 1.00@1.25. Stocktons: Burbanks, per cwt., best, 2.75@2.85; poorer low as 2.00. Idahos: Russets, 2.30@2.50; Rurals, 2.20@2.30. Sweet Potatoes: Market weak. Locals: No. 1, mostly 75@90; No. 2, 50@60 lug.
Onions: Market weak. Stocktons: Per cwt. White Globes best, cold storage, mostly 5.25@5.50; other whites, 4.50@5.00; yellows, 4.00@4.50; browns, 4.50@4.75; per lug whites and browns best, 1.75; poorer, 1.35@1.50. Garlic, lb., 7@10.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock, November 15, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.
Beans: Supplies liberal, demand slow, market weak. Per lb., Kentucky Wonders, mostly 4; green pods, 2½@4; wax, 5@6; limas, 8@9.
Bunch vegetables: Per dozen bunches: Beets and carrots, 45; turnips, 35@40; radishes and parsley, 15; spinach, 25.
Cabbage: Per field crate, mostly 1.50@2.00.
Cauliflower: Market firm, 1.00@1.60, according to quality.
Celery: Market strong, per cr., 3.50@4.00; poorer, 3.00@3.25.
Cucumbers: Market steady. Locals: Lugs, 50@1.00.
Egg plant: Lb., 3@4.
Lettuce: Demand moderate, market steady. Mostly leafy stock. Locals: Field crates, best, 75@1.00; poorer, 50@60.
Okra: Lb., 10@12.
Parsnips: Lug, 70@75.
Peas: Market steady. Lb., fancy, 11@12; poorer, 7@8.
Peppers: Locals: Bells, green, per lug, 75@80; chilis, 40@45 per lug.
Rhubarb: Lug, 75@1.00.
Squash and Pumpkins: Market steady, movement good. Hubbard squash, 1¼@1½ lb.; Banana squash, 1¼@1½ lb.; pumpkins, 1@1½ lb.
Tomatoes: Market steady. Locals: No. 1, per lug; Pinks and Ripes, mostly 1.00@1.25; poorer, 60@75.

FRESH FRUITS

Apples: Demand and movement slow, market steady. Locals: Windfalls, 1¾@2; Romes and Winesaps, 4@4½ lb.; few best Delicious and Jonathans, Yucaipa section, 5@6 lb. Watsonville: Fancy 4 tier Bellefleurs, 1.50@1.60; poorer, 1.25@1.40; 4½ tier, 1.15@1.25; B grade, 4 tier, 1.25@1.35; C grade, 1.15@1.25. Washingtons: Jonathans, extra fancy, large, 3.00@3.25; medium, 2.75@3.00; fancy medium, 2.65@2.85; small, 2.50. Oregons: Spitzenburgs, extra fancy, medium size, 2.75@3.00; fancy, medium, 2.65@2.85.
Avocados: 3.00@6.00 doz.; lb., 25@40.
Cranberries: Market steady. Early Blacks, 18.50 bbl.; late Howes, 23.00@25.00.
Feijoa: Lb., 10.
Figs: Market firm. Local, 1.25@1.75; various varieties, 8@10 lb.
Grapes: Demand good, market steady. Per lb.: Malagas, 7@9; Red Emperors, 7@8; Cornichons, 5@7.
Melons: Casabas, 1@2 lb. Watermelons, ½@¾ lb.
Olives: Ripe, lb., 4@6.
Pears: Demand good, market firm. Bartletts, mostly 5@7.
Persimmons: Lb., best 10@12½; others, 7@8.
Pomegranates: Lb., 5@9.

CITRUS FRUITS

Grapefruit: Market firm. Northern, per packed box, 3.50@4.00. Arizonas, 5.00@5.75, according to size and quality.
Lemons: Demand slow, market weak. Locals: Special pack, mostly 4.00; market pack, 2.50@3.00; loose boxes, 1.50@2.00; lugs, 75@1.25.
Oranges: Demand moderate, market steady. Navels, special brands, 5.75@6.00; Valencias, special brands, mostly 6.50@6.75; market pack, 4.00@5.00, according to size and quality; culls, field boxes, 2.25@2.50.

HONEY

Warm weather in September and October has improved the late honey flow in the Sacramento Valley. Bees in Southern California are reported not going into the winter in very good shape. Carlot supplies are practically exhausted except of alfalfa honeys. Demand has been light except for alfalfa, but market is firm due to light supplies. Considerable honey is being disposed of locally in small lots. Carlots f. o. b. usual terms at loading points, per lb. Extracted: White Orange Blossom nominally, 11@12½; White Sage nominally, 10½@11½; Light Amber Sage, 7½@8½; Light Amber Alfalfa, 6½@7½; Hawaiian honey, f. o. b. San Francisco, per lb., white, 6½; Light Amber, 5½; Dark Amber, 4½. Beeswax: Practically no demand or movement. Growers receiving 20@22 per lb. for good wax in small amounts.
Beeswax: Practically no demand or movement. No sales reported.

NUTS

Cal. Walnut Growers Assoc.:
Opening prices to wholesalers:
No. 1 Softshell 31
No. 2 Softshell 21
Fancy Budded 34

GRAIN AND FEEDS

Grain Exch. price bid Nov. 15:
Barley: 100 ton lots, Dec. del., 1.32.
Milo: 100 ton lots, Nov. del., 1.35.

HAY

Alfalfa Growers of California report:
The market for alfalfa hay shows no material change for the week in demand, prices or in the general situation. In some of the large producing and shipping districts local sales are being made at several dollars above those in central markets.
There were 1,620 tons of grain and alfalfa hay received on Los Angeles tracks the week ending November 12, with 480 tons held over.
Prevailing prices last week, delivered in the vicinity of Los Angeles:
No. 1 Dairy Alfalfa 22.00
Standard Alfalfa 17.00
Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:
Tame Oats ..... 20.00@26.00
Barley ..... 16.00@24.00
Alfalfa, Rabbit ..... 24.00@28.00
Alfalfa, No. 1 Dairy ..... 19.00@21.00
Standard ..... 16.00@18.00
Straw 12.00

San Francisco Markets

San Francisco, November 15, 1921.

BUTTER

Extras 49½
Prime Firsts 46

Nov.	8	10	11	12	14	15
'21	50	50	---	---	49½	---

CHEESE

Dairy Exchange quotations:
Cal. Flats ..... 26@36
Cal. Y. A. 33½
Ore. Trips 30
Ore. Y. A. 34

Nov.	1	2	3	4	7	8
'21	---	---	68	68½	66	65

EGGS

Dairy Exchange quotations:
Extra 66
Extra Firsts 58
Extra Pullets 51
Undersized No. 1 ..... 46½

Nov.	8	10	11	12	14	15
'21	65	63½	---	---	63½	66

POULTRY

Wholesale prices are:
Poultry: Young chickens, Leghorns, 1 to 1¼ lbs., 48@50 per lb.; above 1¼ lbs., 26@27 per lb.; heavy breeds, 26@27 per lb.; staggy roosters, 20@25 per lb.; old roosters, Leghorns, 16 per lb.; heavy breeds, 18 per lb.; hens, Leghorns, large, 25@28 per lb.; small to medium, 24 per lb.; heavy breeds, 28@30 per lb.
Ducks: 20@22 per lb.
Geese: 30@33 per lb.
Turkeys: Live, old, 35 per lb.; spring, 38 per lb.; extra large, 40 per lb.; do, dressed, 40@42.
Squabs: Fancy, 50; do, common, per dozen, 3.50; old pigeons, 3.50 per dozen.
Belgian hares: Live, 16@18 per lb.; do, dressed, 25@28 per lb.

LIVESTOCK

Western Meat Co. quotes:
Weighed off cars at our yards in South San Francisco:
Cattle: No. 1 steers, 6@6½; do, second quality, 4¾@5¾; cows and heifers No. 1, 4¾@5¼; do, second quality, 4@4¾; bulls and stags, 3@3½.
Calves: Light weight, 7@8; heavy, 5½@6.
Sheep: Wethers, 4@4½; ewes, 2¾@3¼.
Lambs: 7@7¾.
Hogs — Hard, fat, grain-fed, weighing 125 to 200 lbs., 10; 200 to 250 lbs., 9; 250 to 300 lbs., 8; light sows, 8; heavy, 7.
California Farm Bureau Marketing Association reports:

No. Hogs	Av. Wt.	Dock	Price
Tulare, November 8			
95	176	-----	9.35
88	184	-----	9.30
99	167	-----	9.25
41	183	-----	9.25
86	194	-----	9.00
44	222	-----	8.75
18	205	120	8.00
4 feedrs	120	-----	8.00
13	305	220	6.00
5 cars, 39 consignors, $8,238.40.			
Visalia, November 9			
34	191	-----	10.00
87	179	-----	9.80
11	187	-----	9.25
49	224	-----	9.00
8	308	-----	8.85
7	293	90	6.85
1	420	-----	4.00
2½ cars, 17 consignors, $3,740.62.			
Hanford, November 10			
66	185	-----	9.75
2	425	20	7.25
1 car, 8 consignors, $1,244.79.			
Visalia, November 10			
69	198	-----	9.70
1 car, 1 consignor, $1,324.05.			
Corcoran, November 11			
101	186	-----	9.80
44	174	-----	9.80
36	232	-----	9.00
4	492	70	7.00

2 cars, 10 consignors, $3,478.56.
Total for the week, 11½ cars; 75 consignors, $18,026.42.
These prices are f. o. b. shipping point to the farmer, while the prices quoted by the newspapers are off cars at their packing houses.

POTATOES AND ONIONS

Street prices:
Potatoes: River, fancy, 2.40@2.60; choice, 2.00@2.25; Oregon Burbanks, 2.65@2.75; Salinas, 3.75; netted gems, 2.75@2.90; British Queens, 2.25@2.35. Sweets, 3@3¼.
Onions: New crop Yellow, 3.25; Brown, 4.00@4.25; Green, 1.50@2.00 per box.
Garlic: 3@5 per lb.

VEGETABLES

Wholesale selling price:
Artichokes: 10.00@13.00 cr.
Beans: String, 3@5 lb.; Lima, 3@5. fy. 9@10: Wax, 4@5.
Brussels Sprouts: 6@7 per lb.
Carrots: Sk., 1.00@1.25.
Celery: 1.50@2.25 cr., bunch 25@35; bleached, 3.00@3.50.
Cucumbers: Lug, 50@75; hothouse 1.35@1.50; Southern, 60@85.
Eggplant: 1.00@1.25 lug.
Lettuce: Crate, 75@1.00; Los Angeles, 1.50@2.00.
Okra: 1.00@1.50 per box of about 10 lbs.
Peas: Lb., 10@15.
Peppers: Bells, 3@4 lb.; 50@75 lug; Chili, 3@5.
Pumpkins: 1.00@1.25 sk.; lb., 3. Crookneck, 4.
Spinach: 4 per lb.
Tomatoes: 50@75; few, 1.00; basket, 50@75; green, 75@1.00 lug.

FRESH FRUITS

Apples: California: Bellflower, 1.00@1.15; B grade, 75@90; Newton Pippins, 3½ and 4 tier, 1.75@2.00; 4½ tier, 1.60@1.75; B grade, 1.25@1.35; Spitzenburg, 4 tier, 1.50@1.75; 4½ tier, 1.15@1.50; Baldwin, 4 tier, 1.40@1.60; 4½ tier, 1.15@1.35; Langford, 3½ and 4 tier, 1.50@1.75; 4½ tier, 1.25@1.50. Northwestern: Spitzenburg, extra fancy, 2.50@2.75; fancy, 2.25@2.50; choice, 1.75@2.00; Rome Beauty, fancy, 3.00@3.25; choice, 2.50@2.75; banana, extra fancy, 3.25@3.50; fancy and delicious, 2.75@3.00; Jonathan, extra fancy, 2.00@2.50; fancy, 1.75@2.00; Lady apples, 3.50.
Avocados: California, doz., large, 3.00@5.00; small, 1.00@2.00; Fla., 3.00@5.00; Tahiti, 3.00@4.50.
Bananas: Eastern, 6@7; Hawaiian, 7@8.
Blackberries: 60@85.
Chestnuts: 18@25 per lb.
Cranberries: Bx., 4.50@5.50; Cape Cod, 15.00@16.00 bbl.
Figs: Black, double layer, 75@1.00.
Grapes: Black, 2.75@3.25; Tokay, 3.00@3.50; Muscat, 2.75@3.75; Malaga, 2.75@3.25; seedless, 4.00.
Huckleberries: 8@11 lb.; fy., 15@18.
Melons: Persian, 1.00@1.25 per small cr., 1.50 large; Honeydew, 1.00@1.25 per standard crate; Casabas, 65@90 per doz.
Olives: Large, 8; small, 5.
Persimmons: 1.50@2.00 bx.
Pineapples: 4.00@4.50 dozen.
Pomegranates: 2.00@3.00.
Prunes: 1.50@1.75 cr.
Quinces: 1.25@1.50 lug.
Raspberries: 75@1.00 dr.
Strawberries: Cr., 1.50@2.00.

DRIED FRUITS

Apples, 1921 (Packers' Quotations):
Choice (in 50s) 10¼
Extra choice (in 50s) 10½
Apricots, 1921 (California Prune and Apricot Growers) Bulk Basis:

	Sunsweet	San Joaquin
Standard	12	10½
Choice	16	13½
Extra Choice	17	14½
Fancy	19	15½
Extra Fancy	21	....

Peaches, 1921 (California Peach and Fig Growers), Sept.-Oct,-Nov. shipment, guaranteed to January 1:

	Yellow	Muir
Slabs (in 50s)	@9	...@...
Standard (in 50s)	@9¼	...@9½
Choice (in 50s)	@9 7/8	...@...
Fancy (in 50s)	@11	...@12
Extra fancy (in 50s)	@12	...@13
Practically Peeled—		
Standard (in 50s)	@10¼	...10½
Choice (in 50s)	@10 7/8	...@...
Fancy (in 50s)	@12	...@13
Extra fancy (in 50s)	@13	...@14

Cartons, 30 11-oz., per case 3.10
Cartons, 60 11-oz., per case 6.00
Cartons, 24 2-lb., per case 6.50
Cartons, 10 5-lb., per case 6.60
Figs, 1921 (Cal. Peach and Fig Growers), Sept.-Oct. shipment, guaranteed to Jan. 1:
White—
Standard (in 50s) 6½
Choice (in 50s) 8
Fancy (in 50s) 10½
Bricks, 12 No. 10s 1.10
Bricks, 24 No. 8s 1.80
Bricks, 50 No. 6s 2.80
Bricks, 70 No. 4s 2.95
Layers, 10-lb., 4-row 1.60
Layers, 10-lb., 5-row 1.40
Calimyrna—
Standard (in 50s) 7½
Choice (in 50s) 10½
Fancy (in 50s) 13
Bricks, 24 No. 8s 2.05
Layers, 10-lb., 6-row 1.90
Black—
Standard (in 50s) 6
Choice (in 50s) 8
Fancy (in 50s) 11
Raisins, 1921 (Cal. Assoc. Raisin Co.):
Sun-Maid Raisins:
Muscats: 36 15-oz. cartons, seeded, 14¾ lb.; 25-lb. boxes, bakers' seeded, 13 lb.; 25-lb. boxes bakers' seeded, 13½ lb.
Muscats: 25 1-lb. boxes, 2-crown loose, 13¾ lb.; 25 1-lb. boxes, 3-crown loose, 13¾ lb.; 25 1-lb. boxes, 4-crown loose, 15 lb.
Thompson Seedless: 48 15-oz. cartons, unbleached, recleaned, carton, 16 lb; 25-lb. bulk 14½; 25-lb. bakers' graded, unbleached, 17; 25-lb. boxes, choice, sulphur bleached, 18; 25-lb. extra fancy, sulphur bleach, 19; 25-lb, oil dipped, 15½; 25-lb. soda dipped, 15¼.
London Layer Raisins: 3-crown London layer: 20-lb. boxes, $3.50 per box; 10-lb. boxes, $1.85; 5-lb. boxes, $1.00.
Clusters: 20-lb carton, clusters, $4.00 per box; 12 2-lb. carton, clusters, $4.80; 4 5-lb. cartons, clusters, $5.50 5-lb. carton. Imperial clusters, $1.50; 80-lb. vineyard run layer, $12.50.
Sultanas: 25-lb. box unbleached, recleaned, 13½ per lb; 25-lb. box, soda dipped, 14½; 25-lb. oil dipped, 14½.
Black Grapes: 25-lb. boxes black grapes, 14½ per lb.
Old Crop:
Muscats: 36 16-oz. cartons, seeded, 14½ per lb.; 25-lb. bakers' seeded, 13; 1-crown loose Muscats, 13½.
Sultanas: Sultans, unbleached, recleaned, 13½ per lb.
Thompson Seedless: Soda dipped Thompsons, 15 per lb.; oil dipped Thompsons, 15; black grapes, 14½.
Prunes, 1921 (Cal. Prune & Apricot Growers): Sunsweet Quality, bulk basis: 30-40s, 9¼; 40-50s, 8¼; 50-60s, 6¾, 60-70s, 6¼; 70-80s, 80-90s, 90-100s, 5½. Growers Brand ¼c less on all sizes. All prices subject to change at any time.

CITRUS FRUITS

Oranges: Valencias, 4.00@6.25 per box. Lemons, 3.00@5.00 per box; lemonettes, 1.50@3.00 per box. Grapefruit, 3.75@4.25 per box for California and Arizona. New crop Navels, 6.00@6.50.

BEANS

Below California Bean Growers Association shippers prices choice recleaned:
Large Whites 5.15
Small Whites 4.90
Pinks 4.40
Mexican Reds 4.40
Red Kidney 6.80
Henderson Bush 5.75
Cranberries 5.80
Bayos 4.80
Blackeyes 4.35

NUTS

California Almond Growers Exchange's prices:
Languedoc 14½
Hard Shell 11

HAY AND FEED

Alfalfa Growers of Cal:
Choice Dairy Alfalfa 16.00
Standard 15.00
A. W. Scott Co. says:
Arrivals past week, 760 tons, as compared with 160 previous week. Prices of all hay have advanced slightly, not from demand but to cover warehouse charges, as practically everything is out of the fields and supplies must now come from stored stocks. Alfalfa is in best demand and has again advanced. Shipping call has been strong and consumers here and all over the state are buying, though moderately. A heavier movement than we have yet seen is now evident. The greater part of Nevada hay carrying freight rates available to this market has changed hands, much of it for southern parts of the state. California stocks are comparatively light and held at figures higher than the Nevada offerings. Millfeeds first responded to a strong spurt in Eastern grains, but with their later drop have slumped back and close dull and weaker. Linseed meal is still absent. Coconut stocks are light and demand active. Alfalfa meal is stronger as hay advances.
We quote today wholesale prices in carload lots as appear from dealers' transfers upon the markets in San Francisco (for prices to consumers, charges of switching, cartage, commission and handling expenses must be added, according to conditions).
Wheat hay No. 1 ..... 17.00@19.00
Wheat hay, fair grade ..... 14.00@17.00
Tame oat hay ..... 15.00@18.00
Wild oat hay ..... 11.00@13.00
Alfalfa hay ..... 13.00@16.00
Stock hay ..... 9.00@12.00
Straw ..... 10.00@12.00
Rolled Barley ..... 29.00@30.00
Ground Barley ..... 31.00@33.00
Oats, Rolled Feed ..... 34.00@36.00
Bran and Millrun ..... 24.00@27.00
Middlings ..... 40.00@44.00
Cocoanut Meal ..... 24.00@26.00
Alfalfa Meal ..... 21.00@23.00
Cottonsed Meal ..... 40.00@42.00
Sugar Beet Pulp ..... 29.00@30.00
Molasses Tanks ..... 21.00 Barr. 25.00
Milo Maize, Corn Meal and Cracked Corn ..... 38.00@41.00
Scratch Feed ..... 44.00@46.00

GRAIN

Sales on Grain Exchange:
Barley: Feed, 1.25½@1.32½; shipping, 1.35@1.42½.
Red Feed Oats: 1.55@1.60; do, seed, 1.75@2.10.
Mill Wheat: 1.80@1.90; feed, 1.85@1.95.
Corn: California yellow, 1.45@1.50; eastern yellow No. 2, 1.37@1.40; No. 3, 1.36@1.38; No. 3 Kaffir, in bulk, nominal; white Egyptian, 1.65@1.67½; California, red milo, 1.62½@1.67½.

Citrus Markets

Los Angeles, November 16, 1921.

The Valencia season is closing with exceptionally strong market condition. The shipping of Navels is beginning, but none have yet appeared in auction and the market reception of Navels is not known. They have been running somewhat under color though it is hoped the period of transit will finish them off in good shape. The sugar content is generally declared sufficient.
The lemon market is exceptionally quiet and prices are not satisfactory.

Shipments

Shipments of citrus fruits to date since November 1, 1921, Southern California: Oranges, 368 cars; lemons, 191; total, 559. To same date last season: Oranges, 106; lemons, 207; total, 313. From Central California to date this season: Oranges, 19; lemons, 8; total, 27. To same date last season: Oranges, 11; lemons, 9; total, 20. From Northern California to date this season: Oranges, 4. To same date last season: Oranges, 6; lemons, 1; total, 7.

AT THE AUCTIONS

ovember 8
New York: 35 or., 8 lem. Val., 2.70@ 30; lem., 1.40@6.95.
Cleveland: 3 or., 1 lem. Val., 2.55@ 00; lem., 3.85@4.60.
Pittsburg: 5 or., 2 lem. Val., 3.15@ 20; lem., 2.00@5.20.
St. Louis: 2 or., 1 lem. Val., 3.30@ .30; lem., 2.30@2.55.
Boston: 12 or., 4 lem. Val., 1.85@6.60; em., 2.45@4.55.
Philadelphia: 9 or., 3 lem. Val., 3.00@ .70; lem., 2.65@3.85.
Cincinnati: 3 or., 2 lem. Val., 3.65@ .80; lem., 3.30@4.25.

lovember 9
New York: 33 or., 8 lem. Val., 2.20@ .60; lem., 1.75@4.55.
Boston: 9 or., 2 lem. Val., 2.45@6.60; em., 1.90@3.55.
Pittsburg: 4 or., 1 lem. Val., 3.45@ .95; lem., 3.70.
Philadelphia: 10 or., 2 lem. Val., 2.90@ .60; lem., 2.05@3.05.

lovember 14
New York: 33 or., 10 lem. Val., 2.20@ .15; lem., 2.55@4.20.
Boston: 14 or., 2 lem. Val., 2.75@6.95; em., 3.15@5.90.
Cleveland: 3 or., 1 lem. Val., 2.85@ .25; lem., 2.15@2.60.
St. Louis: 2 or. Val., 3.10@4.80.

lovember 15
New York: 20 or., 7 lem. Val., 2.75@ .45; lem., 2.65@4.00.
Boston: 10 or., 2 lem. Val., 3.55@7.40; em., 2.80@4.05.
Pittsburg: 2 or., 1 lem. Val., 3.55@ .25; lem., 2.20@4.25.
Philadelphia: 2 or., 2 lem. Val., 3.55@ .85; lem., 2.00@3.40.
St. Louis: 2 or., 1 lem. Val., 3.45@5.00; em., 2.30@2.70.

EGG LAYING CONTEST

(Continued from Page 545.)

grain in the litter from the feed of the previous night to keep them busy till 8:30, when they are given the morning feeding of the scratch mixture consisting of 6 pounds barley, 9 pounds wheat and 15 pounds cracked yellow corn scattered in a deep straw litter. At noon as much moist, crumbly mash is fed as the fowls will clear up in 10 minutes, using the dry mash formula. The night feeding consists of the morning scratch grain mixture plus 20 pounds sprouted barley. A dry mash consisting of 250 pounds bran, 180 pounds middlings, 80 pounds ground oats, 100 pounds cornmeal, 60 pounds fishmeal, 60 pounds meat scrap, 40 pounds soybean meal, 40 pounds sifted salt, is kept before the birds in dry mash hoppers.

Production ten highest hens each entry for October: Alex Stewart, Santa Cruz, 229 eggs; Hanson's Poultry Farm, Corvallis, Oregon, 205; H. H. Corbett, Santa Cruz, 207; L. A. Thorewill, Santa Cruz, 203; E. D. Crewdson, Santa Cruz, 200; Sunrise Poultry Farm, Santa Cruz, 196; Geo. Gray, Santa Cruz, 193; D. B. Walls, Petaluma, 191; J. J. Shore, Santa Cruz, 188; J. W. Neef, Santa Cruz, 185; C. H. Russel, Santa Cruz, 185; Gray, 183; Neef, 181; Sea Breeze Farm, Capitola, 177; Corvallis, 174; Thornewill, 170; Paul Tallman, Santa Cruz, 165; Pacific Trapnest Station, Windsor, 163; Levi Mellon, Santa Cruz, 164; C. D. Breeks, Santa Cruz, 163; Kinmount Poultry Farm, Richmond Highland, Washington, 160; Boehm & Noel, Hayward, 152; Lytton Electric Hatchery, Lytton, 151; D. C. Berry, Santa Cruz, 151; S. L. Gibson, Santa Cruz, 149; Aromas Hatchery, Aromas, 143; Hollywood Farm, Hollywood, Washington, 139; Webb's Kackle Farm, Santa Cruz, 139; Hollister Hatchery, Hollister, 139; W. H. Marshall, Santa Cruz, 136; C. E. Hyde, Sea Bright, 136; Geo. Barker, Santa Cruz, 132; Thos. Stewart, Redwood City, 125; Pine Tree Poultry Farm, Los Gatos, 129; San Jose Poultry Farm, San Jose, 121; Fred Stallings, Santa Cruz, 116; Wm. Bacon, Sebastopol, 116; Gibson, 113; W. F. Vernar, Santa Cruz, 113; Piper's Poultry Place, Santa Cruz, 106; T. A. Macy, Santa Cruz, 105; Bolfing's Poultry Farm, Gilroy, 96; F. J. Hooper, Hollister, 92; Lot Durgan, Watsonville, 86; Mrs. H. C. Kleinsmith, Hoff, Oregon (Barred Rocks), 79; Warren Wood, Santa Cruz, 78; O. A. C., Corvallis, Oregon, 71; U. Komatsu, Fresno, 70; Geo. B. Feris, Grand Rapids, Mich., 68; A. E. Seifert, Santa Cruz, 68; Ely's O. K. Ranch, San Diego, 66; F. B. Grill, Menlo Park, 66; W. A. Ford, Umatilla, Oregon, 62; R. C. Lavery, Santa Cruz, 60; R. H. Young, Santa Cruz, 26; Geo. B. Ferris, West Palm Beach, Florida, 20; W. S. Freeman, Hayward, 16; Geo. Wood, Santa Cruz, 9; Wood, 8; Jas. Boucher, Hollister, 5; N. C. Westerfield, Modesto, ; E. F. Woodhull, Campbell (Barred Rocks), 0.

Poultry Queries

Conducted by Jean A. Koethen

Turkey Partnership

Please explain fair way of dividing turkeys when two parties go into partnership, one furnishing breeding stock and eggs, the other hatching and feeding and raising young stock up to time of fattening.—Subscriber.

The party who furnishes stock and eggs should put them in at current prices in your neighborhood; the other party will have to keep careful account of what he spends for feed and of the time he spends in working with the turkeys, charging current wage for such labor, whether it be by hour or month. If he raises feed or provides range that also should be charged up at a rate agreed on by both parties. At the end of the time agreed upon—in this case at fattening time—the turkeys should be distributed proportionately. For example: A puts in 20 hens worth $5 each and 2 toms worth $10 each, and 50 eggs at 50 cents each, a total of $145. B spends 2 hours a day for 2 months and 1 hour a day for 4 months caring for this stock and their offspring, a total of 240 hours at, let us say 50 cents per hour, making $120. He also spends $75 for feed and puts in green feed at an agreed valuation of $10, making his total contribution to the partnership $205. If he is obliged to build a brooder house or purchase hens for hatching, this expense must be added but the exact value of each would have to be settled between the partners because hens and brooder would be a permanent investment and could not properly be charged in as a whole. Let us say for convenience that A's total contribution is $120 and B's $240. A would then get one-third of the young stock and B two-thirds. These matters are more often arranged in the lump than by going into such careful details, but each party must have a pretty clear idea of what all these items are worth or there will be dissatisfaction.

Fattening Turkeys

Would molasses beet pulp soaked be a good feed for hatching turkeys or would plain pulp be better? Is boiled barley and milo better than the uncooked grain for fattening?—Subscriber, El Cajon.

I have never heard of beet pulp or boiled grain being used for fattening turkeys. Whole or rolled barley and cracked or whole corn are the standard feeds for this purpose. Milo is sometimes used, but Indian corn is better.

Sick Turkey

I have a turkey three months old which was taken with diarrhoea, then for several days before it died it drew its head back, would scarcely eat and its wings drooped. What was the trouble?—Subscriber, El Cajon.

If you made no post mortem examination it is impossible to say whether the bird had blackhead or indigestion. That drawing back of the head indicates severe intestinal disturbance and is not usually connected with blackhead. Yellowish spots on the liver almost invariably indicate blackhead, and this disease cannot be diagnosed with certainty without a post mortem. A sudden change in the ration sometimes produces severe indigestion and diarrhoea.

Probably Chicken-Pox

A Buff Orpington hen has some kind of growth on her wattles and it is beginning to appear on the comb. The growths look like rough, hard nodules, and there are several bunches of them. There is no odor; hen eats well and comb and wattles are of a healthy color. I have shut her away from other birds.—Subscribet, El Cajon.

You did well to isolate her. She has apparently a light case of chicken-pox, and you may have difficulty in keeping it from the rest of the flock. Do not carry anything from her pen to that of the others and be careful about your clothing for chicken-pox is infectious and the germs are easily carried and persist for a long time. It would be a good plan to give the whole flock a little sulphur in their mash—a pound of sulphur to 50 pounds of mash is the dose recommended—or you might write to Poultry Division, University of California, Berkeley, California, about vaccination. The poultry division does not recommend vaccination of a whole flock if it can be avoided, because of the expense, but it might be well to communicate with it if other cases develop.

SUN MAID GROWERS

The Associated Raisin Co. has made another change in name and now becomes "California Sun Maid Raisin Growers."

From the account of the change in the Republican we quote:

"Trustees of the California Associated Raisin Company at a meeting yesterday passed a resolution previously approved by the directors, which changes the time honored name of the greatest cooperative organization in the world to the 'California Sun Maid Raisin Growers.'

"Announcement of the raisin company's intention to change its name to the California Sun Maid Raisin Gowers was made by President Wylie M. Giffen following the trustees' meeting. No intimation of the change had previously reached the public.

"As explained by Giffen, the purpose of the change in the association name is to capitalize the advertising value of Sun Maid in the future and also to bring into the name of the association the word 'growers,' which carries with it a greater significance than the word 'company.'

"President Giffen continued that the Sun Maid brand is famous over the entire country but the name of the association of growers which makes the Sun Maid is lost sight of by the public. One of the main purposes of the change of name is to bring the raisin association's name into such close association with the name of the trade pack that each will be equally well known to the great buying public."

PEAR GROWERS' MEETING

Pear growers will hold a two day conference and program at the University of California on November 21 and 22. Improved methods in the handling of pears will be discussed by experts of the University of California and the pear growing industry. Dr. J. C. Whitten, chief of the division of pomology, will discuss pear growing in other countries. E. B. Babcock, professor of genetics, and E. L. Overholser, assistant professor of pomology, will give lectures on the opening day of the conference. The Pear Growers Association has arranged to bring Professor Reimer of Oregon agricultural college to the conference. Professor Reimer will present his recommendations for control of pear blight and his data on blight resistant stocks for pears.

VETERINARY QUERIES

(Continued from Page 533.)

water and remove all scale that has formed, then when the parts are dry rub in plenty of common engine oil such as you use in the crank case of your automobile. Do this every two or three days and the trouble will soon disappear.

Soft Butter

What remedy, if any, can you give for a cow which gives unusually soft butter? She is about seven years old and came fresh about six weeks ago. She is fed alfalfa and grain hay. Last year the butter was some better.—Subscriber.

Soft butter usually results from manner of handling milk and not from anything wrong with the cow. There is some difference in the quality of butter from different cows. In some the little particles of fat in the milk are larger than in others. The coarse particles make the softest butter and the best butter is made from a mixture of milk from several cows, but good butter can be made from the milk of one cow if properly handled. Of course the separator is out of the question with the milk from one cow. Strain milk two or three times to aerate it, cool partly and set in deep pan in cool, dry cellar. The milk and cream must be kept cool and when the cream is churned it should be at 62 degrees Fahrenheit. To give full details for butter making would take more space than is allowed in answering a question in this column, but briefly the essentials for making good butter are cleanliness and low temperature, and the milk must be kept away from vegetables and odors of all kinds, as milk will absorb odors very quickly. Probably your trouble is in not keeping the milk in a cool place and not having it at the proper temperature when churning the cream. Too much green feed has a tendency to make the butter soft, but as you are feeding alfalfa hay and other hay you should have no trouble with the butter.

WEATHER REPORT

San Francisco, Cal., Nov. 12, 1921.

Stations	—Rainfall— Season	Norm.	—Temp.— Max.	Min.
Eureka	1.87	5.53	64	42
Red Bluff	.65	3.39	84	42
Sacramento	.80	1.95	80	46
San Francisco	.87	2.18	75	51
San Jose	.42	1.65	78	42
Fresno	.21	1.21	78	50
San Luis Obispo	.56	2.19	86	42
Los Angeles	1.21	1.17	84	49
San Diego	1.91	.78	74	51

Every Poultryman

FINDS THIS "PAY-STREAK" SOONER OR LATER

EVERY good hen is a mine—a golden mine of eggs. This mine will yield a certain revenue even if you go at it hit-or-miss. But, you can never expect to get the greatest yield—to strike the real "pay-streak"—until you tap the right vein. *And that's feed!*

No matter how carefully selected your stock may be—no matter how good the housing and care you give them—sooner or later you will "dig down" to this rock-bottom fact: feed is the nub and the rub of the situation.

Even the big poultry operators who have been mixing their own feeds and have switched to SURELAY will tell you it's the "cheapest" feed in the long run—cheapest because it nets *more* egg-money in return for the feed-money it costs.

These seasoned poultrymen realize—as you must—that a hen uses more energy in converting poor feed into money than she does in converting good feed into money. And, at that, how little is the difference in cost between good feed and poor feed! But look at the difference in the egg-sheet when you're through!

SURELAY has helped to put many a poultryman on his profit-feet by proving two things to him: First—that cheap feeds lessen the profits of every hen in his flock; second—that our large scale production enables us to turn out a better and more economical feed than he could hope to.

Blended and balanced according to a true-to-test formula, SURELAY stands top-high as a uniform egg mash that will make your hens pay by making them lay. The best way is the find-out-way. Order a sack of SURELAY from your dealer—and see! See how this high-grade mash "assays" in feed value. See how our daily laboratory tests insure the same feed value every time. See how SURELAY actually "pans out" with your flock. See how it rids your mind of feed-worry for all time. For "what's on the tag is in the bag"—always!

Also, send for the new edition of our booklet, "Makes Hens Happy." It is by far the most complete and helpful book we have ever issued on poultry feeding. And it's free! Simply clip the coupon—and mail today!

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CALIFORNIA CULTIVATOR

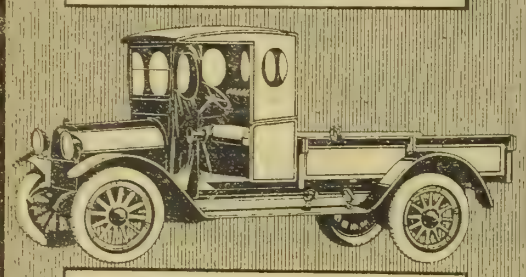
and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

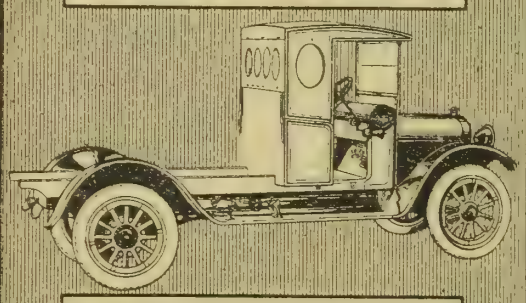
Vol. LVII — November 26, 1921 — No. 22

Gold From Thistles at Half Moon Bay Near San Francisco

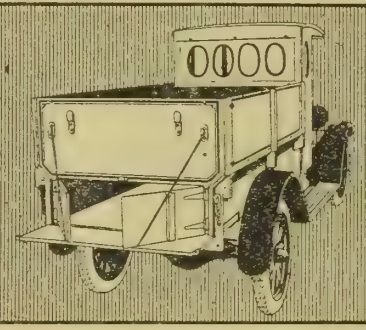
Convertible "Carryall"—$1460



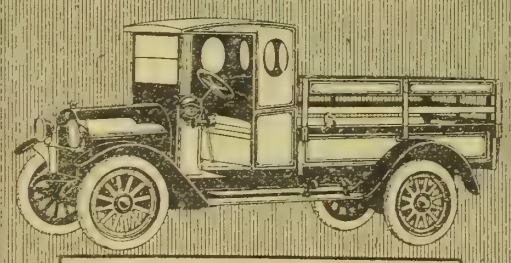
Low Open Express with Cab—$1435



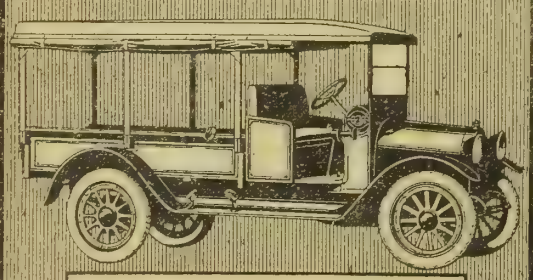
Driver's Cab and Sills—$1360



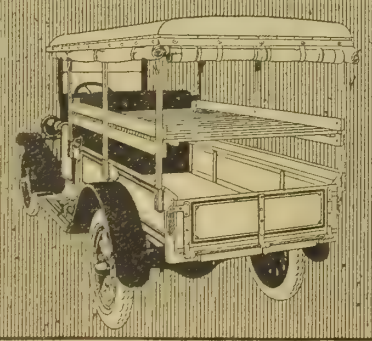
Grain Tight Box—$1485



Stock Rack with Cab—$1460



Canopy Top Express—$1435



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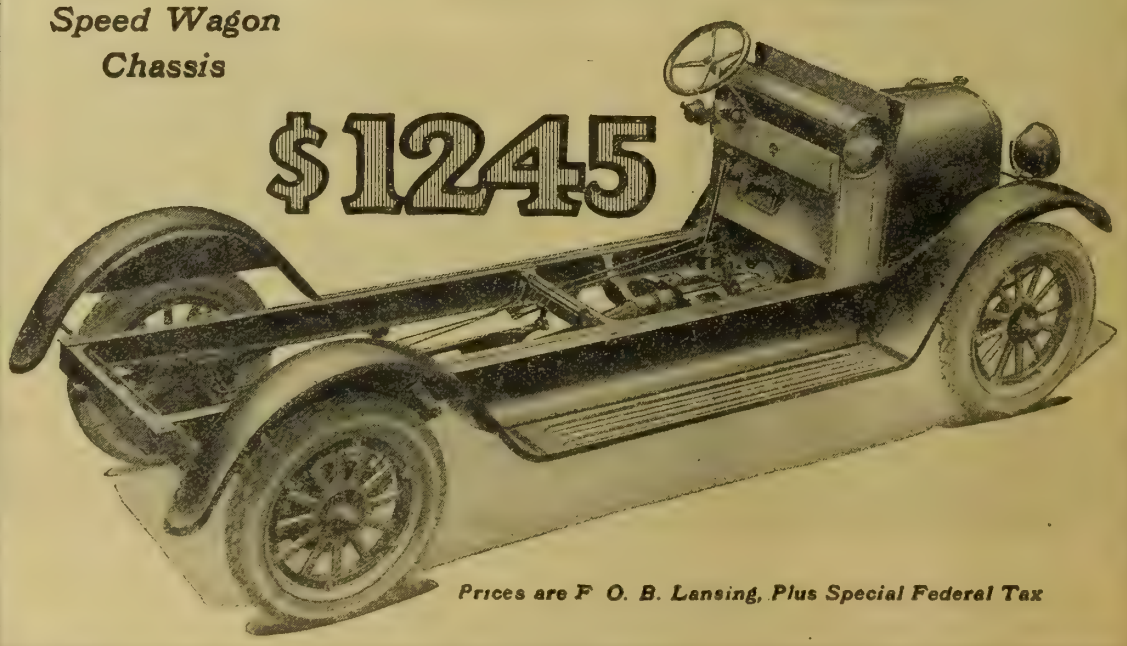

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California Cultivator

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Spray Now for Peach Blight

By Fred K. Howard

EACH year it becomes more evident that the peach grower who produces quality fruit finishes the season with the largest bank account. In planning for a quality crop of peaches one of the most essential factors is the application of the right sort of spray material for the control of fungous diseases. Perhaps the most serious of these diseases in California is ordinary peach blight. This disease is one which it is impossible to control, and the wide awake grower will recognize this fact and use every precaution to prevent its occurrence on the trees of his orchard.

Continued practice of preventive measures for peach blight in California has demonstrated that to be effective sprays must be applied in the fall, if possible, before the middle of December. Consequently the grower should plan his spraying program in advance of this time and see to it that his spray rig is in proper shape to do a satisfactory job. Very often power outfits are left from one year to the next without giving them a thorough cleaning, only to find that when the next season rolls around many new parts are needed, due to the corrosive effect of spray chemicals on the metal parts of the outfit. Spraying of any sort, and particularly spraying for peach blight, requires very careful application under sufficient pressure to break up the liquid in a fine driving mist which will completely drench every limb and twig of the tree. Spray rigs without close fitting, well cared for working parts will not accomplish this result in a satisfactory manner. To apply spray to peach trees in any but the proper way will waste more or less of the material and may not be successful in accomplishing the desired results in preventing the disease. Consequently makeshift methods do not pay in the long run.

The accepted treatment for the prevention of peach blight is an application of Bordeaux mixture composed of five pounds bluestone, six pounds lime, to 50 gallons of water. This is commonly called a 5-6-50 formula. Commercial lime-sulphur solutions diluted 1-9 or 1-10 may be used with equal success, and experiments in the past few years have demonstrated that the so-called dry lime-sulphur solutions diluted as recommended by the manufacturers are satisfactory for the control of this disease. It matters little which of these mixtures are used provided care is taken to follow directions in mixing or diluting the materials.

In choosing a day for spraying the grower should select one when practically no wind is blowing and when storms in the immediate future are not likely, since a storm within 24 hours after the spray application will probably wash off enough of the material from the twigs that it would be wise to repeat the application.

A great many growers are not familiar with the appearance of peach blight and often consider that their trees are free from disease when in reality there are sufficient blight cankers to be serious infection points for the following year.

Consequently a grower snould become familiar with the appearance of this disease and plan for taking every precaution necessary to prevent its spread. The spores of the blight fungus do not grow sufficiently that they can be detected by the ordinary observer until after the first warm days of late winter and early spring. It is then that the typical cankers are most noticeable in the form of gumming slits in the bark of the twigs of the previous season's growth and around the fruit and leaf buds on these twigs. In badly diseased trees during warm, foggy or wet weather the gum becomes very abundant, in fact, it is during just such weather that the disease makes its greatest headway, often killing all of the buds on the tree, being most serious in the milder cases nearer the ground. When the disease has reached this stage the damage is done for that season, and some damage is done which will not show until the following season. Consequently the fall spraying program, in an effort to prevent its occurrence, will be the course of the wise and wide awake peach grower, and the men who know best regarding the value of spraying do not neglect to have everything in readiness for the job and do it at the right time in the proper way.

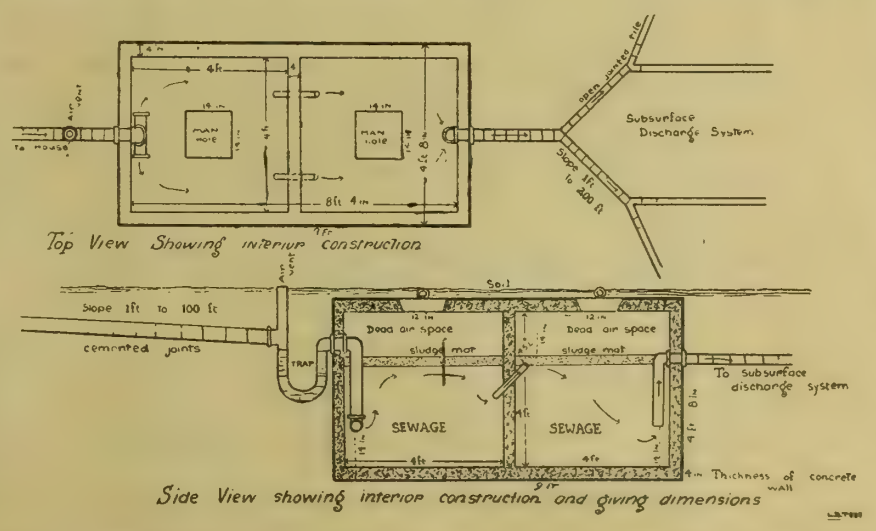
Concrete Septic Tanks

THE well managed farm of today means many household conveniences as well as labor saving farm machinery. Back breaking drudgery has been largely eliminated from both house and fields. Running water and the kitchen sink and bathroom have supplanted the old time pump and open, unsanitary drainage. But the most efficient disposal of sewage remained a problem until the concrete septic tank was invented. It is a simple, cheap and effective device, rapidly supplanting the drywell, with its constant menace of water pollution. In brief, there has come to the farmer his own little sewerage plant in concrete, which answers his purpose even better than large city works, for he has neither the tax nor repairs that always attach to a city sewer system.

The principle upon which the concrete septic tank operates is extremely interesting. It consists of a long, water tight cistern through which sewage passes very slowly and evenly. Located underground, it is warm and dark, thus affording perfect conditions for the development of the bacteria or germs which clarify and render harmless the sewage. After passing through the septic tank, the sewage is practically free from all suspended matter and has the appearance of water. From the septic tank this clear effluent is discharged into three lines of ordinary farm drain tile.

Size and Location of Tank

While the odor from the septic tank is scarcely noticeable, it is nevertheless best to locate it at some distance from the house. Choose a spot easy to excavate so that the top of the tank can be sunk six inches below ground level and where the lines of drain tile will have sufficient fall to carry off the discharge fluid. The tank should be large enough to hold the entire sewage for one day. For a family of eight to ten people occupying a house, two bathrooms fitted with the customary appliances in the way of tubs and stationary washstands, and downstairs the kitchen sink, a concrete tank having two compartments, each four feet long by four feet wide by four feet high, will be required. Since the top and bottom are each four inches thick and the top of the tank is six inches below ground level, dig the pit five feet two inches in depth. The walls of the tank are eight inches thick and the partition between the two compartments six inches. Therefore, the length of the pit should be nine feet ten inches and the width five feet four inches.



Making Forms and Placing Concrete

If the earthen walls of the pit stand firm only inside forms will be needed. These inside forms are merely boxes made of one-inch boards. Two boxes will be required to make two compartments. The outside dimensions of the boxes should be four feet square by four feet high. The boxes or forms will be placed on the freshly laid concrete floor.

The concrete should be mixed in the proportion of one part Portland cement, two parts sand and four parts crushed rock or gravel. Place a four-inch thickness of concrete in the bottom of the pit to form the floor of the tanks. On top of this concrete set the box forms, which should be ready for immediate use. Place the forms so that there is a space of six inches between them and an eight inch space between them and the earthen walls of the pit. Then commence depositing the concrete for the walls and partition. As soon as the level of the concrete reaches the hole in the forms place in the holes six inch pipes as illustrated. Then continue the concreting until even with the top of the forms.

Reinforced Top and Manholes

Two ordinary iron manhole frames and covers may be obtained from a local dealer in building supplies. The manhole covers should fit tightly and should not be perforated. The manhole frames should be ten inches high so that when placed on top of the forms the upper edge will be even with ground level. If the manhole frame is of less height than this, it should rest on a circular piece of one inch board which is nailed to the top of the form. Since the concrete roof is to be self-supporting, it will be necessary to reinforce it with a few lengths of three-eighths inch round steel rods. There will be needed four pieces of three-eighths inch rods nine feet six inches long, and eight pieces five feet long. The roof is now ready to be placed. Place the manhole frames in proper position on top of the forms and deposit the concrete to a depth of one inch and on the concrete lay the long and short bars. When the bars are placed, deposit the balance of the concrete so as to bring the roof to a total thickness of four inches. As it will be covered with earth it is not necessary to give this top surface a smooth finish, merely level the surface by striking off with a straight piece of board. The tank should now be allowed to rest undisturbed for at least two weeks. At the expiration of this time, saw away wooden top of the forms inside of the manhole frames. Then enter the tank and remove the wooden forms, passing the lumber out the manhole opening. While in the tank make certain that

(Continued on Page 559.)

Agricultural News Notes of the Pacific Coast

Northern California

Sycamore, Colusa County, has harvested its crop of walnuts.

Grapes have all been shipped from Lodi district of San Joaquin County.

A hatchery with capatity of 140 incubators is being erected at Sonoma.

The Northern California Orange and Olive Exposition will be held at Oroville, November 21-26.

San Joaquin County supervisors have let contract for construction of the Clements-Ione road in Goose Valley.

Farmers in the Woodbridge district of San Joaquin County are considering formation of a Wright irrigation district.

The state university reports swine production increasing. Forty-two per cent of California farms are raising hogs.

Movement of dressed turkeys from ranches to San Francisco markets has begun. Dealers are retailing at 50 cents a pound.

Mrs. C. E. Ellis of Glenn has been elected county chairman of the newly organized farm home department of the Glenn County farm bureau.

The Zante currant crop of the San Joaquin Valley is reported at about 100 tons. The currants are picked several weeks earlier than Thompsons.

A representative of the California Growers Association has been in Tehama County investigating feasibility of establishing peach cannery in that section.

The Rice Growers of California has postponed opening of its salesrooms announced for November 15, because market on paddy has been depressed by outside sales.

The Tehama County farm bureau is asking the board of supervisors to appoint a committee to suggest needed changes in county charter of laws affecting agricultural interests.

The new warehouse and exchange building of the Santa Rosa Poultry Association was formally opened last week. Construction was begun in June and the building cost $200,000.

Wholesale potato men of the northern part of the state met in San Francisco November 9 and discussed nematodes, or potato eel worms, in the effort to secure some means of securing greater freedom in shipping to other states.

Short courses in general agriculture will be given at the university farm at Davis, January 2-7. These are especially designed for prospective settlers and those wishing to acquaint themselves with the agricultural resources of California.

The first steps toward determining the actual cost of producing butter fat and market milk on the dairies of Sonoma and Marin Counties, in keeping with a state-wide investigation being conducted upon the request of the California legislature, were taken November 11 at a meeting of milk testers at Valley Ford.

The Glenn County Holstein-Friesian Association has been organized with 30 members. Its first officers are: R. J. Bender, Ord, president; W. C. Saxton, Ord, secretary and treasurer. The directors are J. L. Fulton, Ord; N. E. Mulick, Willows; J. Cook, Orland; B. J. Bills, Orland; W. C. Saxton, Ord; 2 R. J. Bender, Ord; W. Smith, Bayliss.

Central California

The city of Merced has purchased a 12 acre park site on Bear Creek.

Salinas Valley stockmen are bringing in feeder cattle from Mexico.

Packing of navel oranges is well under way at Sanger, Fresno County.

A radio station and emergency air base are to be installed at Visalia.

Almost a thousand persons visited General Grant Park during November.

There will be a farm bureau hog auction sale at McFarland, December 23.

Stockton is selecting site for a municipal camp in the mountains either of Amador or Calaveras Counties.

A poultry show will be held at Hanford, Kings County, December 16-18. This is the Kings County annual.

The McKiernan herd of cattle has been brought down from mountain meadows and placed in pasture at Success.

The raisin plant at Clovis, Fresno County, is now shipping about 25 cars weekly, 90 tons daily passing through the stemmers.

Farm center meetings in Kern County at Shafter, November 28; Arvin, December 2; directors, Bakersfield, December 3.

Stockton's claim for a deep water harbor will be settled at the next session of the rivers and harbors board of the U. S. army engineers.

The Fresno County farm bureau is asking the supervisors to pass an ordinance requiring school busses to stop before crossing railroad tracks.

The peak of the carlot celery shipment from the Delta section will go out about Thanksgiving. The acreage is 25 per cent less than last year.

Sequoia National Park, home of the giant trees, will be open during the winter months, the parks service announced, the route being by the Middle Fork Road from Three Rivers.

Fresno County is very proud of her official position, announced by the federal census bureau, of second richest county in the United States in value of crops and livestock products.

The Raisin Association finds that a package of raisins is being offered on the market, labeled "California Sun-Raised Seedless" in lettering and general appearance to correspond with "California Sun-Maid Seedless."

The name of the California Associated Raisin Company has been formally changed to "California Sun Maid Growers." The purpose of the change, as explained by President Giffen, is to capitalize the advertising value of "Sun Maid."

Horticultural Commissioner J. B. Hickman of Monterey County announces that anyone having greenhouse, garden or orchard infested with cottony cushion scale can be supplied with the scale parasite, Vedalia cardinalis, and thus be assured of a clean-up.

The special committee on the big Squaw Valley irrigation project met recently to settle details of boundaries and apportionment of cost of a preliminary survey. The $20,000 cost has been divided as follows: Fresno County, $11,000; Tulare County, $6,000; Kings County, $3,000.

Southern California

Brawley is to stage a poultry show December 20.

Escondido has added 22 lots to its Grape Day Park.

Orange County has 14 local farm bureau organizations.

The planting of grapes in the Imperial Valley will be greater than ever this year.

Imperial Valley has determined to make a planting of 100 acres of rice as a test plot.

State Market Director Harry Maddox is urging cooperative marketing in Imperial Valley.

Oxnard sugar factory has closed with 800,000 sacks of granulated sugar turned out in 983 days.

Citrus growers are continuing the agitation for organization of water transportation company.

At the November 14 meeting of the Elsinore farm center fall and winter gardening was discussed.

Members of the Imperial irrigation district are signing petitions for recall of board of directors.

Yucaipa Valley packing houses have closed on apples, the total crop being estimated at about 1100 cars.

A commercial beekeepers school for Southern California will be held at Exposition Park, Los Angeles, December 5-10.

Entries from San Diego, Riverside and Los Angeles Counties are being made in the big poultry show to be held at Santa Ana, December 13-17.

A poultrymen's banquet was held at Escondido on Wednesday of last week under auspices of the Poultry Producers Association of Southern California.

The San Dimas Lemon Association handled this season 869 cars. This includes the fruit of the Glendora and Covina districts as well as San Dimas.

Riverside County farm bureau has passed a resolution in which it is requested that the department of agriculture make a wider distribution of date offshoots.

A trainload of cattle, 370 head from Winslow, Arizona, was received one day last week in Escondido to be taken to the Laguna Mountain ranch of Joe Crouch.

Fifteen carloads of tomatoes were shipped out of Fullerton last week by the Orange County Produce Growers Association. Growers netted $1.40 per lug in Pool No. 7 last week.

A. I. Rittue of the department of agriculture permanently stationed in Los Angeles to investigate pests affecting sugar beets is urging a campaign on the nematode pest.

The Placentia Orange Growers Association closed its Fullerton house season the first week of the month. 850 carloads were shipped, an increase of 25 per cent over last year's output.

It is unlawful to sell in this state California holly berries taken from public lands or from private lands without written consent of owner. This law was passed by the last legislature.

At the annual meeting of the Escondido Citrus Union, November 11, J. F. Burns was elected president and Ben Schoneman, secretary. The association paid to growers during the year $99,000.

The Coast and General

Some sections of Montana are suffering because of drouth.

There is much interest in apricot growing in the mid-Columbia basin in Oregon.

Yakima Valley hay producers will save $85,000 as a result of freight reduction.

The walnut growing district about Dallas, Oregon, is shipping its biggest walnut crop.

The Washington State Holstein Association holds its annual purebred sale December 9.

Arizona reports Salt River Valley grapefruit as ripening early with unusually fine flavor.

The U. S. Grain Growers, Inc., is conducting a membership campaign in Minnesota and Iowa.

Grays Harbor County in Washington has discontinued the office of horticultural commissioner.

Wyoming's wheat crops are suffering because of warm dry weather which is proving very unfavorable for wheat and rye.

The Pacific Northwest Fruit Exposition held in Seattle, November 21-26, was participated in by Oregon, Washington and Idaho.

The irrigation district of the Okanogan Valley, Washington, is making extension of canals and improvement in delivery system.

Montana has organized a State Council of Agriculture. The council is to be composed of various farm and livestock organizations.

There is a general movement of sheep from the north to the foothills of southern Yavapai and northern Maricopa Counties, Arizona.

Citrus fruit shippers of the West Coast of Florida have chartered a boat to make a two months test of water shipping to northern markets.

Northern Arizona reports abundant rainfall. The season has been favorable for pasture and great numbers of fat sheep are going to market.

In the Yuma Valley of Arizona not more than one-fourth of the cotton has been picked; the crop opened late and pickers have not been numerous.

The Oregon State Horticultural Society meets at Forest Grove, December 1, 2 and 3. An extensive program for vegetable growers is included in the arrangements.

An apple grower of Douglas County, Oregon, says that section never had a finer harvest season. Seventy-five to 80 per cent of the apples were picked with no rain to hinder.

Pres. Gustafson of the U. S. Grain Growers will discuss cooperative grain marketing before the American Farm Bureau Federation now assembled in annual session at Atlanta, Georgia.

Grading and packing of the new crop of prunes is nearly done in packing plants of the Oregon Growers Cooperative Association and the highest expectations for large sized prunes are being surpassed. The crop is very light.

Two or three cars of citrus fruit are being shipped from the Salt River Valley or Arizona per day and already from 50 to 60 cars have gone out. The cool nights have been favorable for ripening and fruit is coloring slowly as is also the case in the Yuma section.

Gold From Thistles

By Lyman E. Stoddard

CALIFORNIA, famous for the unusual and bizarre in plant life, has outdone itself and outburbanked Burbank. They are raising edible thistles in the Golden State and making money at it.

Of course it's not the common, ordinary roadside thistle, but a great, big, beautiful variety known as the artichoke.

Is the artichoke really a thistle? Plant it where conditions are not to its liking and instead of a succulent vegetable you will have a prickly thing, with needle pointed petals containing no nourishment relished by human beings. The artichoke reaches perfection on the Pacific Coast and especially "down the peninsula," at Halfmoon Bay, a few miles south of San Francisco, where in the city's garden patch it reaches perfection. Here, within a 90 minute ride by automobile from the city, in the rich, black loam of San Mateo County, are reared annually 500 carloads of artichokes.

By properly educating this giant thistle the growers have trained it to produce from October to spring, culminating in its greatest production during April. The long, graceful, palm like leaves of the artichoke are cut back to the ground every June so the plant can throw out new shoots. The vegetable is not allowed to mature. Seldom does one see the big, handsome, sweet scented purple blossoms, beloved by bees; while the green buds are still soft and tightly closed they are picked for market.

Artichokes require plenty of water and rich sediment soil, being hearty feeders, besides lots of work on the part of the grower. But, then, it is a paying crop, the net income sometimes reaching $500 an acre. Returns approximated last year $3,000 a car, $1,500,000 for the growers. Most of them are Italian gardeners, paying from $20 to $50 an acre annual rent.

(On the point of the returns we note Mr. Stoddard states that they "approximated last year $3,000 per car, $1,500,000 to the growers." This shows a wonderful increase in returns since 1917, for Wickson's "California Fruits" published that year states: "The buds are packed in standard size apple boxes and are made to lie on their sides in the boxes. Such a box holds about six dozen large buds or about 15 dozen small ones, and about 500 boxes fill a car, for which the growers expect to get about $600. It is fair to expect an increasing demand, because the vegetable is only beginning to be understood and appreciated by Americans. When they learn its delicacy a continuous supply of fresh artichokes from California during the winter season can be profitably sold." Now, the question for the producer is "Will such prices prevail when reconstruction is completed?"—Ed.)

They have an association to look after their interests, but each grower packs and grades his own artichokes.

Young Artichokes Sprouting
Green spearheads tint the ground for miles between the hills overlooking the sea

Of the production of 500 cars, 150 are consumed in the San Francisco district and the rest shipped east. Those marketed locally are shipped in huge lug boxes. Apple boxes are used in eastern shipments. A regular train of motor trucks calls at the artichoke farms and takes each day's harvest over the hills to the railroad at San Mateo.

Matured Artichoke Plants Nearing Harvest Time

Unlike some other producers' organizations, the Halfmoon Bay Artichoke Growers Association does not fix a price for its product. The artichokes are sent to carefully chosen commission houses to be sold on consignment in the open competitive market. Only one commission firm in a town, however, gets artichokes, and the house treats the growers well because the trade is quite profitable and any unfair dealings are apt to result in turning the business to another merchant.

Artichokes sometimes sell for as high as 25 cents each wholesale. But that does not mean that rich folk are the only eaters of this vegetable—or flower. Push cart venders in the poorer neighborhoods of New York find a ready sale for artichokes at a quarter each. They are especially liked by folks who comes from southern Europe, for the artichoke once formed a part of the daily fare in the home land. Wiseacres among the Mediterranean peoples attribute to the artichoke iron for endurance, strength for hard tasks and high nutritive value which makes for longevity.

Doctors say artichokes are good for people who have indigestion brought on by too hasty eating. No one can gulp down an artichoke. It must be eaten leisurely. Picking off the petals of the boiled vegetable one by one, dipping them in mayonnaise dressing, olive oil or drawn butter and then taking a tiny bite from the inner side or end of each is not conducive to bolting one's food.

What is the future of the industry? Secretary J. L. Debenedetti of the growers' association says that expansion is limited. The producing area can be doubled.

MARIOUT MAKES FINE SHOWING

In Merced County this season Mariout barley has outyielded common barley in all tests so far reported. On the Bladt ranch at Newman the yields were Mariout 19, common 14 sacks. On the A. F. Bray ranch at Merced the yields were Mariout 21, common 8. On the Marshall ranch at Gustine, Mariout 6¾, common 5. On the Newman ranch at Le Grand, Mariout 15, common 11. On the Southward ranch at Le Grand, Mariout 16, common 11, and on the J. F. Snyder ranch at Gustine, Mariout 8 and common 4½ sacks per acre.

A record yield for Mariout barley is reported by J. Ahern of Dixon, Solano County. A 38 acre field fallowed for two years yielded 41 sacks per acre of 110 pounds each. Common barley on land fallowed one year yielded 25 sacks per acre, 94 pounds per sack.

Forty-five sacks per acre of Mariout barley was obtained by W. J. Hawkins of Vacaville, Solano County. The barley weighed 115 pounds per sack. Common barley yielded 20 sacks per acre and weighed 111 pounds per sack.

One hundred and sixty acres of Mariout barley produced by Leonard Hess of Tudor, Sutter County, ran from 30 to 50 sacks per acre this season and weighed 110 pounds per sack. Common barley yielded 20 sacks per acre and weighed 90 pounds per sack. A photograph of Hess' Mariout stubble after harvest shows the field to be thickly sprinkled with sacks.

One hundred and thirty-five acres of Mariout barley grown by A. B. Scheel of Richgrove, Tulare County, during the past season turned out 13.4 sacks per acre. Common barley yielded about eight sacks per acre. A field test by Carl Spuhler of Strathmore in 1921 showed Mariout barley to yield 35 sacks per acre as against 15 sacks per acre for common barley. The test was on dry land and Mariout weighed 120 pounds per sack, common barley 105 pounds per sack.

One of the highest yields of Mariout barley for the season is reported by W. D. Chiles of Davis, who obtained 40 sacks per acre from 40 acres. Common barley yielded 30 sacks per acre and spring planting was practiced.

In Natomas district 1,000 Mariout barley outyielded common barley 9½ sacks per acre this season. The grain was grown by F. C. Lane of West Sacramento, who reports Mariout at 29.2 sacks per acre and common barley at 19.7 sacks per acre. Mariout weighed 103 pounds per sack, common barley 101 pounds per sack. Lane estimates that over ten sacks of Mariout per acre was lost through lodging.

One of the largest plantings of Mariout barley this season was that made by J. E. Moran of Stockton which averages 35 sacks per acre over 4,000 acres. Common barley yielded 25 sacks per acre. Moran has already distributed 3,849 sacks among his neighbors for seed. It weighed 120 pounds per sack when recleaned.

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and LIVESTOCK and DAIRY JOURNAL

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If among the more than 40,000 Cultivator's weekly circulation any fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

EDITORIALETTES

California has a record for automobile accidents which is not enviable. The state's good roads, with the prosperity of her citizens, has resulted in a large percentage of automobiles. This, in part, accounts for the unfavorable showing. Besides weather conditions permit of driving every day in the year. But the number of accidents are all too great and perhaps it would be well to consider the staging of accident prevention week or some step which will induce people to drive more carefully. The deaths from motor vehicle accidents in this state during the past year were 21.1 per 100,000 population. In one of California's counties alone the death rate has averaged practically one for every day for a period of over two months. The death rate in this state is more startling when it is considered that the rate the United States over was 10.4 per 100,000 population, which was an increase from 5.8 which it was in 1915. Sometime we'll have fewer grade crossings and other death traps. Meantime let us drive more carefully—much more carefully.

Washington and Oregon have been visited by heavy rains with terrific snowstorms in the mountains. Railways have been using rotary plows but traffic is greatly impeded. All previous snowfall records have been shattered. California has been promised the tail end of the storm and producers would welcome a liberal precipitation from Shasta to Imperial. There has been slight precipitation in the Sacramento Valley but the weather bureau is not yet predicting a state storm.

* * *

Earl Graham has been a persistent winner of the Cultivator monthly prize in the state dairy cow competition. He has built up a great herd of purebreds and grades and every Cultivator winning has been made with grades. But even at that Mr. Graham has proven to his own satisfaction that purebreds pay best and this week he holds a sale and disposes of all the grades and will use the same good judgment and hard work in his increased herd of purebreds.

* * *

Purchasers of turkeys have certainly carried on a campaign of depressing the market for the Thanksgiving trade. Reports such as "Hundreds of tons of Australian turkeys stored since 1920 fill frozen meat rooms" have been published. "Still lower prices will prevail for Christmas trade" seems to be the slogan now that the Thanksgiving season is ended. Mr. Maddox and Mr. Britt of the state market commission are now talking cooperation on the turkey proposition and it is probable that this may aid in securing more just price.

* * *

The celery poisoning scare seems to be over and the department of agriculture has succeeded in getting Japanese gardeners to use greater care in spraying.

* * *

The agricultural club boys are off for the Chicago International. Here's to them if they come back with honors to California.

* * *

Deciduous fruit growers are bearing in mind that the rains are holding off longer than we wish, also that a deciduous tree needs moisture during the fall season if it would plump out and perfect the buds which have formed to give next year's crop.

* * *

Next week we will talk a lot about chickens. The poultry industry of the United States now has a valuation approaching the half billion mark. It is one of our greatest industries. In California it has increased during the last decade as in no other state.

NATIONAL FARM BUREAU

Howard is reelected president. The attendance at Atlanta is big. Membership now reaches a million and a half. Vital questions which affect farmers for coming 12 months discussed. Biggest of all: "Markets and Marketing."

POTATO DAY

The annual fall session of potato growers will be held in the San Fernando Valley Tuesday, November 29, at 10:30 a. m. The Los Angeles County farm bureau says: "This will be the most important meeting of potato growers ever held south of Tehachapi." There will be election of officers, discussion of work for 1922 and a full program of cultural and marketing questions. Lunch will be served 12 to 1:30.

The potato is coming to its own and the coming year will be the greatest yet in California.

SOME BLOC

For once since history began the farmer has the edge on the legislators. This has been true at Washington because of the combination of agricultural organizations with certain representatives and senators. It has been true in California because of a movement initiated in the state fruit growers convention resulting in the appointment of a legislation committee. These efforts have now resulted in such an effective bloc that word is passed that there must be "exposure." A dispatch from Washington dated November 3 and given publicity in many daily papers suggests that "A general exposure of the organized influences which are back of the senate agricultural bloc is likely to be the result of a growing opposition to the group of senators who hold the balance of power and dominate legislation.

"Last summer Congressman McFadden held hearings and showed the activities of this organization which dominated the so-called agricultural bloc. According to the evidence submitted and which has been corroborated by the progress of legislation this move is sponsored and dictated by an organization which is sapping the life of the old farmers' grange movement and has taken over several thousand radicals of the Nonpartisan movement in North Dakota and to a lesser degree in other states."

Too bad about "sapping" the life of the Grange and other organizations. Likewise too bad to be "exposed," but it is barely possible the exposure may result in somebody "ketching it." The exposure calls attention to "high salaried organizers of the movement" also to the fact that "the membership of this movement now aggregates a million and a quarter and this organization is known as the American Farm Bureau Federation." Also, "The dues of the farmers are generally $10 per year, a part of which goes to the maintenance of large headquarters here (in Washington)." "Its president gets $15,000 per year; others receive $12,000, etc." Revelation of such blood curdling secrets should bring quite a thrill to the farmers the country over. Really, it is a dangerous bloc, and more exposure may aid in getting more farmers into line to demand their rights.

NO STRIKE

In our issue of November 5 we said editorially:

"The strike is declared off before it started, which is fortunate for all and especially for those who would have caused the producers of the country untold losses. For once the would-be strikers had absolutely no support from the people. They were so everlastingly wrong in their contention that not a single force outside their own membership—and as it has finally proved only a small portion of that—stood squarely for the great economic loss."

To which a subscriber at Las Vegas, Nevada, replies:

"Being a locomotive engineer and a subscriber and reader of the Cultivator, I take the liberty of enclosing herewith some facts and figures clipped from the B. of L. F. & E. Magazine, and a clipping from the Cultivator of November 5, which I believe (as you say) is so 'everlastingly' unfair and unjust that you either don't know the truth of the situation or are just like most of the daily papers that you give the public one side of the story, especially where labor organizations are concerned.

"In speaking of the great economic loss, I would like to ask who has been responsible for the great loss the farmers and shippers have sustained the past year? Statistics show, and it is a proven fact, that the railroads would have made more money and there would have been practically no unemployment in the country had the 33 1/3 per cent increase in freight rates not been made for the simple reason that the roads would have done at least 50 per cent more business."

The quotations from "Brotherhood of Locomotive Firemen and Enginemen's Magazine" are not given because of lack of space, though they make up a very strong statement for railway employes. The concern of the Cultivator in this matter of transportation is entirely from the standpoint of the producer and with a real desire to be fair to employe and executive in transportation matters and with the consumer in mind.

First, as to the being "everlastingly unfair and unjust." Also as to "you don't know the truth." We must confess we do not know all the truth. There is a great deal of truth in this world and it shall make us free if we will but seek it. The laborer who puts his hand to the throttle and carries us and our product safely to the markets of the world is worthy of our trust and worthy a living wage. Our editorial above quoted in no way denies that. As to "one side of the story only" it is a long, long question and cannot all be discussed from all sides in the limits of this page. But the trainmen of the United States insisted upon wages which meant the ruin of practically every farmer of the land. This in order to secure for one favored class wages which because of the present day purchasing power of the dollar have never before been equaled. They were "everlastingly wrong."

The return for farm products is today lower than it was just preceding the war. The farmer rises long before day and works anywhere from 12 to 16 hours, and for the service of supplying food to railway workers and others he receives a starvation wage. He is told he can receive no more because of the great cost of putting these products into the hands of the consumer, and the entire country is compelled to witness the tragedy of ruined homes which are just as worthy and filled with as patriotic people as the homes of the men who pilot our trains.

Could it be said for a moment that such a condition is "everlastingly" right? All the logic of the most faithful and capable of trainmen cannot make the farmer believe it.

Now as to the other portion of our subscriber's inquiry: "Who has been responsible for the great loss to the farmer?" Here is where we come more nearly to an agreement. The Cultivator has no apology whatever for railway executives who persist in maintaining rates which are ruinous to so many. Those executives are laboring under the age old idea that capital is sacred and must not be impaired. They have stockholders whose interests must be protected. The producing class is forced to take the brunt of the loss in order to save the stockholders and the long salaries of the executives.

The time was when the railway laboring class was forced to take more than their portion, but the wildest imagination is not able to conceive where there has been any injustice in present day compensation.

Here is one point wherein the railway executives are as wrong as we charged the strikers would be, and that is in not passing on to producers and shippers the benefit which is accrued to them because of the July 1 cut in wages. We all recall the promptness with which that 33 1-3 per cent raise in rates was met by the railway management. Has anyone heard of a 33 1-3 per cent or any other percentage of cut which would apply to all products? At the present rate of reduction there are many long years before us before the slight reductions in singled out products will become sufficient to amount to a real reduction in freight rates. Worse, the railway people have endeavored to force the greatest injustice by offering slight reductions conditional on the shippers refraining from use of water transportation. This was in a case where water transportation could be secured at rates which would allow the producer to live.

Altogether the producer is between the devil and the deep blue sea. He may have no information as to which is the deep blue sea and which is the other fellow but he is demanding a nearer approach to justice. He doesn't know how, but in some way he is going to get it.

ARGENTINE ANT IN CITRUS ORCHARDS

The department of agriculture at Washington is just issuing "Control of the Argentine Ant in California Citrus Orchards," written by Prof. R. S. Woglum and A. D. Borden. It is U. S. D. A. Bulletin No. 965. The book gives a bit of the history of the introduction of the Argentine ant into the United States and then discusses the relation of the ant to the citrus industry, characteristics, habits and control. The control is through banding, trapnesting, poison syrups, clean culture. The summary gathers together the lessons of the bulletin as follows:

An investigation of methods for control and eradication of the Argentine ant was started in 1915 and continued until 1920. The methods used included banding of trunks to prevent the access of the ant, trapnesting, repellents, and the use of poisoned syrup.

Of the various substances tried in banding a mixture composed of one part sulphur and six parts commercial sticky tree banding material proved most satisfactory. The careful attention necessary to keep the bands in a freshened condition, their high cost, and the outstanding fact that the ants remained an everlasting menace, however, led to their discontinuance.

Trapnesting proved to be impractical under Southern California conditions because of the light average rainfall and the excessive cost as compared with that of the use of a poisoned syrup.

Repellents in the form of corrosive sublimate bands and powders prepared from pyrethrum and sodium fluorid, were found to have a limited use about residences, apiaries, etc.

The most practical means of control was the complete eradication obtained by the use of an arsenical poisoned syrup. Numerous formulas were prepared and tried in large field experiments. Of these the original Barber formula proved effective but was objectionable because of rapid crystallization. Various modified formulas were used and one finally adopted which contained all the ingredients of the Barber formula, somewhat reapportioned, and, in addition, the preservative benzoate of soda. The modified formula gives a much thinner syrup of great stability, and also considerably cheaper. The arsenical poisoned syrups have been used in various parts of Southern California on almost 3000 acres of citrus with excellent results. Ants have been totally eradicated from many hundreds of acres with one or two applications. It is essential that the syrup be carefully and properly prepared.

Orchard control. In orchard distribution approximately 1½ ounces of syrup is placed in a four-ounce spice tin with a few strands of excelsior, and such a tin is hung on the trunk or a main branch of each infested tree. Spring and autumn are the preferred periods for this work. Monthly inspection should be made and empty and removed containers refilled and replaced. The average cost per tree has been between 4 and 5 cents.

Control about residences. This method has proved equally successful in eradicating the ants about residences. Much care should be given to bait each trail, at intervals of 10 to 15 feet, with either a spice tin or a ground trap.

The eradication of the Argentine ant has resulted in commercial control of mealybugs and the soft brown scale over a large area in the citrus districts of Southern California.

This bulletin may be had by sending 10 cents to Superintendent of Documents, Government Printing Office, Washington, D. C.

SHORT COURSE IN DECIDUOUS FRUITS

The division of pomology of the state university is making every effort to have a large attendance at the two weeks' short course at Davis beginning on November 28. The course is designed to meet the needs of the busy orchardist who can leave his work for only a few days at a time. Only the most essential operations of fruit production will be discussed, although the members of the pomology staff and representatives of several of the leading fruit organizations will be on hand to answer any inquiries relative to production and handling of fruit.

As special features two consecutive days will be devoted to the consideration of fruit drying with special reference to artificial evaporation; three to control measures or diseases and orchard pests with special reference to the best spraying practices. Three standard power sprayer outfits of the latest type will be available for comparison and demonstration purposes. One week will be devoted to pruning. During this time the latest methods in pruning to secure earlier and heavier bearing and for the rejuvenation of old trees will be fully explained and illustrated.

In addition to the work in the station orchards several demonstrations will be held in commercial orchards. Arrangements have been made to spend a day each in the Winters, Vacaville and Sacramento River districts. This will allow ample opportunity to demonstrate the pruning of all of the leading deciduous fruits. In order to take advantage of these trips every one in attendance who can is urged to bring their automobiles.

It is felt that the two weeks' program will be well worth while to the fruit grower who desires to keep in close touch with the advances in horticultural practice. The complete program for the two weeks is as follows:

Monday, November 28—Pruning deciduous fruits.

Tuesday—Pruning young trees up to bearing age.

Wednesday — Principles underlying pruning young trees. Pruning young bearing trees.

Thursday—Demonstration in old orchards near Winters. Pruning old almond, apricot and peach trees. Lecture, Dr. J. C. Whitten.

Friday—Demonstrations in old orchards near Vacaville. Pruning old cherry, plum and other trees.

Saturday—Demonstrations in old and young Sacramento River orchards. Pruning pears.

Monday, December 5—Horticultural literature. Pollination of deciduous fruits. Spraying machinery and equipment.

Tuesday—Spray materials. Preparation of lime-sulphur, sulphur glue and Bordeaux mixture. Discussion and demonstration of poisons, oil sprays and other contact insecticides. Safe and unsafe mixtures of sprays. Spraying in the orchard. Grafting and budding.

Wednesday—Insect control in deciduous orchards. Discussion and demonstration of methods of controlling red spider, codling moth, aphis, peach worm, thrips, borers and scale insects. Disease control in deciduous orchards. Discussion and demonstration of methods of controlling pear blight, peach blight, walnut blight, peach leaf curl shot-hole fungus, apple and pear scab, apple mildew, brown rot, oak fungus, crown gall, heart rot and gummosis of cherry and apricot.

Thursday—Grading and packing fresh fruits. Varieties of deciduous fruits for California. Discussion of various drying, canning and shipping varieties with reference to their soil, climatic and commercial adaptation. Irrigation of deciduous orchards.

Friday—Drying and curing of fruits. Discussion and demonstration of equipment, processing, storage and costs of sun-drying deciduous fruits. How may we best improve the dried fruit products of California?

Saturday (program in charge of Fruit Products Laboratory)—Relation of dehydration and sun-drying to California horticulture. Efficient construction and operation of a dehydrator. Relative merits of sun-dried and dehydrated fruits. Control of dried fruit insects.

SEED MARKETING HINTS FOR THE FARMER

"Seed Marketing Hints for the Farmer" is the title of Farmers' Bulletin 1232. Primarily it has to do with seed corn production. However, seed from the sorghums, clovers and grasses are also touched upon, with methods of growing, thrashing, cleaning, sacking, sampling, testing, tagging, storing and marketing. This bulletin may be secured through the U. S. department of agriculture, Washington, D. C.

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Gals.	Bbls. 42 Gals.	Diameter ft.	Diameter in.	Height ft.	Height in.			Gals.	Bbls. 42 Gals.	Diameter ft.	Diameter in.	Height ft.	Height in.		
500	12	5	5	3	11	440	$ 24.00	10,000	238	13	10½	9	11	4,660	$ 225.00
750	18	5	9	4	11	580	30.75	12,000	285	13	10½	11	11	5,370	258.75
1,000	24	6	6	4	11	655	35.25	15,000	357	15	6	11	11	6,080	303.75
1,500	36	7	1	5	11	830	45.00	20,000	476	17	10	11	11	7,280	352.50
2,000	48	8	1½	5	11	975	52.50	25,000	593	18	4	13	11	8,510	412.50
2,500	60	8	4	6	11	1,145	60.75	30,000	714	20	2½	13	11	9,800	465.00
3,000	71	9	1½	6	11	1,270	69.00	40,000	952	23	0	13	11	11,300	557.25
3,000	71	8	5	7	11	1,290	69.00	50,000	1190	24	0	15	11	13,400	675.00
4,000	95	9	10½	7	11	1,555	87.00	60,000	1428	26	3	15	11	15,100	742.50
4,000	95	9	2½	8	11	1,580	87.00	70,000	1666	28	4	15	11	16,700	843.75
5,000	119	10	11	7	11	1,745	98.25	80,000	1904	30	3	15	11	18,000	922.50
5,000	119	10	3½	8	11	1,790	98.25	90,000	2142	30	2	17	11	19,800	1005.00
6,000	143	11	4	8	11	2,010	111.00	100,000	2380	30	0	19	11	21,100	1102.50
7,000	166	12	1½	8	11	2,160	118.50								
8,000	190	12	3	9	11	2,375	130.50								
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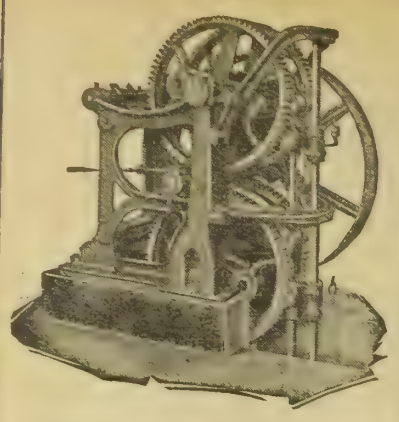

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Questions and Answers

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Asparagus Sprengeri

I have a fern in a box of soil that seems to be mostly roots and bulbs and very little fern. Perhaps a larger box is needed. Should it be transplanted and when? How often and how much should it be watered and fertilized? I enclose piece of fern and would like to know the name.—Old Subscriber, Hemet.

The plant is not a fern. Its proper name is Asparagus Sprengeri. It belongs to the lily family and therefore soil is full of bulbs. It should have a larger box, pot or tub and may be transplanted at any time. It is a gross feeder and needs much food and drink at all times, but is a very hardy plant and no amount of harsh treatment or neglect will kill it. When well cared for it is a beautiful plant of luxuriant growth.

Transplanting Lemon

I wish to know what is the best season and method of transplanting a lemon tree. It is five years old and now full of fruit.—Subscriber, Turlock.

This tree may probably be transplanted safely after danger of spring frosts has passed, say during later March or earlier April. Remove the crop and cut back top severely. Some even go so far as to almost defoliate. If possible take up a large portion of the root system and if soil is of a nature to cling in a ball around taproot it adds to the probability of safe removal. When dirt is taken away from roots and taproot is cut a two by four scantling, say 12 or 14 feet long, or other strong timber may be lashed to the trunk at the surface of the ground and a couple of good men at either end of the scantling may lift the tree to its new location which has been prepared. Sift in rich soil about roots and turn on the hose immediately. Another good wetting may be given in two weeks and still others at frequent intervals for the first few months.

Washing Sheep Skin

What is the best method of washing sheep skin in order to get the wool clean and white?—Subscriber, Merced.

We will pass this question on to our sheep owner subscribers. Ordinarily cleansing of wool may be fairly satisfactorily done with pure soft water. The "yolk" naturally in the wool is usually sufficient to make washing with the pure water very effective in cleaning and even whitening the wool. If this is not sufficient a good grade of white soap will aid in the process. However, will our subscribers send us hints?

Dairy Tenant

I have a dairy proposition offered to me on a share basis, 50-50, and I would like to know how an agreement of that kind is drawn, that is, who is supposed to supply the feed, water for irrigation (pumped), repairs to machinery, etc. I am placing 30 head of my own cows with those of the owner. The cost of water, including labor, will amount to about $1600 per year. At the present time place is badly run down. Any information you can give me will be greatly appreciated.—Subscriber, Madera.

This matter of tenancy and the division of costs and of return from the products is a perplexing one and one which can not possibly be treated from a general standpoint with any degree of justice. Every proposition has to stand on its own merits. From the statement given by the inquirer it appeals to us that on a 50-50 basis with the place badly run down and with the tenant furnishing a large number of the dairy animals the water should be furnished by the land owner. The usual custom is for the owner to furnish all equipment and the tenant all labor. This would call for the distribution of irrigation water by the tenant. But, as noted, such conditions as distance to market, condition of the highways and numberless other things must be considered.

Substitute for Manure

I have no stable manure for my vegetable garden and can get none. What commercial fertilizer shall I use, and how much of it to the 500 square feet? The soil is gravelly sand.—Subscriber, Ontario.

There is no satisfactory substitute for good rich stable manure and for small garden we would endeavor to secure goat manure, poultry manure, or some organic fertilizer and supplement it by the use of a complete commercial fertilizer. If the manure can not be secured we would prefer a commercial fertilizer which secures most of its elements from organic sources. Meantime we would suggest to our gardener inquirer that he rake up leaves, weeds and also take the garbage from the table and gather up straw or any similar vegetable material, compost with a small quantity of dirt and lime, keep it wet, shovel over occasionally, and in this way manufacture on the place a surface dressing which will prove valuable. However, this takes time. A high grade complete commercial fertilizer may be applied at the rate of say 500 to 1000 pounds to the acre or say 25 to 50 pounds on the 500 square feet.

Strawberry Tree

Some time ago I wrote asking about a strawberry tree or tree strawberry about which you printed an article some time last spring. The party you referred my letter to did not reply. Can you inform me where I can obtain a tree?—Subscriber, Coachella.

The strawberry tree, Arbutus unedo, does not bear an edible or usable fruit, though what little flesh covers the seeds is very tasty. The tree is generally for sale by all nurserymen dealing in ornamentals. However, we mail you address of a firm which handles this plant.

Wild Oats

From what locality did we get wild oats? Please give a short history.—Subscriber, Stevenson.

The history will indeed be short. The seeds of this plant, Avena fatua, came to us in grain seeds from its native home in South Europe and is now common throughout California.

Peanuts

When should peanuts be dug or pulled? Some of the vines are wilting and others are still green. Does it make any difference if the frost hits them? Do they have to be dried before they are roasted?—Subscriber, Escalon.

Usually frosts catch the vines while still green and the crop should then be dug at once. They are usually dug by a machine but may be dug by hand. Unless soil is very sandy you will lose some pods by pulling. When vines commence to wilt, as yours have done, it is time to harvest. The vines are stacked and dried before threshing but no drying is practiced before roasting.

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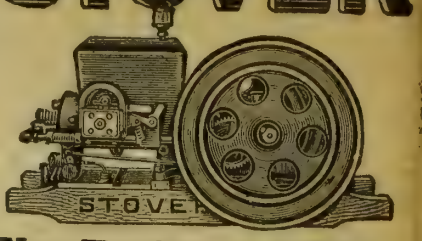

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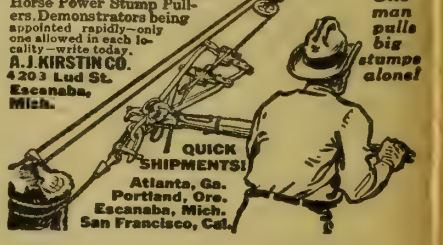

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Best Berry Plants

Which is best strawberry for light soil in this section? Does Cory Thornless blackberry give as good returns as the Mammoth?—Subscriber, Santa Paula.

For the past two or three years no strawberry has given such good results in the south end of the state as the Carolina. There are several other good varieties, but this seems to lead at present. One grower says Gibson is second best; another says Banner, while one grower has only Klondike and Brandywine, all on light soil, though neither very sandy or gravelly. Growers who handle both blackberries you mention claim the Cory is a little superior to the Mammoth, but the latter is, nevertheless, a good berry.

Asparagus

How should ground be prepared for planting asparagus roots which are two years old? Also, when should they be planted? How soon will they bear?—Subscriber, St. Helena.

Soil for asparagus needs no special treatment beyond deep plowing and pulverizing. If it needs too much of the latter it is not good asparagus soil, for a sandy soil is best. Two year old roots are best. The possible planting season is quite long, but January is a good time, or early in February. You will get quite a crop of tips later in the spring but much heavier a year later.

Hedges and Rhubarb

I want to plant a hedge around my yard, as I like the privacy of the old fashioned garden, but as our place is very small (just a town lot), would like something we could use as well, so wondered if hazel nuts would form a hedge if kept pruned properly, or can you suggest any other fruit or nut that you think would serve that purpose? If hazel nuts would do would be very glad to know if there is a special variety to ask for or just the common nut one buys in the grocery store. I am very anxious to raise rhubarb, but in this place I hear on all sides that it is impossible, as the ants eat it up. I think I remember reading in the Cultivator something about that some time ago, so if you will kindly tell me what to do I will be glad.—Subscriber, Madera.

Hazel nuts are not worth planting in your section of California. Why not use berry bushes of some kind? Grapes will also qualify as well as hazel bushes, for both are deciduous. In evergreens a new raspberry will give you a green hedge at all times as well as a good home fruit crop. Strawberry quavas will also make a good one. The climate of Madera County will hardly allow a large hedge of limes, which are even more tender than oranges and lemons. As for rhubarb and the ants, we would get rid of the ants by using the government poison formula printed in the September 24 pest number of the Cultivator. This is not difficult or costly. Then, if your soil is not very heavy and you enrich it, you may grow good rhubarb.

Veterans Loan

Many inquiries are coming to the Cultivator as to how a veteran of the world war or the Spanish-American war should proceed in order to secure loan. The first step to take is to write the Veterans Welfare Commission, Sacramento, and ask for application blanks and full information. We may say, however, that the blanks are not yet ready but the applications may be filed and will secure attention as soon as possible. The funds available under the enactment of the recent legislature are only $3,000,000. The same act, however, called for an election in November, 1922, at which the voters of California will be asked to decide as to the issuance of an additional $7,000,000. Until that action is taken by the voters the amount which may be advanced by the commission is limited.

Pickling Ripe Olives

We have an olive tree in the yard which, though a young tree, has several pounds of fruit on it. The olives are a dark purple and the inside of the fruit is also of a purplish cast. Are these an edible variety, and if so, how are they prepared for use?—Subscriber, Ripon.

These are no doubt excellent olives and ready for pickling.

Mrs. Sherman of Fresno gave to the Cultivator years ago directions for pickling olives that can hardly be bettered. This is for pickling a quantity for home use, and it is suggested that thoroughly cleansed oaken barrels may be used. Mrs. Sherman recommended that barrels be cut in half, filled with lime and water until needed. Then into 12½ gallons of water put 1½ pounds of lye and 2 pounds salt, filling barrels three-fourths full. Put freshly pickled ripe and sound olives into this solution. After 12 hours test olives by cutting through. If yellow stain from lye reaches almost to pit, run off lye and put on fresh water, adding 1½ pounds salt. The water should cover the olives three or four inches. Stir with wooden stick every two or three hours. Change brine every other day. After two days taste, and if bitterness is all out, repeat lye. The use of the salt keeps the olives from getting soft and in a measure sets the color. Let light into the olives when in the brine, but avoid direct sun rays. This also helps to blacken the olives. If olives pucker in the brine, simply run off brine and cover with fresh water for a couple of hours until plumped out again, then put on weaker brine. The olives will keep a reasonable length of time in open vessels if brine is watched and boiled often enough to keep down bacteria. It is better to can them in glass or tin while perfect. The state board of health now requires that all olives offered for sale must be processed for 40 minutes at 240 degrees Fahrenheit to assure no possible growth of botulinus germs. This necessitates use of pressure cooker. Boiling in cans for one hour has been the custom for home use.

"Sweetening" Olives

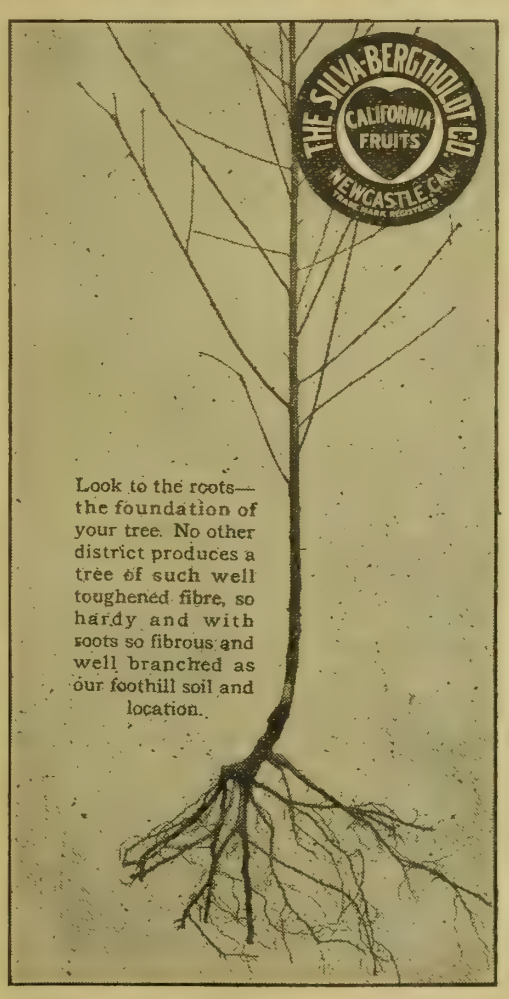
I would very much appreciate if you would send me a recipe for sweetning green and ripe olives, and how to season them.—Inquirer, Mountain View.

Does our inquirer mean the ordinary curing or pickling of green and ripe olives? If so, we call her attention to directions elsewhere in this department for curing ripe olives and give here method of pickling green olives. If this is not what is desired, let us know and we will try again.

Pickling Green Olives.—Pick olives when full size but hard green. Prepare lye of 30 ounces soda lye per gallon of water, 1 pound per 5 gallons. Place green olives in this and leave until the lye reaches pits, as indicated by cutting sample olive to pit. This will take about 24 hours. Pour off and discard lye. Cover olives with water. Change twice daily until lye is all removed; about one week. Prepare brine in 9 ounces salt per gallon water (a little more than ½ pound per gallon. Fill completely with brine and drive bung into keg or barrel and seal the jar. Leave in quiet place till flavor develops. This will be in about two months.

Sixteen carloads of feeder cattle came last Saturday from Holbrook, Arizona, to Blythe stockmen.

Plant an Orchard



Look to the roots—the foundation of your tree. No other district produces a tree of such well toughened fibre, so hardy and with roots so fibrous and well branched as our foothill soil and location.

Write us for complete copies of the announcements of the "Bergtholdt Plan." This plan is a vital issue to every fruit grower—to all California. It means your success and ours in fruit growing. The responsibility for this plan is upon every individual fruit grower — boost for it.

Growing fruit is the best paying business in California.

The acid test of any business is not what it will do under favorable conditions, but what it will do under adverse conditions.

Even under this year's depreciated values, the orchardist with a block of **Prunes, Bartlett Pears, Apricots, Cherries, Raisins, Shipping Grapes, Clingstone Peaches, Drying Peaches, Fall Pears, Almonds, Shipping Peaches, Shipping Plums, Canning Plums,** and **Figs** will make more money than the grower of grain, hay, alfalfa, beans, rice or the dairyman.

Every acre of land adapted to fruit growing that you now employ in growing grain, hay and other crops, is too valuable for fruit to be employed as you are now doing.

Every year that you grow these other crops instead of planting your acreage to orchard, represents not only a dead loss in money, but more than that, one year's loss of life's opportunities.

The trees you plant now will, five or six years hence, assure your share in the profits inherent to the California fruit grower.

We offer for your planting the most complete assortment of commercial fruit varieties.

Our trees are the best that care in propagation and efficient workmanship can produce.

Our catalogue, full of accurate practical horticultural information and suggestions, and our thirty years' experience in fruit growing, and fruit marketing, are at your service for the asking.

Submit us a list of your tree wants for quotation while the varieties you desire are still available in our foothill grown stock.

Write me today.

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Sec. and Mgr.

Member of the Bud Selection Association of California

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WHY TRADE IS SLOW

Unprejudiced observers declare that retail merchants have been slow to take their losses in the financial depression and slow trade has resulted. Farmers were hit hard but kept their courage. They have been compelled to buy carefully, but are good judges of value and as soon as general commodity prices reach a level that compares favorably with the prices of farm products they will buy with their usual liberality.

The recent cuts in prices made by implement manufacturers as soon as replacement costs could be estimated are excellent business stimulants the effects of which will reach far beyond the merchant. They will affect the manufacturer and all his helpers as well as the material men from whom he gets his supplies. Activity in one line always extends its good influence to other lines and so everybody will be in step and general business prosperity will prevail. As the Ohio Farmer says, prosperity is almost altogether a matter of everybody agreeing to go ahead with business.

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Vegetables Should Be Washed

CURRENT press reports reviewing convictions of Japanese vegetable growers supported by a few isolated and very infrequent cases of human poisoning through the use of arsenicals applied to celery, lettuce and cabbage, have now reached a point where the California department of agriculture deems it timely and expedient to advise the California housewife as to the exact conditions upon which such news has gained headway.

For many years it has been the custom of growers of cabbage, celery and lettuce to spray the growing crop at stated intervals to prevent widespread damage by insects and worms that would, if unmolested, render the produce unfit for human consumption and perhaps a total loss to the grower.

Due to its ready availability, cheapness and quick action on insect life certain forms of arsenic applied in solution as a spray have been used with good results. Unfortunately the untutored Oriental in some cases appears to have been working on the theory that by increasing the dosage of arsenic he would correspondingly increase the benefits in cases of gross infestation or else through sheer ignorance or indifference has been applying excessive quantities of spray material.

Through such procedure celery, lettuce or cabbage might be offered for sale with discernible quantities of arsenic or lime appearing as a dry residue on the leafage and stalks of the produce and in no case should such produce be utilized as human food until carefully cleansed to free it from all traces not only of any spray material, but also trash, grit, sand, dirt, worms or bugs.

Several years ago in the East a dealer was hailed into court for selling filthy bacon. He contended that the dirt was superficial and could be eliminated by washing the meat before cooking. However, the court ruled adversely, taking the stand that no one washed bacon!

In the case of vegetables and salads such as celery, cabbage, lettuce and others, subject to contamination from many sources, cleanliness should for many reasons be the first thought. Through careful washing and rinsing in water nearly all dirt and objectionable matter can be eliminated. In the case of celery, the stalks of which grow with deep corrugations that might offer access to spray material and from their nature resist the cleansing action of superficial washing, one might adopt the expedient of "skinning" the outside as an added precaution.

In any event take the precaution carefully to wash all vegetables prepared for the table, especially those like celery and lettuce that are not ordinarily cooked before serving.

Federal Farm Loan

THE federal farm loan system has been somewhat under fire although the most serious accusation has been that it is altogether too slow. Congress has taken cognizance of the criticism and has made appeal to the loan board for swifter action. This has called out a letter from Farm Loan Commissioner Lobdell. At least Commissioner Lobdell has written to Senator Kenyon an explanation of the work and the workings of the farm loan bank. From Mr. Lobdell's letter we make extracts:

"If we interpreted correctly the purpose of your visit, it was to suggest to us the possibility of placing a greater volume of loans through the farm loan system and to inquire if such a result were not possible.

"Allow us first to briefly summarize what the system is doing:

"As you are aware, loaning activities were entirely suspended for more than a year, because of litigation which cast a cloud upon the validity of farm loan bonds, and rendered their marketing impossible.

"Following the favorable decision on February 28 of the present year, it was necessary to have new bonds engraved at the bureau of printing and engraving, submitted to the several land banks, and returned to this office before sales could be made. Owing to necessary change in the engraved plates, there was unusual delay in the bureau, and it was May 1 before any of the bonds could be delivered. Within six months from that date we shall have sold and delivered to the public practically $100,000,000 of farm loan bonds. This is the accomplishment of the system on the side of procuring loanable funds.

"On the other side, that is the making of loans. The federal land banks, as soon as the successful result of the spring offering was apparent, renewed the taking of applications, beginning the 1st of July the active closing of loans. In July there were closed a total of $9,204,900, in August $12,506,000, and in September $12,407,400. It will therefore be seen that the system is functioning steadily and distributing directly to the farmers, at the lowest prevailing rate, funds at the rate of $150,000,000 per year, and that it is fortified by the sale of bonds, so that such production can safely be undertaken for the next several months without additional sales.

"The question then arises: Is this a reasonable accomplishment, and is it reasonably possible to proceed more rapidly to meet the widespread and insistent demand?

"In reply, our candid judgment is that the present rate of progress, if steadily maintained, approaches the maximum that can be accomplished without the sacrifice of safety for haste and of continued and permanent upbuilding to immediate expediency. Neither of these sacrifices can of course be for a moment contemplated.

"Two general factors enter into the reasons for this conclusion. The first is physical capacity. The largest continuous 12 months' transactions by the federal land banks were $146,110,000. At that time funds were available, applications were in hand, and the banks had been organized nearly three years, and seemed to be working at nearly full capacity, but close observation of their activities at the time convinced the board that they could safely increase their capacity to $150,000,000 a year, and that by some readjustment of the system it mignt be possible to reach an aggregate of $200,000,000 a year with safety.

"While it is possible that a given bank may in a single month close $2,000,000 or even $3,000,000 of loans, where the applications have been long accumulated, appraisals made, and titles examined in advance, but we believe the experience of all mortgage concerns will bear out the statement that a single organization which month in and month out throughout the year closes loans of the average size of $3000 to the extent of $1,000,000 to $1,200,000 a month, at the same time making its collections, looking after taxes, insurance, and all the business incidental to its organization, is doing about as much as such an organization could safely undertake.

"The other question entering in is the supply of funds. From time to time the suggestion has been made, in various forms, of government assistance.

"Any governmental assistance, beyond that now possible under the Curtis-Nelson bill, which contemplated the temporary purchase by the government of farm loan bonds, would merely place the system under obligations which would in the near future entirely stop its general operations. Already the federal government holds $183,035,000 of farm loan bonds, which were purchased as a temporary expedient, with the provision that they should be taken up within one year after the ending of the war, upon 30 days' notice from the secretary of the treasury.

"This means that after March of next year the secretary of the treasury may at any time call for the redemption of these bonds.

"Farm loan bonds must not, if the system is to continue, be placed upon the market in such volume as to clog the market and depress the price, for on its narrow margin of operation the federal farm loan system can not function unless it can sell its bonds at par.

"The bonds are offered by public announcement of the secretary of the treasury, are for sale by the federal land banks, and the 4,000-odd farm loan associations, in addition to which they are offered by a country-wide group of more than 400 bond distributing houses under the management of six of the best established and most reputable bond houses in the country. We feel that we have behind them a selling organization which in its potentialities has never been excelled. Nearly two months were necessary to dispose of the $40,000,000 offering made May 1. The sale of the present offering of $60,000,000 is progressing very satisfactorily.

"The federal farm loan act, passed in 1916, outlined the general plan, in many respects rather vaguely, leaving much to the discretion of the farm loan board. It did not, contrary to a very general error of belief, put the government into the farm loan business, and provide a fountain from which there should come a continuous and unlimited flow of 'government money' for 'government loans' to farmers.

"Instead it provided for a new system (new to this country) of making farm loans and laid upon the farm loan board the mandate to create the organization and introduce to the American farmer the plan of borrowing, and to the American investor a security with which he was wholly unfamiliar. That this task has, in a little over three years of loaning activity, been so well accomplished that farm borrowers in every section of the country are anxious to avail themselves of the service, and that the investing public is a willing and apparently steady investor in the bonds at a rate exceeding $150,000,000 a year, should certainly be gratifying to the founders of the system.

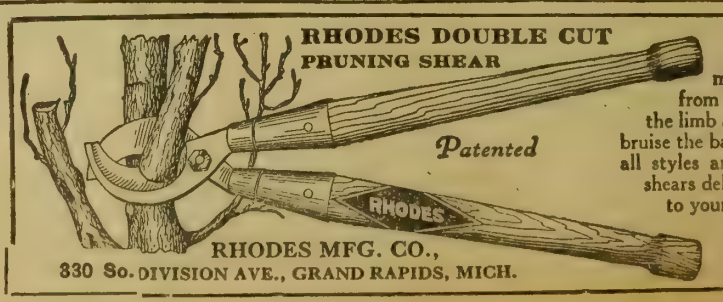
"The federal farm loan system having no source of loanable funds, except as they come from the investing public, must necessarily be affected in its operation by these conditions."

WALNUT HUSK MAGGOT

Experiments in the control of the walnut husk maggot, a serious enemy of the black walnut, have been conducted with success by the bureau of entomology, United States department of agriculture. This may not be of particular interest to California walnut growers but there is a possibility that it may sometime concern us.

The results of the work accomplished as far as it has gone are now published by the department in Bulletin 992, The Walnut Husk Maggot, by Fred E. Brooks. The habits and life history of the insect have been determined sufficiently to allow the study of control measures which have been conducted successfully in two important black walnut groves.

A lead arsenate spray was used in both instances with the result that in one grove a count of the nuts showed that four per cent had been attacked by the maggots, compared with 60 per cent destruction the year before. In the other the condition was estimated as 75 per cent better than during the previous season. Flies confined in roomy wire screen cages were observed to feed freely on sweetened water to which sufficient lead arsenate



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had been added to give the liquid a milky color. They, however, succumbed slowly to the poison, and further tests are thought advisable before this treatment can be fully recommended.

LETTUCE LATEST CROP TO BE STANDARDIZED

Practically all of the fruit grown in California is now packed and shipped under standardized rules, and the results have been to greatly improve the industry and increase the prosperity of the growers. The truck crop growers have been quick to see the advantage of standardization and have been applying to the state department of agriculture for inspection service.

In the past six years the production of lettuce in California has grown from practically nothing to an industry of enormous size. In 1916 there were 27 cars shipped out of Imperial Valley. In 1922 the estimated shipments will be 3,500 cars, and the Imperial Valley is only one of the sections of the state now growing this valuable truck crop.

U. S. GRADES ON POTATOES

More and more interest is being manifested in the grading of potatoes according to U. S. standards. On Tuesday, November 8, L. J. Weishaar and S. S. Rogers accompanied representatives of one of the large potato shipping companies on a survey of fields in the vicinity of Sacramento. A grading demonstration was given in several fields by Mr. Weishaar and the practical application of the U. S. grades demonstrated.

It is very probable that in some sections of California financial institutions and large shipping corporations will make advances on potatoes meeting the U. S. grades and intended for storage. The practice of making advances on stock graded in this manner obtains in many states and materially facilitates the handling and movement of the crop for both growers and shippers.

It is encouraging to the standardization bureau to note that applications for grading demonstrations and explanations of the U. S. grades are becoming more numerous.

BULLETIN ON DEHYDRATION

This is the season of the year when dehydration or preparation for handling another year's crop of perishable fruits is of peculiar interest. Dried fruits of California amounting in 1919 to about 185,000 tons, increased to 360,000 tons in 1920. The increase in acreage has been even greater so that in another three years our problem of fruit curing will be even greater.

Present day fresh fruit markets and canneries will probably not be able to absorb this increase. The whole question of providing the means of handling it is discussed in Bulletin 330 of the agricultural experiment station of the University of California. The bulletin is entitled "Dehydration of Fruit, a Progress Report." It is written by W. V. Cruess and A. W. Christie. Every fruit grower will find it of vital importance. Regarding advantages of dehydration the bulletin concludes:

Dehydrated fruits when cooked more nearly resemble fresh fruit in color and flavor; they are produced under more sanitary conditions that permit more exact control of quality and yield; less land and fewer trays are required to dehydrate a given quantity of fruit; and finally, dehydration makes it possible to combine all the steps of drying and packing in one building.

CONCRETE SEPTIC TANKS

(Continued from Page 551.)

the pipes are all unobstructed and not even partially clogged with dirt or lumber. The inlet pipe is then connected to the pipe from the house and the outlet pipe joined to three lines of three inch concrete drain tile. The drain tile will be laid about twelve inches below the surface of the ground and joints left open, that is to say, no mortar must be used in the joints. This permits the discharged fluids to be absorbed by the surrounding soil. The drain tile lines should be laid in the form of the letter "Y" and sufficiently extended to cover a large area of ground. Average conditions require that each arm be about 100 feet long. After this is done, cover the tank with earth to the level of the manhole covers. It is now ready for use.

It is sometimes the custom to plant a few shrubs around the manhole openings, thus effectually hiding all evidence of the tank.

IRRIGATION EQUIPMENT ASSOCIATION

Within the past few days there has been organized in San Francisco an association of dealers in irrigation equipment. The name of the new association is the Western Irrigation Equipment Association. Its officers are: President, Jas. A. Woods, Sacramento; secretary, C. A. Utley, San Francisco; treasurer, C. F. Zimansky, San Francisco; vice president, David J. Conant, San Jose. Executive committee—J. J. Merritt, Sacramento; P. H. Marlette, Los Angeles; W. F. Sanders, Visalia; Jos. L. Lawrence, San Francisco; W. F. Blackburn, Delano; F. E. Nittinger, San Francisco.

While only one of the directors is from Southern California, it is anticipated that the membership will increase and that ultimately the interest in the southern end of the state will demand the organization of an affiliating association.

The objects for which this association is formed are:

To promote the welfare of its members.

To distribute among them the fullest information obtainable in regard to all matters affecting the merchandising, installation and servicing of pumping machinery and connected equipment; to issue engineering and data sheets required in the business of selling, installing and servicing of irrigation equipment, and to collect data and information relating to the business.

To aid in bringing about more friendly relations between members and prospective members of this organization and with others with whom they may come in business contact.

To conduct a campaign of education that the buying public may be made fully aware of the possibilities of our great state under intelligent and thorough irrigation; of the superiority of artificial irrigation to uncertain rainfall and climatic conditions; and of the large returns that proper irrigation equipment may be made to yield.

To assist in marketing high grade irrigation equipment of American manufacture.

To elevate the standard of installation and housing of irrigation.

To exercise a corrective influence in the use of proper selling methods, eliminating the overrating and misrepresentation of irrigation equipment as marketed by members of this association.

To encourage the golden rule practice among members of this association.

POISON FOR BIRDS

Most of our birds need, and are fully worthy of, fullest protection, but there are occasions when English sparrows, linnets, buzzards, crows, wild geese and ducks may become not only a nuisance but a menace to health or at least to property. So to secure the latest information as to their control when they do become pests, we wrote to W. C. Jacobsen, superintendent of rodent control of the state department of agriculture. Mr. Jacobsen answers:

"It is a violation of the fish and game laws of the state to promiscuously spread poison for birds, as there is danger of killing valuable songbirds and also game birds. However, if the infestation is chiefly sparrows the poisoned cracked wheat has proved very satisfactory. The formula for this is: Mix thoroughly one-eighth ounce powdered alkaloidal strychnine with the same quantity of sugar and baking soda dry, and stir these into two tablespoons heavy corn syrup. Dissolve tablespoon laundry starch in cold water and add to a quarter pint of hot water enough to bring it to fairly thick consistency. Add to this starch paste the syrup containing the strychnine, soda and sugar, and pour over two quarts of cracked wheat or chick feed. This can be placed where sparrows are in the habit of feeding or places where sparrows are roosting. It should be placed off the ground as there is danger of poultry or domestic animals taking it. It also should be kept out of the reach of children and irresponsible persons."

Roeding's True Trees

When anyone is looking for a ranch home almost the first question that arises is the nature of the improvements. A place with a good ORCHARD INCOME is certain to sell first.

IMPROVE your vacant land by planting ROEDING'S TRUE TREES. Remember that the cost of a tree is not the only cost,—a good tree, like any other good article, is the cheapest in the long run.

We have a magnificent stock of properly grown, vigorous, well rooted Deciduous and Citrus Fruit Bearing Trees, Ornamentals, Vines and Roses.

Let us have your name and address and we will mail you new price list when printed.

Fancher Creek Nurseries

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ESTABLISHED 1896 REX KING OF SPRAY MATERIALS

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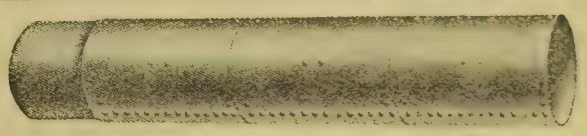

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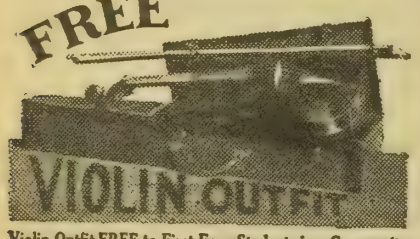

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Household Department

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Ne'er from my path I swerve
Rattling around a curve
Not vainly trusting to my trusty bars;
On through the hollow night,
While, or to left or right,
A city glistens like a clump of stars.

On through the night I steer;
Never a sound I hear
Save the strong beating of my steady stroke—
Save when the circling owl
Hoots, or the screaming fowl
Rise from the marshes like a sudden smoke.

Now o'er a gulf I go:
Dark in the depth below
Smites the slant beam the shoulder of the height—
Now through a lane of trees—
Past sleeping villages.
Their white walls whiter in the silver light.

—Cosmo Monkhouse.

SAFETY FIRST

By Ethel Field Foster

"HI'LO, Mister Billy!"

Bobbie came dancing into the room where Mr. William Alexander Prescott sat twirling his thumbs and eyeing the shiny tips of his patent leather oxfords while he waited for Miss Betty Morris to finish dabbing pink powder on the tip of her saucy nose, which her delightful little nephew had, on a previous occasion, confided to him was her final operation preliminary to descending upon him in all the splendor of her dazzling loveliness.

"Why, hello, Bobbie!" Billie Prescott replied cordially, lifting the youngster to his knee.

He was very fond of Bobbie. Indeed he had come to look forward to his twice weekly chats with Bobbie with almost as much eagerness as he anticipated his evenings with Betty, and that was saying a good deal; for Betty Morris was the idol of his heart, his dream of happiness, past, present and future. Prescott welcomed his small friend's affectionate confidences and advice. Often a word from Bobbie had changed his whole plan of procedure, usually with very advantageous results.

"Well, how are you tonight, Son?" he asked, cheerfully.

"L'right."

Bobbie snuggled down against his rough coat and wriggled himself into a comfortable position.

"That's good! And how's the puppie?"

Bobbie sat up with a jerk, his silky, dark, bobbed hair tossing, his big brown eyes shining. His round face was rosy with excitement and the words tumbled over each other in his eagerness to get them out of his small mouth.

"Say, he's the cutest puppie! Daddy says he's clever 'nough for the Norphum, but Muvver—she don't like um. She says he aren't broke an' she won't let me have um in the house, not ever! So I have to keep um in the g'rage. But Aunt Betty—she helped me make um a bed of—of—selsor—so's it aren't so bad. Don't you want to come out an' see um, Mr. Billy?"

Bobbie was already as far as the hall.

"C'm on, Mr. Billy!" he urged, impatiently.

But William Prescott shook his head regretfully.

"Not tonight, Bobbie; he's probably asleep, and it would be too bad, you know, to waken him. Some other time."

Bobbie's face fell, but he came back slowly to his perch.

"Oh, l'right," he said, resignedly.

He snuggled back in the curve of Prescott's arm and leaned his head against his shoulder. The next moment he was sniffing, speculatively.

"Got any Spearmint gum, Mr. Billy?"

"Surest thing you know! I brought you a whole package."

When Bobbie had succeeded in tearing off the paper and had crammed his mouth as full as he could chew Billy asked in quite a casual, though a very low tone.

"Say, old sport, I wonder if you happen to know how your Aunt Betty is going to dress for the masked ball tomorrow night?"

Bobbie suspended operations, with his wad stuck against the inner lining of his fat cheek. He mused thoughtfully. Yes, he knew all right.

"But I promised Aunt Betty I wouldn't tell!"

"But couldn't you tell—just me?"

Bobbie considered.

"I'll give you a box of chocolates if you will, Son."

The boy's eyes lit up with interest.

"Chocluts, Mister Billy? How many?" he asked eagerly.

"Um-m—tell you what, I'll give you a two-pound box of Chocolate Shop creams, kiddo, if you'll tell me."

Bobbie's eyes grew bigger.

"Two—pounds—of—Choclut Shop creams!" he gasped.

In all his five years Bobbie had never yet had all the chocolates that he could eat, and he knew that two pounds meant a lot—oh, ever so many more than he had ever had at one time before. And Chocolate Shop creams! Oh, magic word! His mouth watered and his eyes sparkled greedily. Still, Bobbie had a sense of honor, and he had given his word. It had been stupid of him to promise, but he had, so he hesitated.

Observing the hesitation, Prescott stifled his conscience with the reflection that "all's fair in love and war." Aloud, he said, coaxingly:

"Say, Bobbie, I'll do even more than that. I'll give you a watch—a regular man's watch."

Bobbie was so surprised he nearly fell off of Prescott's knee.

"A watch, Mr. Billy? Not a really, truly watch that goes?"

"Yes, a real one that goes."

"With wheels an' things, like yours an' Daddy's?"

"Yes, Son, just like that, and with a shiny nickel case."

Bobbie sighed ecstatically. To have a watch, all his very own! A watch with wheels that went 'round—a watch that would tick, tick, tick in his pocket and under his pillow at night! He might have withstood the chocolates, but the watch was too much for Bobbie. His sense of honor dwindled away. It was silly, anyway, to make such a secret of just a dress; everybody'd know tomorrow night, anyway, and what difference did one day make? Bobbie leaned confidentially closer and Prescott bent his ear to listen.

"She's—she's goin' to dress like a—a maid!" he burst out in a stage whisper.

"A maid? Oh, is she? Well, thanks, old fellow, that helps a lot."

Mr. Billy looked satisfied and pleased. Nevertheless, Bobbie considered within his small person that his item of news was hardly sufficient recompense for two whole pounds of chocolates and a watch that told time. He searched through his storehouse of memory for something to add to his offering. Oh, yes! He looked up eagerly into the man's face.

"Say, Mister Billy, I'll tell you something. Aunt Betty—I think she likes you, but she doesn't like the way you drive."

"What?" Prescott was surprised. "Doesn't like the way I drive? Why?"

"Well, she said—I heard her say it to Muvver—that you were the slowest man—she'd just like to see you go on high once!"

William Alexander was puzzled. He was usually considered a reckless driver, but Betty had had plenty of opportunities to judge for herself.

"Yes?" he prompted.

"That's all 'cept she said you'd been goin' on low for six months an' if you didn't speed up pretty soon she'd take Sam Carson—she sure would!"

Bobbie settled back with a comfortable sense of a debt cancelled. William Alexander Prescott emitted a low and subdued whistle, while a look of enlightenment spread over his countenance. He looked down thoughtfully at the small boy curled up on his knee.

"Um—I suppose, Bobbie, that Sam Carson gives you candy, too?"

Bobbie glanced up with no great display of interest.

"Oh—sometimes."

"Do you—I say, you know—do you like him as well as you do me?"

Bobbie sat up indignantly.

"Why, course not, Mister Billy; you

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ferget wese chums!"

"To be sure, son!" Prescott gave the youngster a vigorous hug. "I knew you were a true pal, but I just wanted to test you. And I'll tell the world, Bobbie, you're a good kid and a grand old sport, and I'm awfully much obliged for your tip—I won't forget it."

He extended his hand as man to man and Bobbie shook it solemnly. His chest swelled with pride and when, a moment later, his mother called to him from upper regions, he said good night with grave dignity and mounted the stairs without a protest, as of course any gentleman should.

The following evening at a quarter past eight o'clock, William Alexander Prescott stood before his mirror, carefully adjusting a fine grey wig over his own fair hair, which he had brushed so vigorously it lay as smooth on his head as a shiny bald pate. The wig in place, he surveyed himself in the glass with no little satisfaction. Quite a handsome Colonial gentleman, he decided. Billy was very proud of his pale blue satin coat and knee breeches, his lace ruffles, silk stockings and buckled slippers. The outfit, on the whole, was exceedingly becoming. Tall, slim men with clean-cut faces, like his, certainly looked well in fancy clothes! He felt a slight regret that he hadn't known earlier that Betty was going as a maid. It might have been appropriate for him to appear in a butler's garb, but his suit had been ordered from the costumer's, and—oh well, he cut quite a handsome figure in his blue satin and he felt sure, from what Bobbie had told him, that when he got to going on high Betty would be, not merely pleased—that was too tame a word—she would be overwhelmed with joy!

(Continued Next Week)

RAISINS ARE MORE AND MORE POPULAR

By Marie B. Hartman, Manager Domestic Science Department, California Associated Raisin Co.

RAISINS were generally regarded as a holiday luxury a decade ago. It has only been since the war, when laboratory investigation of food products revealed the raisin as nature's own concentration of nutritive elements, that it has become a household staple. Even now the average housewife does not appreciate fully the many uses to which it may be put, but her attention is being constantly directed to it and she is utilizing it more and more in her cookery. It has a distinct appeal as a health food, and as it can be kept for an almost indefinite period it is becoming the one dependable, ever-ready emergency dessert.

Raisins are of three varieties—seeded, from which the seeds have been removed; seedless, grown without seeds; and clusters, served on the stem just as they are dried in the vineyards. The seeded and seedless varieties are used in cooking, while the seedless and cluster varieties are preferred as a confection, to be eaten uncooked. Raisins as a confection are growing steadily in popularity. It may be that the new custom of serving clusters at afternoon teas is a fad that will pass, but raisins are not only tempting and delicious—they have distinct health value because of their heavy content of medicinal iron. They aid digestion, they revitalize anemic blood, they satisfy a between-meal craving for stimulating food. Therefore there is every reason to believe that the custom will become more popular.

But the popularity of raisins in the kitchen is increasing tremendously, too. No matter through what process of cooking it may be put the raisin retains its vitalizing, health giving iron, easily assimilated in the digestive processes. To my way of thinking there is no more appetizing dish than stewed raisins served at breakfast. Nor is there made a pie more luscious than raisin pie. But these are the more common ways of serving cooked raisins. Everybody is familiar, too, with raisin bread and raisin cake.

Delicious salads may be made with raisins. They lend zest and flavor to puddings. No palate can resist the call of the raisin filled biscuit. In winter the housewife has merely to consult her recipe book, fetch a package or two of raisins from her pantry and bring to her table a hint of California sunshine along with the flavor of the fruits of midsummer.

Here are just a few suggestions as to what may be done with raisins:

Stewed Raisins

Cover ½ package of Sun-Maid raisins with cold water and soak over night. In the morning add a slice of lemon or orange. Place on the fire in the same water in which they have been soaked and allow to cook slowly for 30 minutes. Sugar may be added, but it is not necessary, as Sun-Maid raisins contain natural fruit sugar. Serve with or without cream.

Favorite Boston Cookies

½ cup butter or other fat, ¾ cup sugar, 1 egg, 1½ cups flour, 1 teaspoon baking powder, ¼ teaspoon salt, ½ teaspoon cinnamon, ½ cup chopped Sun-Maid raisins, ¼ cup chopped walnut meats.

Cream butter and add sugar slowly, creaming them together. Add well beaten egg. Sift 1 cup flour, baking powder, salt and cinnamon together and add to egg mixture. Mix remainder of flour with the raisins and nuts and add. Mix thoroughly and drop from teaspoon 1 inch apart on a flat greased pan. Bake in hot oven 10 to 15 minutes. This makes about 36 cookies.

Cottage Cheese Salad

¾ cup seedless Sun-Maid raisins, 1½ cups cottage cheese, ½ teaspoon salt, ¼ teaspoon pepper, lettuce, French dressing.

Steam raisins over boiling water until plump and tender. Moisten cheese with a little milk or cream. Add salt and pepper and mix with raisins. Arrange on crisp lettuce leaves and pour French dressing over it just before serving.

Raisin Pie

2 cups seeded Sun-Maid raisins, 1½ cups boiling water, ½ cup sugar, 1 tablespoon grated orange rind, 2 tablespoons corn starch, 2 tablespoons lemon juice, 1 tablespoon grated lemon rind, juice of 1 orange, 1 cup chopped walnuts.

Cook raisins in boiling water for 5 minutes; pour into it sugar and corn starch which have been mixed. Cook until thick; remove from fire and add other ingredients. Bake between two crusts. Walnuts may be omitted if desired.

Apple Sauce Cake

1½ cups apple sauce, 1 cup sugar, 2 cups flour, 1 cup seeded raisins, 1 teaspoon cinnamon, ½ cup butter, 1 tablespoon hot water, 1 teaspoon soda, 2 egg yolks, 1 teaspoon cloves.

Cream the butter and sugar, add dry ingredients, beaten egg yolks, then apple sauce. Beat thoroughly and bake in a moderate oven. Use white icing on this cake.

Caramel Raisin Apple

½ cup seeded Sun-Maid raisins, 6 tart apples, 2 tablespoons butter, 1 cup light brown sugar, 1/3 cup water.

Pare, core and halve the apples and arrange in a broad saucepan or aluminum frying pan. Cover with the raisins, then sugar; add the butter, cut into bits, add water and stew gently until apples are tender and the butter and sugar have formed a rich caramel. May be served hot or cold, with or without cream, or as an accompaniment to plain boiled rice.

HINTS FROM HOUSEKEEPERS

Green Tomato Mince Meat

Seventy-five medium size tomatoes chopped medium fine. Let stand a few hours, draw off juice and add as much water as juice, add 5 pounds light brown sugar (or half brown and half white if preferred), 2 pounds chopped raisins. Cook all slowly until tender. Add 2 tablespoons each of cinnamon, salt, cloves and allspice, 1 cup vinegar and boil until thick. Stir constantly. Lastly pare 6 large sour apples, core and chop, cook and when done add to the first part and mix thoroughly, then seal while hot in Mason jars. This is nice mince meat and can be used for fruit cake, plum pudding and pies. Add butter if used for pies. Will keep indefinitely. When opening jars for use one can add more apples and raisins if desired, and you cannot tell the difference between this recipe and the one made with meat. All ingredients must be chopped and not ground.—Mrs. F. H. Merlan, Montebello.

Tomato Soup

Put 2 cups of tomato puree in a saucepan and let come to boil. Break 2 or 3 sticks of macaroni, also add a little onion, 2 tablespoons rice and 1 tablespoon oil or butter. Cook slowly until done, then add 2 cups good rich milk. Let it get good and hot and salt just before serving.—Subscriber, Modesto.

HOUSEHOLD QUERIES

Canning Pimientos

I am a reader of your valuable paper and enjoy it so much. I am coming with a request for directions for canning pimiento peppers for winter use. Will you please print a recipe in this week's paper, if possible, as have ripe pimientos and do not know how to can them?—Subscriber, Chino.

Use only perfectly sound peppers. To remove seeds cut around stem of each with slender paring knife and remove inside portions. To peel place in hot oven from six to 10 minutes until skin blisters and cracks, watching carefully to see that they do not burn. Remove skin with slender paring knife. Flatten peppers and pack in horizontal layers in jars, adding no salt nor water. Put on top, place in water bath (home made canner of wash boiler or kettle.) Bring water to boiling point in canner, boil 20 minutes for pints, 30 minutes for quarts. Irregular or broken peppers may be cut in strips or chopped and canned in same way.

Cranberry Sherbet

I wonder if any one of the Cultivator readers can tell me how to make sherbet of cranberries? Last Christmas time we had some at a hotel dinner, and it was fine.—Subscriber, Los Angeles.

Cook 1 quart cranberries in 1 quart water until soft. Pour into jelly bag and press out juice. Add to juice 1½ cups sugar and juice of 2 lemons; stir until sugar is dissolved. Place when cool in a freezer packed with 3 parts ice and 1 part salt. When half frozen add the stiffly beaten whites of 2 eggs and finish freezing.

Dixie Relish

Would like very much to get a recipe for Dixie relish, so am asking the Cultivator household department.—Reader, Long Beach.

One quart chopped cabbage or chayotes, 1 pint chopped white onion, 1 pint chopped sweet red pepper, 1 pint chopped sweet green pepper, 4 tablespoons salt, 4 tablespoons mustard seed, 2 tablespoons celery seed (crushed), ¾ cup sugar, 1 quart vinegar. Soak pepper in brine (1 cup salt to 1 gallon water) for 24 hours. Freshen in clear cold water for 1 or 2 hours. Drain well. Remove seeds and coarse white sections. Chop separately, and measure the chopped cabbage, peppers and onions before mixing. Add spices, sugar and vinegar. Let stand over night covered in a crock or enameled vessel. Pack in small sterilized jars. When ready to pack drain vinegar off in order that the jar may be well packed. Pack relish in jars, pressing it carefully; then pour over it the vinegar which was drained off. Paddle the jar thoroughly to get every bubble out and allow the vinegar to displace all air spaces. Garnish each jar with 2 quarter-inch pointed strips of red pepper 3 inches long. Place these strips vertically on opposite sides of the seams of the jar. Cap, clamp, and boil 10 minutes.

For Christmas cake decorations, grease holly leaves lightly with butter, cover with icing and let dry. The icing leaves come off easily and make pretty decorations.

The Cultivator Patterns

3817. Set of Bags for Many Uses—These two models are cut in one size. No. 1 will require ⅛ yard of 32 inch material. No. 2 will require ⅞ yard of 24 inch material. Price 10 cents.

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2970. A Set of Pleasing Toys for the Nursery—Cut in one size. Either style requires ¾ yard of 27 inch material. Price 10 cents.

3797. Dolly's New Dress—Cut in five sizes: 16, 18, 20, 22 and 24 inches in length, and will require ⅝ yard of 24 inch material for an 18 inch size. Price 10 cents.

2300. An Attractive Set of Toy Animals—The patterns are cut in one size only. It will require ½ yard of flannel for the sheep, ¾ yard for the dog, and ⅜ yard for the pig. Price 10 cents.

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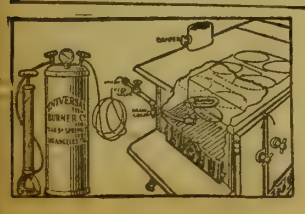

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Elberg Sale One of Season's Best

The Roselawn Shorthorn sale at Woodlawn, November 16, turned out to be one of the best sales of the breed held in America this fall and was a fine tribute to the esteem accorded the owner, Dr. H. M. Elberg. In order to provide an offering that would attract the patronage of leading western breeders Dr. Elberg cut rather heavily into his breeding plant and cataloged a number that he was very loath to part with. A large portion of the offering consisted of extremely desirable Scotch sorts, featuring the service of the good white bull, Roselawn Champion, that were readily absorbed by the breeders present.

The general average of the 21 females sold was $372. Only one bull was offered, owing to the fact that not many bull buyers put in an appearance.

A four figure top was established when the Blackhawk Ranch, Diablo, paid $1050 for the outstanding white junior yearling heifer, Village Beauty E. The same firm secured Gwendoline 4th at $500 and the richly bred Geraldine 7th at $600.

Caledonia Farms, West Sacramento, selected three good ones and were active bidders on all the better sorts. H. C. Muddux & Son, Sacramento, offered very strong support all through the sale and were the heaviest buyers, taking six head. Among their purchases was the good roan cow, Gwendoline Maid 16th, with a roan heifer calf at foot by Roselawn Champion at $750. Other buyers included Geo. H. Sawyer of Waterford and E. H. Thomas of Klamath Falls, Oregon.

Prior to the opening of the sale short addresses were made by Senator Benj. F. Rush, president of the California Shorthorn Breeders' Association, A. E. Lawson of Spokane, Washington, representing the national association and Professor Gordon H. True.

The sale was managed by the California Breeders Sales and Pedigree Company with Col. H. L. Hull of Iowa officiating as auctioneer and Col. John A. Davis of Manteca in the ring.

FEMALES

1, Village Beauty E, white, Mar. 1920; Blackhawk Ranch, Diablo, $1050.
2, Red Queen 4th, red, Mar. 1917; Caledonia Farms, West Sacramento, $525.
3, Gwendoline Maid 16th, roan, Jan. 1918; and roan c. c.; H. C. Muddux & Son, Sacramento, $750.
4, Gwendoline Maid 14th, red, Mar. 1918; and roan b. c.; Blackhawk Ranch, $500.
5, Gwendoline Maid 20th, roan, Sept. 1919; T. S. Glide, Davis, $250.
6, Gwendoline Lass, roan, Sept. 1920; E. H. Thomas, Klamath Falls, Ore., $435.
7, Geraldine 7th, white, Feb. 1920; Blackhawk Ranch, $600.
8, Acanthus Girl, roan, Apr. 1920; Caledonia Farms, $250.
9, Red Emerald 2d, red, Sept. 1917; Eliza Shepard, Glen Ellen, $285.
10, Roan Emerald, roan, Feb. 1921; E. H. Thomas, $210.
12, Elmgrove Violet, red, Oct. 1919; Geo. H. Sawyer, Waterford, $300.
13, Gloster's Lady, red, May 1920; Wm. Bond, Newark, $260.
14, Crescent Lady, roan, Oct. 1919; H. C. Muddux & Son, $500.
15, Roselawn 69th, roan, Jan. 1913; and red b. c.; H. C. Muddux & Son, $275.
16, Moss Rose Ruby 14th, roan, Jan. 1918, and red c. c.; Geo. H. Sawyer, $275.
17, Roselawn Ruby, roan, July 1920; Geo. H. Sawyer, $175.
18, Roselawn Flora 2d, red, Sept. 1919; E. H. Thomas, $235.
19, Mary Welcome, roan, Oct. 1920; H. C. Muddux & Son, $225.
20, White Princess, white, Oct. 1920; H. C. Muddux & Son, $250.
22, New Year's Gift, roan, Jan. 1921; Butte City Ranch, Butte City, $195.
23, Roselawn Lady, roan, April 1921; H. C. Muddux & Son, $280.

BULLS

26, Roan Champion, roan, Sept. 1919; E. W. Briggs, Healdsburg, $250.

Holsteins Sell at Stockton

The consignment sale of Holsteins arranged by four members of the San Joaquin County Holstein Breeders Association and held at Stockton, November 15, drew one of the largest crowds of the fall season. Prices for the most part were fairly satisfactory but as in several late sales there was light demand for bulls and young heifers.

J. M. Campbell of Escalon made the top consignment and also sold the top female. The entire herd owned by J. C. & A. F. Ramsay of Modesto was cashed in the sale at moderate prices. Edwards Bros., of Escalon, contributed eight head. R. Stevens of Stockton offered four head, including the 32.79 pound cow, Miss Gelsche Walker Kornedyke. This good cow sold as the bargain of the sale at $375.

The sale was managed by the California Breeders Sales and Pedigree Company of Sacramento. Col. Ben A. Rhoades of Los Angeles was in the box as usual and Col. Davis called for bids from the ring.

A representative list of sales follow:

Consigned by J. M. Campbell, Escalon

1, Lazon March Alcartra, Mar. 1916; 23.08 lbs.; David Salfield, Stockton, $300.
2, Countess Potoki Alcartra, Oct. 1915, 20.21 lbs.; W. H. E. Leffler, Stockton, $445.
3, Lady Headlight Alcartra, Nov. 1916, 19.82 lbs.; J. F. Miller, Ripon, $360.
4, Escalon Miss Wit Alcartra, Mar. 1918; Chas. N. Howell, Lathrop, $275.
5, Karlray Zoa Walker, Aug. 1919; W. H. E. Leffler, $275.
6, Escalon Merry Walker, Dec. 1919; Chas. N. Howell, $185.
7, Karlray Virginia Walker, June 1919; W. H. E. Leffler, $310.

Consigned by M. J. & B. A. Edwards, Escalon

8, Daisy McKeen, Aug. 1913; Paul Herman, Lodi, $225.
10, Bellinghurst Alcartra Onyx, Apr. 1916; W. H. E. Leffler, $180.
11, Prilly Glista, Dec. 1919; E. S. Beecher, Stockton, $200.
12, Imperial Prince Jose, Oct. 1919; E. B. Straight, Redding, $185.
13, Sarcastic Queen Torchlight, Feb. 1920; E. S. Beecher, $145.
14, Blondy Pontiac Ignaro, July 1920; C. C. Fisk, Stockton, $125.
15, Aralia Pontiac Goldstone, Apr. 1917; E. B. Straight, $255.
16, Bonita Pietertje Pontiac, Aug. 1917; C. E. Early, Manteca, $135.

Consigned by J. C. & A. F. Ramsay, Modesto

17, Dora Hengerveld of Sylvian Iris, Oct. 1913, 23.14 lbs.; David Salfield, $340.
18, Miss Clair Walker, May 1920; J. F. Miller, $180.
20, Princess Fay Spotfoot, Oct. 1916; Glenwood Stock Farm, Riverside, $185.
23, Lady Mary Hengerveld, July 1915; E. B. Straight, $300.
25, Lady Mary Woodcrest, Nov. 1918; David Salfield, $275.
29, Pauline Korndyke Alcartra, April 1918; F. V. Perry, Modesto, $195.
35, Ruth Hengerveld of Linwood, May 1915; Glenwood Stock Farm, $270.
36, Miss Campbell Walker, Sept. 1919; Steve Simon, Stockton, $175.
37, Princess Harriet Woodcrest, Oct. 1920; Glenwood Stock Farm, $170.

Consigned by R. Stevens, Stockton

39, Miss Gelsche Walker Korndyke, Aug. 1914, 32.79 lbs.; David Salfield, $375.
40, Lady Ulrika Bonnie DeKol, Oct. 1916; C. E. Early, $265.
41, Helena King Segis, Apr. 1917; F. V. Perry, $300.

Selling Cattle on Cost Plus Basis

By R. P. Royce

Replying to an article with above title in the California Cultivator of Oct. 22 a contemporary comments:

"SPECIAL PRIVILEGE DIES HARD!"

"The article on another page of this issue came into the office during our absence in Los Angeles and was written without knowledge that another journal was allowing one of its staff to try to discount his knowledge, impeach the sincerity of the motives of our contributor, and lampoon his honest and intelligent effort to make California a fairer field for the pursuit of the Holstein industry. The article in this issue therefore takes no account of the onset which is being made upon him as the penalty which interested parties are trying to inflict upon him and upon this journal for speaking out and speaking truly in the interest of all who are growing purebred animals in this state and in the interest also of all those who desire to improve their stock—if they are made sure that they can get the agencies for such improvement fairly and without favor. To secure this is not easy. Special privilege is known by everybody to be a tough boulder to blast and we entered upon the undertaking with full knowledge of that fact. Those who organize ostensibly for the advantage of all producers in such a way that an inner circle gets a rake-off from the sale of what an outer circle produces, will not quickly let go of the profitable privilege which they conspired to possess, and when a journal, posing as the friend of all producers, appears as the apologist and promoter of the well-stacked game, it cannot be expected to loosen its hold, because it sets out to get its profit from the very same special privilege that it defends. As this journal has given offense to all participators in the clean-up of this special privilege, we must of course take our punishment, and probably we ought to be grateful that our contemporary entrusts the wielding of the rod to a somewhat bumptious youth, who seems to be hoping to make his way in California by impeaching our best popular institutions and by trying to dictate policies and methods for efforts undertaken by our best people and to which efforts he contributes nothing but language and effrontery. Some windmill maker lost a good efficiency gauge when he took to agricultural writing."

The above unsolicited, yet nevertheless highly appreciated, editorial from the pen of the editor in chief of our esteemed indignant contemporary would ordinarily be passed without comment, but it seems we would indeed be lacking in journalistic courtesy did we fail to acknowledge the rather unusual honor accorded this member of our staff.

In order to give such distinction it must have been necessary to lay aside for the time being such weighty matters in hand as the selection of the next governor of California, the solution of the economic ills of the world and a comment of the untoward climatic conditions of week before last as compared to a similar period in 1875.

Furthermore we desire to acknowledge our appreciation of approval vouchsafed this journal for "having intrusted the wielding of the rod to a somewhat bumptious youth." We at all times strive to please and the fact that our bumptious youth, in wielding the rod, managed to raise a sizeable welt, and at the same time meet with the approval of the-veteran-editor-by-the-Bay, is we take it, further evidence of good judgment on our part.

We do deplore the fact that our habitually indignant contemporary had to brush off the old and tattered "special privilege" cry to find a starting point for his gentlemanly remarks. It's the first time in years we have seen this "old stuff" used and we are sorry indeed that it was felt necessary to drag out this trick of the old fashioned muckraker.

We rather imagine that our friends would make greater headway with this cry of special privilege and claim of journalistic sanctification if the breeders of this state did not recall that but a few years ago that same paper set out on a campaign to expose the sins of the organized milk producers of this state. The editorial flip-flop they negotiated at that time still stands as a record piece of journalistic acrobatics.

DAIRY PRODUCTS SHOW

There are more than a million head of dairy cows in the Pacific Slope States, and the value of the manufactured products is in excess of 150 million dollars annually. California alone produces over 70 million pounds of butter per year, and consumes about 15 million gallons of ice cream annually. Moreover, an infant dairy industry is developing in the Hawaiian Islands, in Mexico, and on the West Coast of South America.

It is hard to visualize all this, and impossible to do so unless a general annual gathering can be had here on the Pacific Coast. The Pacific Slope Dairy Products Show that will be given in Stockton, December 5 to 11, is the first effort to bring together the organizations that have held their conventions separately and to assemble a comprehensive exhibit of dairy products manufactured in the states west of the Rocky Mountains. Those who will participate are: Manufacturing organizations, milk distributors, exhibitors of dairy products machinery, equipment and supplies; University of California, state department of agriculture, United States department of agriculture, California dairy council. There will be scoring contests in butter, cheese, ice cream, and market milk and cream. Medals and ribbons and many handsome cups and cash prizes will be awarded. The show will be held in the State Armory.

WOOL GROWERS MEET

The fourteenth annual meeting of the California Woolgrowers Association will be held at Fresno this year, Monday and Tuesday, November 28 and 29. The meeting will be called to order at 1:30 p. m., Monday, and will be held in the council chamber of the city hall.

Frank J. Hagenbarth, president of the National Woolgrowers Association, will be present at the meeting. Hagenbarth has been leading the fight before Congress on tariff matters, and will have first hand information along these lines. President F. A. Ellenwood was one of the committee who appeared before the ways and means committee of the house last winter before the passage of the emergency tariff bill, and will tell of his trip.

On the program will also be representatives from the State and United States departments of agriculture, including the forest service.

Bull Calves by the World's Champion

We have a number of splendid bull calves sired by Tritomia Pietertje Ormsby, grand champion of the National Dairy Show, for sale. They are all backed up by high production records and all are good individuals.
Every animal tuberculin tested and guaranteed a breeder.
Let's keep them in California.
Terms to responsible parties.

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Jack Klein, Mgr. R 10, Hollywood

O.U.R. Hampshire Swine

Ortega-Underhill-Rancho

Thos. T. Dinsmore, Mgr., Santa Barbara, Cal.

SUCCESS OF THE "DAIRY BUSINESS"
MEANS MILLIONS TO CALIFORNIA
FULL INFORMATION AND LOAN PLAN SENT
YOU (WITHOUT OBLIGATION) UPON REQUEST
The Co-operative Dairy Loan Company Suite 528 Pacific Mutual Bldg. Los Angeles, Calif.

Livestock News Notes

Manager Lovell of the Blackhawk Ranch, Diablo, reports the sale of the two year old Shire stallion, Blackhawk King, to a Japanese buyer. Blackhawk King was sired by Dovecote King and is out of the show mare, Quanea Diamond. He won his class at the recent San Francisco Show.

Dr. E. J. Weldon, veteran Holstein breeder of Sacramento, has sold his entire herd, consisting of around 30 head, to the Hayes Stock Farm, Sacramento.

The highest priced Holstein bull in the last Chester County, Pennsylvania, sale was a son of Sir Aaggie Mead De Kol, the bull that A. W. Morris & Sons Corporation sold to a New York firm for $12,000.

Kolrain Finderne Bess, a Holstein cow owned by the Dutchland Farms of Massachusetts, has just completed a record of 1281 pounds of butter from 32,563 pounds of milk. The milk yield represents the highest year's production to be registered by any cow east of the Rocky Mountains.

Following the Elberg Shorthorn sale, E. H. Thomas of Klamath Falls, Ore., visited Caledonia Farms, West Sacramento, and selected two females. He purchased the roan ten year old Grenadine in calf to Pine Grove King and a heifer by the same sire and in calf to Gainford Matchless.

One of the largest sales of grade dairy cattle recorded in recent weeks was made last week when J. R. Bush of Merced purchased the entire herd of grade Holsteins owned by the Whitaker Dairy, located between Davis and Dixon. The sale included nearly 150 head and the price paid was above $150 each.

President C. N. Hawkins of the California National Livestock Show reports that the recent show at San Francisco was successful beyond the most optimistic hopes of the directors. A final checking of accounts is under way and it is believed that the actual deficit will be only $7000 or $8000, a large percentage of which can be charged up to future shows. San Francisco business interests are coming forward with offers of aid for next year's show and it is certain that a greater show than ever will be provided for 1922.

Professor Gordon H. True of the college of agriculture, University of California, has left for Chicago to attend the International Livestock Exposition where the university will have extensive exhibits in the various fat classes.

A. E. Lawson, western representative of the American Shorthorn Breeders' Association, with headquarters in Spokane, is arranging to spend the first three months of 1922 working with California breeders.

John A. Bunting, Hereford breeder of Mission San Jose, writes that he is now getting the first calves by his young herd sire, The Peer, and that the first baker's dozen are as attractive and uniform in excellence as he could hope. Several of these calves have already been started on their show career and will make their debut at the 1922 shows.

Another California breeder who will attend the great Chicago show will be C. N. Hawkins of the Pacheco Cattle Co., Hollister. Mr. Hawkins will take advantage of the opportunity to boost for next year's show at San Francisco and has hopes of inducing a number of the leading Eastern herds to come out this way.

The California Holstein Breeders' Association is beginning to clear the decks for the 1922 Guaranty sale, the Holstein classic of the West. Secretary Hughes has announced that the forthcoming sale will be up to the high standard of former years and that it is probable that the sale will be held at Los Angeles in place of Sacramento. It is also probable that only cows and bred heifers will be offered.

HEREFORD BREEDERS TO MEET NEEDS OF RANGEMEN

The remarkable expansion of breeding herds of registered Herefords in the west within the past few years is now bearing fruit in the form of annual crops of bulls in increasing numbers, a fact that is of distinct interest and advantage to the many range cattle owners who have been compelled to go east of the Rockies for their Hereford bulls in the past.

While the number of Hereford bulls raised annually in our western herds will not begin to fill the demand for years to come, yet progress is being made, and members of the Pacific Coast Hereford Cattle Breeders Association, of which J. I. Cazier, Wells, Nev., is president, and J. A. Bunting, Mission San Jose, is secretary, feel that the time has come when some of their public sales should be arranged with the convenience and needs of range cattle owners in mind. To that end it has been decided that the next sale under auspices of the association will include sixty or more registered Hereford bulls selected for fitness for range service, and that a considerable number of them will be offered in lots to suit the carlot buyer, a sale practice which is entirely new in California. Entries are already assured from some of the foremost Hereford herds in Oregon, Nevada, and California. The sale will be held at University Farm, Davis, during the annual Stockmen's Week, the last week in February, and will be under management of California Breeders Sales and Pedigree Co., Sacramento, who will begin preliminary arrangements for the sale about the first of December. The sales company will extend its usual credit on the basis of one-half cash, balance in six months, another feature that has proven attractive in sales during the past season.

FARM NAME AS TRADE-MARK

Many farmers throughout the country are finding it to their advantage commercially to give their farms attractive names that can be used in connection with marketing their products. Provided the quality of the product is kept up, a reputation is quickly established for the farm and the commodity that makes the name of real worth in dollars and cents when it comes in competition on the market with other products The name becomes in time a real asset to the owner and has a money value much like the good will in other kinds of business.

In England many farms have borne distinctive names for years, which have become famous in connection with various products. This has been especially true in the case of certain breeders of cattle. The name of the farm passes current among cattle breeders as a sort of guarantee that animals from that farm are all that is claimed for them. The practice is coming into vogue in this country and with it a desire to be protected against others adopting the same name and thereby benefiting by the reputation already established for it.

The United States government through its patent office, which interprets the trade-mark and label copyright laws, is prepared to give this protection within certain limits. Some of the states have laws authorizing the registration of farm names with the state authorities and no one else in that state is allowed to use the name. This is merely for use within that particular state. The United States patent office, however, is prepared to register farm names as trade-marks if they meet specified requirements. This will protect the owner against their use by others anywhere in the United States. There are certain requirements, however, that must be met as in the case of other sorts of names used as trade-marks under the federal trade-mark law. The farm name, for one thing, must be used by the farmer as a trade-mark on his products that he ships to points outside his own state; in other words, a commodity that moves in interstate commerce. It must be printed, stamped, or otherwise attached to each parcel. The federal law makes no provision for the registering of names used as trade-marks on commodities that are shipped only within the state.

Although it is thought advisable, it is not necessary that the name be arranged into any distinctive design. Under the trade-mark act of 1905 it was not possible to register a name that is merely geographical, or merely descriptive, or is merely a surname not displayed in some particular or distinctive manner. Such marks, however, can be registered under the act of 1920, if they have been in use by the applicant in interstate commerce for not less than one year. In this way Congress sought to give recognition to a common-law right in a name used as a trade-mark on the ground of its use.

Officials of the patent office point out that the names of varieties of seeds or plants can not be trade-marked. For instance, a seed grower may develop a variety of watermelon, which he chooses to call the "Excelsior," and to sell the seed as such. Even though the seed goes into interstate commerce its name can not be registered, and any buyer who reproduces that variety of seed can sell it under the same name. "Excelsior" is the name of the variety, it is pointed out, and no matter who produces it the seed is still of that kind and can be offered for sale as such by anyone producing it. This aiso applies to strains and breeds of livestock.

HUBAM CLOVER IN AFRICA

In a recent issue of the Farmers Weekly of Bloemfontein, South Africa, an account is given of the growth of Hubam clover from seed sent there from the Iowa experiment station:

"February 20, or 153 days after planting, the clover was seven feet high. It was harvested on March 15, the height by that time being seven feet six inches. The plant is an annual. The white flower is somewhat like that of the ordinary clover but elongated and spiral, being about one and a quarter inches long. The stems of the plant when full grown were very thick and during the summer a little of the plant offered to stock was not particularly appreciated.

"A trial was also made of planting some of the seed in the autumn, and so far the results are most satisfactory. The growth is not of course so rapid but cattle devour it greedily in the winter. There are also certain indications in the winter growth going to show that the plant may develop in certain directions even more favorably here than in the States. The experiments so far have been carried out on rich soil in the garden, and it is of course not to be expected that the growth would be so free or rapid in ordinary field culture.

It is too soon yet to say what the ultimate value of this crop will be in South Africa. It apparently stands at least moderate frosts well and points to being a most valuable fodder plant in the winter. The hay, in spite of the coarseness of the stems, will presumably also be of considerable value, but it is thought that its greatest potentiality is as a green manure for plowing in, in view of its heavy bulk and great rapidity of growth."

OUTGOING WEIGHT

"It has always been the aim of this department to recommend that the farmer in selling his commodities where they have been stored in warehouses always have them weighed when leaving the warehouse," says R. C. Melvin, chief, bureau weights and measures of the state department of agriculture. "Of course, I understand that they are weighed at the time of entrance and a warehouse receipt issued. It will be an additional cost to have a reweigh on what we term the outgoing weights, but in the long run I am satisfied the farmer will gain thereby.

"For illustration: Barley, wheat and oats increase a great deal in weight during the largest part of the year. The buyer nearly always purchases the warehouse receipt and pays on the original weight, thereby gaining a great deal on the producer. Rice concerns in purchasing a warehouse receipt always insist upon an outgoing weight at the time of delivery for the reason that rice loses in storage and they are sure there will be quite a shortage from the original receipt according to the weight at time of entry at the warehouse. So it is my opinion after a great deal of experience that what is good in one case in in another.

"Another commodity that I have in mind and which the farmer is sometimes careless in marketing is cream and milk. Owing to the close inspection by this department of creameries they generally have the actual tare weight indicated on the can. There are some containers, however, that have no indication, therefore, the small producer is not aware of the weight of the empty container and is unable to check the actual amount of cream or milk which he markets. In this case, I would suggest that the producer insist upon the tare weight of the container being intelligibly marked thereon so that he can check off."

The weather bureau in Arizona reports "Not many more days of frostless weather will be required to fully develop the top crop of cotton. Much of it has already come to maturity and if what the weather bureau calls radiation nights continue for a week longer a full crop is assured.

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Growers everywhere are abandoning other types of alfalfa for Germain's Hairy Peruvian Alfalfa—a hardy growing, heavy cropping, rich-in-food-value strain. If your dealer can't supply, write us direct for descriptive literature and prices, addressing Dept. C.

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MR. FARMER:—

You are contemplating the purchase of a service bull next year. Why not save 50 per cent of the purchase price by buying a registered Holstein bull calf now. Pay for him next year when he is ready for service.

Sons of SIR VEEMAN KORNDYKE PONTIAC, who has 27 A. R. O. daughters, and of BURR WALKER SADIE VALE, whose seven nearest dams average 29 lbs. of butter in 7 days, included in this offer. Call or write at once.

BURR FARM 26th and Downey Road, Los Angeles RFD 2 Box 120

HOLSTEIN Fred Hartsook RANCH CATTLE

We have assembled an excellent foundation herd of females and will be glad to have breeders call. Fred Hartsook, Lankershim, California.

Tosantos Walker Mead

Born December 9, 1919
Exceptional Yearly Record Backing

His five nearest dams average over 1,000 lbs. butter in a year. He is out of a wonderful daughter of Prince Gelsche Walker and Sir Aaggie Mead De Kol. He is a show bull and is priced for immediate sale.

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Kills Lice, Mites, Fleas. For Scratches, Wounds, Scab, Ordinary Mange, Etc.
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Kern County Milk Scoring Contest

In the milk scoring contest held in Bakersfield on November 5, only those selling their own product were eligible to compete. Of the 43 dairymen competing 32 were selling their milk wholesale. No dairy milking less than three cows could compete. The largest dairy competing milked 125 cows, and this dairy scored 92.2 per cent. The smallest dairy had three cows and scored 93 per cent. The samples submitted were taken from the herd milk, not from selected animals. The contest was under the supervision of County Dairy Inspector G. P. Penfield.

The milk was scored by Dr. Hugh G. Asselstine of the state department of agriculture on the following points: Bacteria 35, sediment 15, butterfat 15, flavor 15, solids 15, acidity 5.

The prizes consisted of $50 offered by the chamber of commerce for the best scoring milk. Peacock & Goode offered $10 for the best score made by any of their patrons, and Underwood's Jersey Dairy gave $7.50 for the first and $5 for the second best score by their patrons.

The first prize was won by Mrs. J. Sullivan from a dairy of 24 cows with a score of 97 per cent. The Peacock & Goodes' prize went to William Destafini with a herd of 29 cows, scoring 94.2 per cent. The Underwood prizes were awarded to F. M. Snow, scoring 94.7 per cent from 14 cows, and Gafner & Holdner from a herd of 51 cows, scoring 94.5 per cent.

The contest developed the fact that the small herds scored no better than the larger ones. Of the 12 dairies scoring over 90 only three milked as few as six cows. The three highest scores came from dairies with 24, 27 and 39 cows, respectively. It also brought out the fact that the weakest point in the scoring was in the solids, not fat. Fourteen entries failed to score 12 points on this; 10 failed to score 12 on sediment; 11 did not score 12 in butterfat; 12 fell below 12 on flavor; 11 counted over 20,000 in bacteria and eight did not score 4 in acidity. A majority of those who scored low in solids also fell down in flavor.

Taking the contest on a whole it was a success and aroused a great deal of interest among a thousand people who attended the show, particularly among the dairymen. We hope to repeat this in the spring and a comparison of the results will be interesting.—G. R. Penfield, County Dairy Inspector.

Earl Graham Wins Cultivator Prize for October in State Dairy Cow Competition

Five grade cows owned by Earl Graham of Compton, had the highest average production of butter fat of similar groups in herds entered in the state dairy cow competition during the month of October, viz.: 57.73 pounds, and the California Cultivator prize for that month was accordingly awarded to him. The production of the individual grades for the month was.

	Age, Years	Days in Milk	Milk Lbs.	Butter Pct.	Fat Lbs.
Niger, gr. H.	Mature	154	1392	5.0	69.60
Hauser, gr. H.	Mature	161	1345	4.4	59.18
Pinkie, gr. Sh.	4	183	1398	4.1	57.32
Pansy, gr. H.	4	163	1116	4.8	53.57
Valentine, gr. H.	Mature	181	1020	4.8	48.96
Average		168	1254	4.60	57.73

This is the fourth time that this prize has been awarded to Mr. Graham, as he also won it last October, December and February, each time for the production of five different grades in his herd. It will be seen that the production of the prize winning grades for October ranged from 69.60 to 48.96 pounds butter fat, the average production of milk being 1254 pounds, with an average fat content of 4.60 per cent (average distance from calving at beginning of month, 168 days.)

These cows stood first among similar groups of five grades in 15 dairy herds in different parts of the state that competed for the Cultivator prize the past month. The average production of butter fat for five of the groups came above 50 pounds fat during the month, viz., E. Graham, Compton, 57.73 pounds; P. Iverson, Grizzly Bluff, 54.58 pounds; W. D. Early, Grizzly Bluff, 53.05 pounds; J. A. Genzoli, Loleta, 50.55 pounds, and M. Pontoni, Arcata, 50.41 pounds.

Prior to the month of October this prize was won six times in succession by Humboldt County dairymen and for six months prior to that by Los Angeles County dairymen. The neck-to-neck race between the two counties gives the honors for the time being to the latter county, for the very creditable production of nearly two pounds butter a day per head for the month, for grades that had been milking five or six monhs at the beginning of the month.

Preparing Pork Products on the Farm

Every farmer can well produce the pork and pork products which are consumed on his farm, for selling hogs and buying pork involves profits, but not to the farmer engaged in the practice. This point is brought out in Farmers' Bulletin 1186, published by the United States department of agriculture, which tells how hogs should be killed and describes different methods of curing and canning pork on the farm. Highly nutritious and palatable pork products for home use are easily made. Pork can be cured and canned in a number of ways, and the variety of products affords a supplement to the daily meals.

A hog of medium condition, gaining rapidly in weight, yields the best quality of meat. A reasonable amount of fat gives juiciness and flavor to the meat, but large amounts of fat are objectionable. Smooth, even, and deeply fleshed hogs yield nicely marbled meats. The meat of old hogs will be improved if they are properly fattened before slaughter, but young hogs from 8 to 12 months old are best for furnishing the home meat supply.

The bulletin emphasizes especially the importance of selecting only healthy hogs for slaughter and of thoroughly cooking all pork products used for food.

Hogs intended for slaughter should not be kept on full feed up to the time of killing. It is better to hold them entirely without feed for 18 to 24 hours prior to that time, but they should have all the fresh drinking water they want. It is essential to have the proper equipment for rapid and skillful work at killing time. Such equipment includes a straight sticking knife, a cutting knife, a 14 inch steel to keep the knives sharp, a hog hook for holding the animals, a bell shaped stick scraper, a gambrel for holding the hog to facilitate cleaning and cutting the meat, and a meat saw. If the hog is not too large a barrel is a convenient receptacle for scalding.

Complete directions for killing and cleaning a hog, properly cutting the portions of meat, rendering lard, making sausage, smoking cured meat, and home canning of pork and pork products are described in the bulletin, copies of which can be obtained free on application to Department of Agriculture, Washington, D. C.

VALUE OF MILKING MACHINE

The mechanical milker is a valuable addition to the dairyman's equipment, says C. C. White in Farm and Ranch. After becoming familiar with the machine a man can operate three units, thus milking from 30 to 35 cows per hour. The elimination of labor troubles is the greatest feature of the milking machine. The farmer who keeps a number of high grade cows is anxious to avoid labor troubles and to insure the production of clean, high grade milk on an economical basis. Farmers who keep only eight or ten cows find the milking machine profitable. Farmers who find it necessary to hire a man to attend to the milk-

ing should investigate the possibilities of the machine milker. One person can handle a two, three, or four unit outfit successfully. There is no danger that a good milking machine properly handled will lessen the flow of milk.

NECESSITY OF MEAT INSPECTION

From time immemorial a form of meat inspection has been practiced by certain classes of people. They recognized even in that period that there existed in animals at times diseases which were transmissible to the human family. With their meager knowledge of scientific principles and a lack of facilities for determining the factors causing disease, they depended largely upon observation and from results thus obtained they drew their conclusions. In this way they discovered that those who did not eat the flesh of certain species of animals were not subject to diseases frequently found in other people who did.

In the Mosaic laws pertaining to the subject we find that certain people followed a religious teaching which forbids its adherents to eat flesh of some species of animals and requires a limited inspection of other species, the flesh of which was to be used as food.

Since the field of bacteriology has been explored to some extent the public mind has been awakened to the danger which threatens health through the eating of diseased or contaminated meat or its products. While other foods are now regarded under certain conditions capable of transmitting to humans certain dangerous diseases, some of us have not yet fully realized that no other article of food demands more attention by the consumer than meat.

For this reason it becomes necessary to devise means for protecting the health of the people by establishing a system of meat inspection under the supervision of persons qualified to recognize abnormal or insanitary conditions of meat and prevent its being disposed of as human food. Systematic meat inspection does not only comprise inspection of meats but inspection of livestock before slaughter as well as the condition of their carcasses. Of equal importance is the maintenance of sanitary conditions of slaughtering establishments to prevent contamination of the flesh of healthy animals.—G. W. R.

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CAUSTIC BALSAM
The Perfect Liniment
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It is astonishing how quickly Caustic Balsam relieves Stiffness and Lameness, Rheumatism, Neuralgia, Strains, Sprains, Lumbago, Backache, Sore Throat, Chest Cold, Stiff Joints, etc.

Serious results through Blood Poisoning are liable from scratches, cuts or wounds from rusty nails or other metal. This great remedy applied at once will prove a preventive, is a perfect antiseptic, soothes while it heals. *What it has done for others it will do for you.*

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THE LAWRENCE-WILLIAMS CO
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For Profitable Durocs
As we have sold out of bred sows and gilts, we are now offering big growthy fall pigs, either sex, at attractive prices.
D. G. Cummins & Son
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SUDAN GRASS
1ST CLASS SEED FOR SALE
The Lewis Company
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Swine Mineral Mixture

By John M. Evvard, Iowa Experiment Station

Three practical swine mineral mixture formulas are:

Simple Mineral Mixture—Equal parts by weight of air slaked lime and salt, or of wood ashes and salt. This mixture furnishes the main essential elements principally lacking in our corn and small grains.

A Simple, but More Complete Mineral Mixture—Equal parts by weight of air slaked lime, salt and bone meal (or spent bone black). This mixture differs from the simplest one in that bone is added, this addition insuring an abundance of bone making materials.

A Fairly Complete Mineral Mixture—Salt, common, flake form, 30 pounds; spent bone black, or bone meal, finely ground, or bone flour, 25 pounds; commercial kainit, or potassium chloride, or wood ashes, 12 pounds; sulphur, flowers of, 10 pounds; air slaked lime, or limestone, finely ground, 10 pounds; Glauber's salts or sodium sulphate, 5.7 pounds; Epsom salts or magnesium sulphate, 5 pounds; copperas, or iron sulphate, 2 pounds; potassium iodide, 0.3 pound; total, 100 pounds. This mixture carries most of the essential elements in practical and well known forms. It is compounded so as to be acceptable to those who wish to have included such popular, time-honored and tried substances as sulphur, Glauber's salts, copperas and others that are widely used in general swine feeding practice.

These mineral mixtures may be self fed, free choice style, or combined with the feeds. About a pound per month per hog has been the suggested allowance when hand fed.

There are no patents or copyrights on any of these formulas. There are no secrets in their compounding inasmuch as they are simple mixtures of simple, commonly known and widely used substances. They are not perfect, but represent an effort to supply a pressing need. Later, these formulas will be modified, when we have more experimental work to justify changes. "Mineral mixture" experiments are now in progress.

Before suggesting the three tentative formulas given above, one preliminary test involving some seven months was conducted with gilts. The test covered the breeding season and pregnancy period of the gilts, and also a two months suckling period on the gilts and their litters. Four groups of ten gilts each were fed. The basal ration allowed all lots was shelled corn and tankage. The sows were in dry lot up to about a week to ten days after farrowing, when they and their litters were transferred to bluegrass pastures.

Group I received no minerals. Group II received the "Simple mineral mixture," self-fed. Group III received the "Simple but more complete mineral mixture," self-fed. Group IV received the "Fairly complete mineral mixture," self-fed.

In this preliminary investigation the results showed up favorably for mineral feeding; in general, the groups receiving minerals made a somewhat better showing than the "No mineral" check group. In many particulars Group IV, receiving the "Fairly complete mixture," made the best showing.

However, further investigations, now in progress, are apparently showing up more favorably for the simple mixtures and less favorably for the complete than did the preliminary test. In the "Mineral mixture" comparisons run to date, the basal ration has been corn and tankage, a very good combination of feeds, a combination generally considered as not needing to be supplemented with a mineral mixture. It appears, however, that even so good a ration as corn and tankage may be made somewhat efficient through proper mineral additions. Ordinary rations poor in mineral should show a greater benefit from mineral feeding.

While we have secured in our various tests a good many favorable results through the feeding of such common mineral substances as lime, salt, bone meal and other similarly classed materials, and while our preliminary results with "mineral mixtures" for swine have shown up so far in favor of mineral feeding, yet we cannot as yet say definitely just what kind of general mineral mixture is best.

Our preliminary results on the feeding of the mineral mixtures, formulas for which are given, must not be considered as final or conclusive, but only as suggestive at the present time. Reports of investigations now in progress will be made public in the near future.

The main deduction to be drawn from our "mineral" experiments to date is that proper "mineral feeding" has, when considered on the whole, been of some advantage under the conditions of our tests.

Concerning the use made of the above prescribed formulas, as given out in December, 1920, it is in order to state that a good many farmers are buying the specified individual ingredients and mixing them to their satisfaction. Many county agents have made these mixtures in rather large quantities and distributed them to their swine growers. Druggists in some localities have filled these formulas for their patrons.

COW TESTING PROVES THEM OUT

The Southern Los Angeles County Cow Testing Association recently organized makes report for October with a showing of 150 cows averaging better than 1½ pounds butterfat per day. Chas. Harrington has the high test cow of the association. This cow produced 96.5 pounds fat. Earl Graham's cow, with a production of 94.7 pounds fat, takes second place. On the other hand, Earl Graham's pure bred bunch of 12 cows tops the list with 55.5 pounds average while his grades make an average of 53.3 pounds. Supervisor of Tests L. J. Birge furnishes us with table showing averages from the higher producing dairies of the association as follows:

	No. Cows	Butterfat %	Butterfat Lbs.
Earl Graham, Compton	43	4.08	53.3
Earl Graham (pure breds)	12	3.6	55.5
C. V. Harris, Compton (grades)	36	3.69	47.0
W. Zylstra, Belleflower (grades)	21	4.0	43.1
Tim Murphy (grades)	13	4.1	43.1
Peter Wilber (grades)	35	4.03	42.9
D. H. Dillion (grades)	22	4.1	41.9
Agee Bros. (pure breds)	13	3.5	40.6
J. Tilford (grades)	41	4.29	40.0
Chas. Harrington (grades)	21	4.18	39.9
S. W. Bockema (grades)	16	4.42	39.2
J. H. Leahy, Belleflower (grades)	26	5.04	39.2
Fred De Vries (grades)	41	4.3	38.2
Geo. Webb, Compton (grades)	54	3.99	37.5
J. W. Gains, Clearwater (grades) (Jerseys)	16	5.0	37.5
Geo. Hight (grades)	31	3.97	37.1
R. M. Howie (grades)	19	4.39	36.0
Palmer (grades)	11	3.9	32.3
M. A. McClain, Long Beach (grades)	104	3.98	29.7
Paul Taylor (grades)	9	3.98	31.7

POISONOUS MILKWEED

Stock poisoning by weeds on the western ranges is often so insidious that it is difficult to trace the cause of the trouble to its correct source. This is true of the various milkweeds, some of which have poisonous properties, while other suspected varieties have been found to be non-poisonous. The Mexican whorled milkweed is believed to have caused much of the sheep trouble attributed to some other varieties. This plant ranges from Mexico northward through California, western Nevada and southern Washington to eastern Idaho. It is also known as the narrow leaf milkweed. Feeding tests indicate that the poisonous qualities are most pronounced in the leaves. Only sheep were used in the feeding experiments, but other investigators assert from experience that cattle also are subject to poison.

Poultry accounting schools were held at Petaluma, November 10 and Santa Rosa, November 11, under auspices of the Poultry Producers of Central California and the agricultural extension service.

DOUBLES THE VALUE OF HIS COWS
Uses Kow-Kare with Grain Feed with Wonderful Results

This Yankee dairyman knows the value of increasing the milk yield through perfect cow-health. R. D. Johnson of Groton, Conn. writes:

"Have used your Kow-Kare for the past two years, and have never fed cows any grain without giving one tablespoonful of Kow-Kare. I have positively doubled the worth of cows. I bought a cow a year ago for $75 and she was giving fourteen quarts per day, and she has just freshened again three weeks ago, and I am getting twenty-four quarts per day, and Kow-Kare made this cow. Have four others that I bought that were giving from fourteen to sixteen quarts and now I am getting twenty-two quarts per day from them."

Kow-Kare is a valuable winter aid in the cow barn because it keeps the assimilation and digestion in healthiest condition when the feed must be mostly concentrates and roughage. Winter housing and feeding reduce the vitality and activity of the milk making organs. Kow-Kare restores and keeps digestive and genital functions healthy. Barrenness, Abortion, Scouring, Bunches, Milk Fever, and Loss of Appetite are banished by using Kow-Kare as directed.

The milk yield tells the story of the healthy herd—and poor milkers mean a loss. Let Kow-Kare help you to a bigger dairy profit. General stores, feed dealers and druggists sell it at the new reduced prices—65c and $1.25

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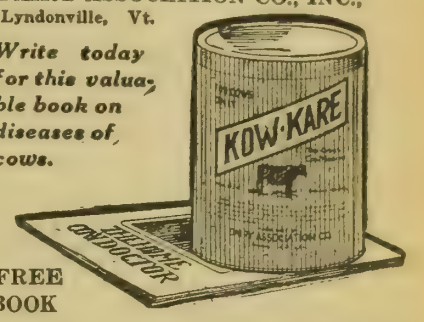
Lyndonville, Vt.

Write today for this valuable book on diseases of cows.



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Write for dates and terms.

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We have issued a convenient little book for the keeping of breeding dates of cattle, hoping to aid the breeder and cattle owner in maintaining accurate records. We will gladly mail you a copy free if you request it. A postal will do.
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USE SHIRE HORSES
Breed your mares to Shire Stallions, good Shire Geldings are in demand. Get some registered Shire Mares
Shire owners, record colts young, fees are double after one year old. Prepare Shires for fall shows, premiums are very liberal this year. For information on Shires write
W. G. Lynch, Secretary, American Shire Horse Association, Tonica, Illinois

Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.

Classified Liners

The direct selling method from producer to consumer, and a clearing house for over 40,000 subscribers. Weekly Liner rates: Single insertion 4½ cents per word; 45c per issue minimum charge. Cash with Order.

Mail all classified copy to Los Angeles Office.

POULTRY

Continued requests are being received by the California Cultivator for varieties of poultry not advertised in our columns. If any of you, our readers and friends, have any you wish to dispose of, send a small advertisement to this office and you will be doing our readers a service as well as yourselves.

Day Old Pullets—Here is your chance to get day old White Leghorn and Ancona chicks, guaranteed at least 90 per cent pullets. We are taking orders fast for October and November delivery. We also have R. I. Red and Barred Rock chicks but do not separate the sex. All chicks are from strictly thoroughbred laying stock and are hatched right and shipped by Special Delivery Parcel Post. Send for prices and get your orders in at once. Orange County Hatchery, Santa Ana, California.

"It Pays to Buy the Best"

BABY CHICKS

Book your order with us now for early Spring Chix—from our own selected flock of 4000 birds. Order now and be sure of your chix. WHITE LEGHORNS ONLY—the Laying Strain.
STEELES' EGG RANCH,
Phone Gardena Exchange 692.
Moneta, California.

Walter Hogan Stock White Leghorn Chicks. December and January chicks come from Winter layers. The cockerels are in the market for early broilers. You can have the chicks out of the brooder house in time to put in a Spring brood. We are hatching the chicks and ship by Parcel Post, safe arrival guaranteed. You can do what others do—make money with poultry. Lyon Hatchery, Gardena, California.

We Are Now Booking Orders for S. C. White Leghorn Baby Chicks, from strong, healthy, vigorous stock. Bred especially for heavy egg production, from two hundred to two hundred and eighty egg strain. If you want strong, healthy baby chicks, place your orders with the Vineburg Hatchery. All baby chicks guaranteed safe delivery. Vineburg Hatchery, Vineburg, California.

White Leghorn Baby Chicks from heaviest laying stock for Spring, 1922, delivery. January prices $5.00 per 25, $9.50 per 50, $18.00 per 100. Special prices 500 and 1,000 lots. Safe delivery live vigorous chicks guaranteed. No money in advance, pay on delivery. Order early chicks now and realize big broiler profits. Established 1898. Must Hatch Incubator Co., 438 Seventh St., Petaluma, Cal.

Caldwell's Bred to Lay Exhibition Reds win in largest shows. Choice breeding stock from greatest producing females. Cockerels, $7.50, $10.00, $15.00. Pullets, ready to lay, $3.50, $5.00, $7.50. Pens and Trios properly mated for a foundation. Special price for November: four $5.00 pullets and $15.00 cockerel, $32.50. Satisfaction guaranteed. T. S. Caldwell, 335-B West Broadway, Glendale, Calif.

It's no wonder so many poultry raisers make a failure of the business. Without any knowledge of raising poultry people will branch out expecting to make a success. By putting in practice the valuable contents of POULTRY FOR PROFIT, $1.00 postpaid, success is assured in the poultry business. Cultivator Publishing Company, Los Angeles, California.

Penn's Quality Barred Ply. Rocks, and Ferris Heavy-egg type White Leghorns. If we knew of better fowls we would have them. Our Rocks led again at Fresno, 9 out of a possible 14 places. They lay. Stock for sale. Booking orders for chix and hatching eggs for 1922 delivery. Golden Rule Poultry Farm, Porterville, California.

Sly's Single Comb Rhode Island Reds again show their quality, winning at San Fernando and Ventura seven first prizes, two silver cups, many special honors and other ribbons. Am offering a limited number of line-bred cockerels at $7.50, $10.00 and $15.00; excellent breeders. Send for yours today. Albert Sly, 1642 Middleton Place, Los Angeles.

For Sale—1200 four weeks old chicks, R. I. Reds and W. Leghorns 40 cents each. Day old chicks every week. Rocks and Reds 19 cents, W. Leghorns 16 cents. Laying hens and pullets all kinds. Fancy Light Brahma baby chicks 50 cents each. P. Cook Chick Ranch, 1717 Valley Blvd., Alhambra.

Baby Chicks from my carefully selected flock of pure-bred S. C. White Leghorns. I am accepting orders now for spring delivery. Make your arrangements early and write for prices and particulars now. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

The Poultry business can be made to pay by following the teaching and practical information given in THE PACIFIC POULTRYMAN, Quality poultry paper of the West. 75c per year, trial subscription, four months for 25c. Seattle, Washington.

Baby Chicks from 227 egg strain of heavy winter laying S. C. White Leghorns. Book your order now for 1922 delivery of guaranteed chicks and hatching eggs. Pullets and breeding stock. Meyer Poultry Farm, Route A, Box 17-C, Modesto, California.

Baby Chicks "well hatched are half raised." Petaluma Incubators produce that kind. They have lots of "Pep." We supply chicks. Catalog free. Petaluma Electric Incubator Co., Petaluma, California.

Black Langshans—Pure blood, $2.50 each. Cockerels, pullets. Francis Rudkin, Fillmore, California.

POULTRY

Baby Chicks—Barred Rocks and Reds 25, $5; 50, $10; 100, $20. We have a hatch off every Sunday. We ship by Special Delivery Parcel Post, pay all charges, safe arrival guaranteed. Order your spring chicks now. Established 1915. Hargett & Son, Route 2, Box C, Compton, California.

Baby Chicks—Booking now for 1922 delivery. Order early. White Leghorns, R. I. Reds. Brown Leghorns, Barred Rocks. Write for circular. Stubbe Poultry Ranch and Hatchery, P. O. Box 67-E, Palo Alto, California.

Hatching Eggs—We are now booking orders for Eggs from our well selected and mated heavy laying stock S. C. White Leghorns only. Pine Tree Poultry Farm, Los Gatos, California.

White Leghorn Baby Chix from Petaluma's heaviest producing stock. We guarantee safe arrival. Literature on request. Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

Barred Plymouth Rocks — "Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Bodden, Los Gatos, California.

Hudson White Leghorns: Cockerels from 200 egg hens. Official records made in five egg-laying contests. Hudson Ranch, Escondido, California.

Success in business is attained by experience and knowledge. The poultry business can be made to pay by following the teachings and information contained in POULTRY FOR PROFIT, $1.00 postpaid. Cultivator Publishing Company, Los Angeles, California.

Anconas, Our Sixth Year—Cockerels, single birds, $3.50 and $5.00. Satisfaction guaranteed. A. S. Wilkinson, Winton, California.

Watch Us Grow: Fall chicks, Rhode Island Reds, B. Rocks, White and Brown Leghorns and Anconas. E. W. Allen, Campbell, California.

TREES

For Sale—Walnut Trees — Erhardt and Placentia grafted on Northern Black Root—4 to 6 feet high, $1.00; 6 to 8, $1.25; 8 to 10, $1.50; Placentia, 12-14, $2.00; Erhardt, 8-10, $2.25; 10-12, $2.50. Borely and Wilkins, Puente, California. Phone 162.

Nursery Stock at bargain prices. Prune 10c each; grafted walnuts $1.00 each; pears 20c each; Black caps $20.00 per 1,000; other stocks at bargain prices. Submit your want list, and send for planters list. 31 years in business. Carlton Nursery Co., Carlton, Oregon.

For Sale—Walnut Trees—Placentia and Eureka grafted on black root—4 to 6 feet in height, $1.00; 6-8, $1.25; 8-10, $1.50; Placentias 12-14, $2.00; Eurekas, 10-12, $1.75. La Puente Walnut Nursery, Puente, California. Phone 103.

For Sale—Placentia Perfection and Eureka grafted walnut trees. Prices 1-3 off from last season. Our stock is grafted from choice grafted orchards. See our stock before buying. The Walnut Nursery, Whittier, California. Phone 6294.

For Sale—Grafted walnut trees, also citrus and deciduous trees. Order now for 1922 delivery. Get my prices. Ketscher's Nursery, 1101 E. 4th Street, Santa Ana, California. Phone 572-W.

Reliable Trees and grapevines at a fair price. Write us for price list. We ship on approval. J. F. Miller & Sons, Healdsburg, Cal.

Trees—Tuscan Kling peaches, Sugar and French prunes, five to eight foot trees $35.00 per hundred. Johnson's Nurseries, Almaden Road, Los Gatos, California.

For Sale—Grafted Walnut Trees, Placentia Perfection and Eureka. These are well rooted and first class in every way. Rivera, California, C. E. Bullock.

For Sale — ATHEL OR EVERGREEN TAMARIX. Best tree for immediate windbreak and shade in hot dry localities. Leonhardt Swingle, Indio, Cal.

For Sale—Fruit Trees, grapevines, unrooted grape cuttings, etc. Write for price list. Burke's Nursery, Lodi, Cal.

For Sale—One and two year old Wonderful Pomegranate trees. fine stock. J. W. Irwin, Lindsay, California.

For Sale—California Black Walnut seedlings, 1-3 feet. Ripon Nursery Company, French Camp, California.

Citrus Nurseries, Murphy Oil Company, East Whittier California. Selected stock for sale; inspection invited.

MISCELLANEOUS

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

For Sale—Orchard Heaters—5,000 7-gallon "Citrus" Heaters, 500 "Hislop" Heaters. Practically as good as new, having been used but very little. Will sell at bargain prices. Call or write. Charles C. Chapman, Fullerton, California.

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HORTICULTURAL PRINTING

Catalogues and Booklets, office forms and correspondence stationery for the nursery, seed and florist trade; half-tone cuts of many standard plants. Correspondence invited. The Kruckeberg Press, 236 Court St., Los Angeles.

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FOR SALE

20 acres Improved, 1½ miles from State Highway:
17 acres in 7 yr. old Almonds.
2 acres in 7 yr. old Apricots.
1 acre around buildings.
6-room house, garage, shop, barn, good well. Property fenced on three sides.
This place is a good buy at $10,000. Owner is forced, by poor health, to sacrifice.
Write us for the price. We are ashamed to publish it. Good terms. This is a dandy.
NELSON REALTY CO.
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WE WANT "GO-GETTERS"

Sutter Basin is ready for "Go-Getters." It is a practical farming project in crops today. Deep, rich soil with irrigation and drainage system, river and rail transportation. In the heart of the Sacramento Valley. Very liberal terms to men who know how and will work. Write today. Sutter Basin Company, California Fruit Building, Sacramento.

Avocados—42 acres choice avocado land in frostless belt, with abundance of water, on reasonable terms. Other small tracts at very reasonable prices. This must be seen to be appreciated. C. M. Jay, 718 Washington Bldg., Los Angeles, Cal.

For Sale: 850 acres improved and equipped farm and pasture ranch. Seventy-five cows and modern dairy outfit. Unexcelled market, social and climatic conditions. A bargain. Address the Cultivator or Superintendent Indian Hot Springs, Eden, Arizona.

For Sale—Seventy Acre DAIRY RANCH. 36 acres alfalfa—balance ready to plant. Cheap water, house, barn, separator house. Price $300.00 an acre. Good terms. John E. Wright, Route B, Box 104N, Visalia, California.

Paradise Your Future Home—The district with the greatest possibilities in the state for fruits, nuts, berries and poultry. Inquire C. H. Nielsen, Paradise, Butte County, California.

For Sale—40 acres rich silt land close in. Very best for grapes or alfalfa. Price $6,000; easy terms. Chas. McNeely, Alpaugh, California.

Mountain Land For Sale—Four hundred acres, good fruit land adapted to apples and pears, timber, water, good house and barn. E. S. Phillipps, Sultana, California.

For Sale — Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

DUROC-JERSEYS

For Sale—FIVE REGISTERED DUROC-JERSEY GILTS farrowed March 10, 1921. Sired by Ace of Pathfinders and out of a Great Wonder I Am sow. I also have one boar out of same litter. One registered boar farrowed March 27, 1920, sired by Top Orion and out of a Great Wonder I Am sow. He will weigh about 625 pounds. These animals are fine in every respect. Chester Irish, Norwalk, California.

Weanling Boars and Gilts by Pathfinder Wonder (Great Wonder I Am ex an 800 lb. Pathfinder sow) for $10 each. Bred sows and gilts. Derryfield Farm, Capital National Bank Bldg., Sacramento, California.

Greenwood Farm Durocs — Moderate prices on bred gilts and weanling boars. Select individuals. Most popular breeding. H. C. Witherow, Mgr., Live Oak, Sutter County, California.

Boyana Big Type Durocs — Breeding stock, priced right for sale. Inquiries invited. Satisfaction guaranteed. J. Boyd Harrold, Dixon, California.

Big Type Durocs—Better Durocs at right prices. Harvey M. Berglund, Dixon, California.

Winsor Ranch Durocs—The best of stock at reasonable prices. BONITA, CALIFORNIA.

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Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Calac Orchards, Martinez, California.

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Lendorris Ranch Polands — Big type Poland Chinas of all ages for sale. The kind that makes weight quickly. Weanling boars and gilts sired by Lendorris Liberator out of Lendorris Liberty Bond sows. Now ready for delivery. W. L. Haag & Son, Hanford, California.

Big Type Poland China open and bred gilts, young and service boars and young pigs. Your letter expressing your wants will bring a quick reply. California Swine Corporation, H. A. Patten, Manager, Route 2, Box 38, Escalon, California.

Big Boned Poland Chinas—Bred gilts and young boars priced to sell at once. Young stock, either sex, for sale at all times. Bassett Bros., Hanford, California.

MACHINERY

For Sale — Rebuilt windmills, tanks, pumps, cylinders. Why pay more. We make galvanized tanks, 400 gallons, $16.25; 600, $26.25; 1000, $36.25; 2000 capacity, $48.25. New irrigating pipe, all sizes for less. Why pay more? Demmitt Co., office 120 N. Main, L. A. Phone 15191.

For Sale Reasonable—1 Holt 75—Schmeiser Leveler—2 Heavy Davis Disc Plows—Trap Wagon—Holt 18—8 ft. Double Disc Harrow—1 Five Disc Plow—Case Thresher 18x36. All in good condition. Clarence E. Newman, Chowchilla.

For Sale at Bargain Prices—One 750 gal. heavy steel oil tank and wagon; one six foot land leveler; one International feed grinder; one four-gang Stockton plow. Drew Carriage Co., Ontario, Cal.

For Sale—One C. L. Best 12-25 Tractor, in fine shape. Might take as part pay span of good mules or horses. Terms to responsible party. Address Box 279, Sawtelle, California.

Heavy Yuba No. 99 Disc Plow, five 24 inch discs, $200.00. La Mesa Country Club, La Mesa, Calif.

SEEDS AND PLANTS

ROOTED VINES

For Sale — Alicante-Bouchet, Malaga, Thompson Seedless, Zinfandel and Emperor rooted vines. These vines are guaranteed A No. 1, true to name; certified and from clean producing vines. We are also booking orders for cuttings. CHAPMAN & SON, Modesto, Calif. P. O. Box 906; phone 663.

Sweet Clover Seed for Sale—Buy direct from the producer and save money. Fine clean seed 15c per lb., cheaper rates on 100 lb. lots. Order early for fall seeding. Write for samples. Address George Forest, Standish, California.

Grape Vines—50,000 Thompson's, 50,000 Wine varieties; Zinfandel, Mission, Mataro, Alicante, 10,000 Cory's Thornless blackberry. Write or call. We can interest you. Sylvan Nurseries, Lincoln Highway, Roseville, California.

Strawberry Plants for Sale—Extra strong "Happy Valley" Marshall plants for fall planting vigorous plants that will insure best results. $1.00 per hundred, $8.00 per thousand. Address Jack McCrory, Olinda, Shasta County, California.

For Sale—Sturdy Plants of pansies, violets, stocks, snapdragos, sweet williams, cosmos, baby primroses, foxglove, canterbury bells, columbine, verbena. Postpaid, 50c per dozen. The Hopkins Nursery, 163 S. Hartwick Ave., Eagle Rock, Cal.

Strawberries Six Months in the year. Plant Everbearers, Superb, Progressive; $2.00 hundred. EVERBEARING RASPBERRIES six $1.00. Inspected. Fred Leissler, Route 6, Seattle, Washington.

McNeely's Hulless Barley — Propagated and grown at Alpaugh, Cal. The kind that brings you big returns. Any amount you want. Chas. McNeely. Alpaugh, California.

For Sale—Brandywine Strawberry Plants, fifty cents per hundred; Banner, one dollar, here. E. A. King, West Fourth St., Riverside, Calif.

Cory Thornless Blackberry Extra Large Plants, ready; 12 $2.40; 24 $4.40 postpaid. Illustrated price list. Write Chas. E. Mortenson, Route 1, Lodi, California.

500,000 No. 1 Rootings, Thompson, Malaga, Emperor, Muscat, Sultana and Carnichon (Wine Grapes.) Get our prices before buying. Box 501, Fowler, California.

Alfalfa Seed — Certified Hairy Peruvian, Smooth Peruvian, Common. Write for samples and prices. Delta Seed & Feed Co., Yuma, Arizona.

Certified Strawberry Plants, Improved New Oregons, Gold Dollar and Progressive Everbearing. G. H. Mitchell, Canby, Oregon.

CATTLE

Guernseys — Grape Wild Farms—Berkshires—Young bulls, from calf age up to 16 months old, of May Rose breeding and out of A. R. cows. Bred sows and gilts, service boars and pigs of both sexes for sale. Grape Wild Farms, Escalon California. A. B. Humphrey, Proprietor

Berylwood Stock Farm—Breeders of registered Holstein cattle and Duroc-Jersey swine. Every cow an A. R. O. and T. B. tested. Bulls and females for sale J. W. Snodgrass, Hueneme, California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1,000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Polled Herefords and Durocs — Diablo Stock Farm, G. W. Emmons, Prop. Danville, California.

Some Choice registered Holstein heifers and bulls of serviceable age for sale. J. W. Scudder, Escalon, California.

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Wanted—Walnuts Meats and cull walnuts. We solicit culls for cracking only, paying cash. Fred L. Mitchell & Son, 214 French St., Santa Ana, California. Phone 551-M.

Want to Hear from owner having farm for sale; give particulars and lowest price. John J. Black, 116th Street, Chippewa Falls, Wisconsin.

Wanted to Buy—Any kind of dried fruit, honey or walnuts. Mail samples to W. A. Collins Co., Box 397, Santa Ana, California. Phone 71.

Cash Buyers want Western farms. Will deal with owners only. Write R. A. McNown, 370 Wilkinson Bldg., Omaha, Neb.

We Will Buy your Calla Lily roots. If you have 100 or more, write us. Sevin-Vincent Co., 512 Washington St., San Francisco, California.

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Geese—Now is the time to order McNeely's Mammoth Geese, $5.00 each, as many as you want. Chas. McNeely, Alpaugh, California.

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Your inspection of our choice flocks invited.
Egg orders accepted for spring delivery. For further particulars address Bronze King Mountain Farm, Calistoga, California.

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Turkeys—Goldbank Strain—Prize winners, till holidays. Toms $15, hens $10. 5 mo., average weight 18 lbs. A. J. Gambonini, Marshall, California.

"Goldbank" Strain—Giant Bronze turkeys. A few choice toms for sale. Write for prices. J. E. Mintun, Box 145, Livingston, California.

Bourbon Red Turkeys, Buff Orpingtons. The Ferris Ranch, Reservoir Street, Pomona, California.

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MEASURING AND MARKETING TIMBER

The department of agriculture at Washington has for mailing Farmers' Bulletin 1210, "Measuring and Marketing Farm Timber." It applies primarily to Eastern woodlot sections, but California is increasing its production of cordwood and even of finish lumber, that is, we mean now production on the small farms rather than in the great commercial timber sections. For such as are interested this bulletin of 60 pages will have a fund of valuable information.

The seven counties organized in the North Bay Counties Association have formally adopted constitution and by-laws. The objects of the association are to engage in civic, promotion and development work in Del Monte, Humboldt, Mendocino, Lake, Napa, Sonoma and Marin Counties.

Legal Queries

Louis B. Stanton, attorney, 343 Wilcox Building, Los Angeles, will answer legal queries in this department.
Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 317 Central Ave., Los Angeles.

Trees on Line

My neighbor has walnut trees growing very close to the line, which draw water from my property. Can I pick up the walnuts that drop on my line? Can I shake the limbs off and let them fall on my land? Can my neighbor shake the branches overhanging my line and descend and pick up the walnuts falling on my land without my consent? Can I cut or saw the limbs off that are over my line?—Subscriber, Fullerton.

It has been held by the highest court of this state that overhanging branches, in so far as they are on or over the land of a party, belong to that person, he cut cut them off or trim them at his pleasure; that in fact such branches growing over a party's land are his property, which he may claim as against the owner of the tree. This being the case, you have the undoubted right to shake the limbs overhanging your line, pick up the walnuts thereon, or cut off those limbs, and convert them into stove wood. Your neighbor, who owns the trunk of the tree, has no right to pick these nuts, cut the limbs, and certainly has no right to descend upon your land and pick up the nuts falling thereon or in anywise interfere with any exercise of any property right in these nuts or branches. It may be stated that the courts in other states have come to different conclusions as to these matters and it is possible that the court in this state might under the peculiar circumstances of the decision referred to make a different finding. This answer is given on the law as it now seems to stand.

Liability of Stockholder

To what extent can a party be held responsible for liabilities of a stock company as a stockholder?—Subscriber, Tulare.

Each stockholder of a corporation is individually and personally liable for such proportion of all its debts and liabilities contracted or incurred during the time he is a stockholder as the amount of stock or shares owned by him bears to the whole of the subscribed capital stock or shares of the corporation.

Liability for Horse

I hired out as a farm hand and agreed to bring my two horses with me, for which I agreed to make no additional charge. My employer's horse kicked one of my horses, causing a severe wound, which the veterinarian says will never heal and it will be necessary to kill the horse. Have I any claim against the employer for the value of the horse?—Subscriber, Orland.

In such a case, it would be necessary either to show that the animal which did the injury was vicious and accustomed to do such kicking and that the owner knew of such propensity or that the injury was attributable to some neglect upon the part of the owner. Even if the animal is merely of a mischievous disposition, of which the owner is well aware, it would probably render him liable, where he failed to inform you of such propensity.

Right of Survivorship

A deed has been made to myself and wife. Can a clause providing for the right of survivorship be now inserted in the deed or would a new deed be necessary?—Subscriber, Loomis.

The insertion of any such clause in the deed would constitute a material change and might invalidate the transaction. In order to constitute a joint tenancy, it would be necessary to deed this property back and have a new deed made providing therefor.

* * *

When a joint deed is made without reference to the right of the survivor, can either owner without the consent of the other in any way convey his title or interest to a third party? Is the property not vested in both with the right of survivorship whether mentioned in the deed?—Subscriber, Delmar.

The necessity for the words "right of survivorship" has been much questioned. As a matter of safety, it is always best to have the words inserted. Either party in a joint deed can, of course, convey his interest in the property to a third party, but such third party takes in the property only the interest which his grantor would have; that is to say, an interest in the property during the life of his grantor. Upon the death of such grantor, the whole property would pass to the survivor as joint tenant and the transferee would be divested of his interest. It is probable that in such an instance if homestead was filed on the property, it would preclude any such transfer.

Homestead

Property is held by husband and wife as joint owners with right of survivorship. Does the declaration of homestead add anything to this form of tenancy and is the declaration attached hereto valid?—Subscriber, Delmar.

The filing of the declaration of homestead probably does not make any material difference, in the particular instance stated, other than to protect the interest in the property against the claims of any creditors up to the value of $5000. The form of declaration accompanying the question was incorrect in that it did not state the value of the property.

Loan to Ex-Service Men

Is the loan to ex-service men now available? If so, can it be had to start business of any kind, such as a garage, pool hall, or other line? Where is it necessary to apply for the loan? Can the money be used for business elsewhere other than in California?—Subscriber, Inyo.

The purpose of the present act is well defined in a section thereof, which states that the object of this act is to furnish to veterans the opportunity to purchase farms, homes, and homesites, and the administration of the provisions of the act is vested in the Veterans' Welfare Board. The activities of this board are limited purely to real property. It has offices at different points throughout the state, but a letter addressed to Sacramento will undoubtedly be forwarded to the proper office.

* * *

Where can I apply for loans to ex-service men? When will they be available?—Subscriber, French Camp.

A letter addressed to the Veterans' Welfare Board, Sacramento, California, will, no doubt, bring the required information.

Responsibility for Son's Act

While I was away from home, my 15 year old son without instructions from me, felled a tree and broke two wires. Can the power company collect from me for interrupted service and repair labor?—Subscriber, Anaheim.

A father is not responsible for the wrongs done by the son, unless through some means it can be shown that the son was acting as the agent of the father or in some way that he ratified the act of the son. Therefore, it would appear that under the facts stated, you could not be held responsible for the damage caused.

DEVELOPMENT OF TUBERS IN THE POTATO

How do potatoes grow?
Why do some vines produce many tubers and others only a few?
Do big seed pieces produce better potatoes than small pieces?
When does the tuber begin to form?
When does moisture have the most effect on the production of potatoes?
What is the relation of soil to potato production?

These are a few among many questions which have been asked about the growth and yield of one of America's largest and most distinctive crops, and which former observers have been able to answer only incompletely. Experts in the bureau of plant industry have conducted a series of experiments in potato growth, the results of which are published in Department Bulletin 958, "Development of Tubers in the Potato," which has just been issued. The information contained is of interest not only to the plant physiologist but also to the practical grower, as a knowledge of the relation of the setting and subsequent development of tubers of the potato may to a certain extent be put to practical use.

Tuber formation begins in general at about the end of the period of flower bud development, although this is not in all cases an exact criterion. Experiments showed that the number, as well as the size, of potatoes in a hill increased for several weeks after the first potatoes were large enough to dig. A small increase in the weight of tubers was found to occur even after the vines had been killed by frost. The maximum rate of growth of the tubers was found to occur about the last of August or first of September, approximately 80 days after planting.

An interesting development of the experiments was that the number and weight of tubers per hill were found to be influenced by the size and kind of seed. Whole potatoes used as seed yielded heavier than half potatoes, and these more than quarters, and the larger the seed piece the greater the yield per hill. A whole potato used as seed yielded more than half or quarter potato of equal weight.

The experiments showed that apparently light soils are better for potatoes than heavy soils. The lowest production of tubers, with respect to both number and weight per hill, was on the heaviest soil; the highest numbers and yields were produced on the lightest soil. The department experts deem it possible that these results might be modified somewhat under different climatic conditions.

Two year tests with irrigation indicate that the early application of water before tuber formation had started resulted in an increase in the number of tubers as well as in the weight per hill. Late irrigation actually increased the weight but made little difference in the number of tubers per hill. The irrigation experiments were not carried to a final conclusion but indicate that each application of water at almost any period in the growth of the plant, provided excessive quantities are not used, may be expected to produce an increase in the weight of the crop, but that little or no increase in the number of tubers is likely to result from irrigation after tuber formation is well started.

The bulletin contains an interesting description of the tuber bearing parts of potatoes and their method of growth. It may be obtained free on request to Division of Publications, U. S. Department of Agriculture, Washington, D. C.

Plans are being perfected at the headquarters of the California Tuberculosis Association for the Annual Christmas Seal Sale. Since California had its first organized sale in 1914 when a million seals were sold the sale has rapidly increased until last year 20,000,000 were sold.

The Brooklyn packing plant of the California Prune & Apricot Growers is to be doubled in capacity and size. Water shipments of bag prunes are received at this plant for packing and processing preparatory to Eastern and European distribution.

Canned goods can now be sent from Pacific coast ports to England for 90 cents per hundred.

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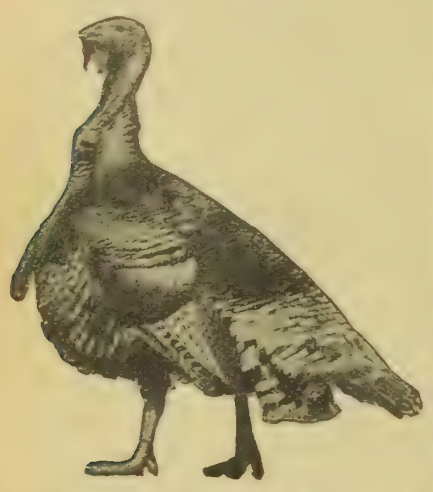

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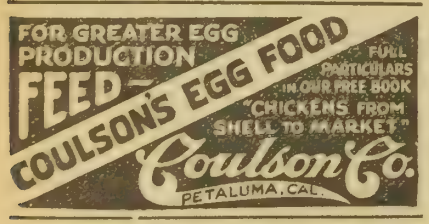

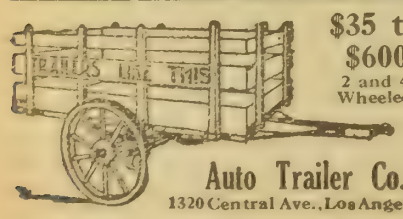

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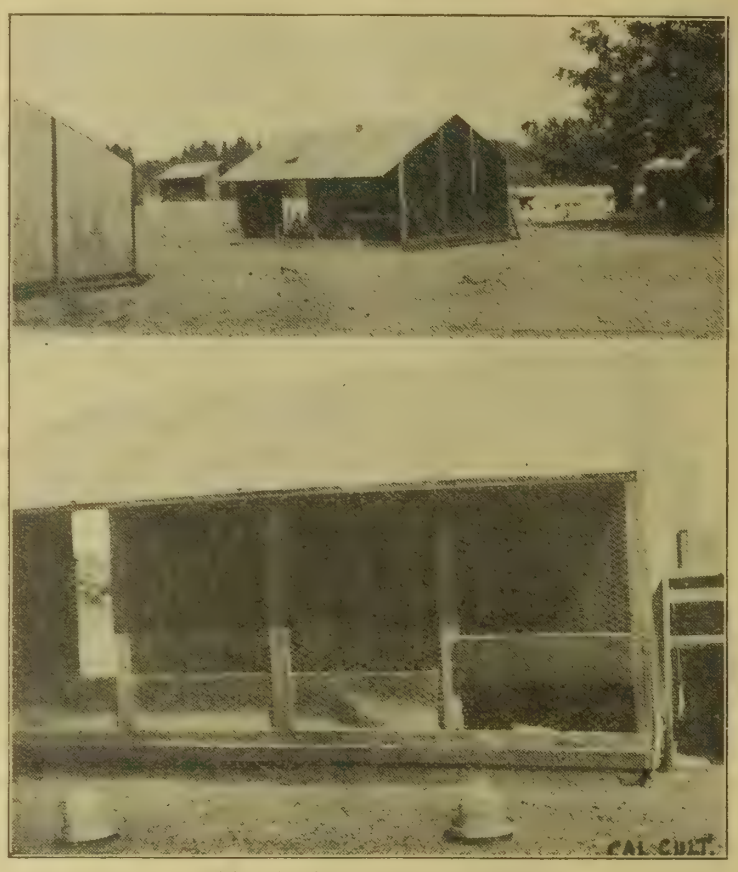
A Cheap Poultry House

By Jean A. Koethen

POULTRYMEN who wish to cut down the cost of housing their flocks will be interested in these two pictures taken on the ranch of R. J. Major at San Gabriel. Figure 1 shows the type of colony house Mr. Major has adopted and the arrangement of the houses on his five-acre ranch.



Either Laying House or Brooder

Fig. 1. Colony laying house on Major Ranch, San Gabriel. This house accommodates 75 cens and cost $15.
Fig. 2. The same house arranged for brooding accommodates 250 to 300 chicks. The chicks have all the sunshine there is and a stove for night and dark days.

These houses are light structures of 1 by 3, covered with tar paper. Each house is 12 feet long by 8 feet wide, 6 feet high in the center and 4 feet high at the sides, and holds about 75 White Leghorn hens. The south side of the house is open, and the roof on that side is extended to give protection from sun and rain. A door at the end admits the caretaker and provides additional ventilation in hot weather.

These houses were covered in the beginning with second grade paper, and most of them have been in use three years without requiring any considerable repairs. As their original cost was only $15 apiece, Mr. Major is well satisfied with the experiment.

The five acre ranch is divided into yards 156 by 156, with six houses and 450 hens to each yard. As the houses are in rows the number of steps which must be taken in feeding and cleaning is reduced to the minimum, and the entire flock of 2,000 hens is cared for in about two hours a day.

Double Purpose Housu

But this type of colony house is particularly well adapted for brooding, and Figure 2 shows one arranged for this purpose. Pipes are run from the brooder stove at the right end through the house just under the droppings board, and the chicks are brooded on straw under the pipes. The one fault of this arrangement is that the chicks are too much inclined to pile up at one end, but this could probably be prevented by the use of a felt or flannel hover. Six of the houses, all in one yard, are fitted with stoves and used for brooding. When the chicks outgrow them they are spread out among more houses.

A good many poultrymen are adopting this system of colony houses because of the cheapness and are finding that their hens are just as healthy and lay just as many eggs as when housed in the more expensive long laying houses.

Poultry Queries

Conducted by Jean A. Koethen

Hens Do Not Lay

My Black Minorca and R. I. Red hens look healthy, have plenty of greens, sour milk, three kinds of grain and a good house and large yard, but have not laid for four months. What is the matter?—Subscriber, Laton.

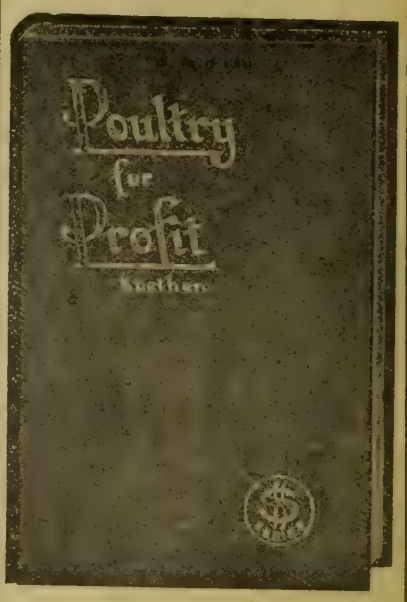
You do not say how old your hens are nor whether or not they are through the molt. Maybe they are too old to lay in the fall, and it is very probable that the R. I. Reds are too fat. If you are giving three kinds of hard grain and no mash the chances are they are all too fat to lay well. Hard grain alone puts fat on most hens. If you will keep a good commercial mash before them and cut down the scratch feed to a quart a day for 20 hens, making the scratch at least half wheat, I think you will soon see a difference. You do not say what grains you are using. If milo is used to the exclusion of other grains or is more than half the grain ration, that alone would explain the lack of eggs. Most poultrymen find they cannot use much milo in hot weather.

White Minorcas

Will you kindly inform me if White Minorcas lay white eggs and if the flesh is dark looking like that of the Black Minorca, also what heavy hens in California lay a white egg. We are eastern people just settled here and everything is strange to us.—Subscriber, Corning.

All Minorcas, Black and White, lay large white eggs. Those who keep Minorcas think very highly of them as both egg and meat producers, but they have not the place as market birds that R. I. Reds, Wyandottes and Plymouth Rocks have. If you are

Poultry Can Be Made Profitable



Making use of information gathered from experienced poultry writers who have been guided by their practical experiences will always result in profit from poultry.

¶ ¶ ¶

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taking up commercial egg farming you are practically obliged to keep White Leghorns. No other breed can compete with them for this purpose and no other is kept on the big egg farms. If you are general farmers and want a flock of hens for you own use with a few eggs and fryers to market when prices are high you will make no mistake in choosing R. I. Reds. They are by far the most popular fowl in this state, next to White Leghorns, have been bred for egg production till many are heavy producers, and hens and fryers bring the highest market price.

Mating Turkeys

Will ten gobblers running with 100 hens without separation into pens fight to such an extent as to cause infertility?—Subscriber, Turlock.

Experienced turkey breeders say they will and prefer to keep their breeders in separate pens, ten hens and one tom in each pen. One man finds this plan successful: He keeps his hundred hens in one large yard and his ten toms in another, and allows two toms to run with the hens each day, changing every day, and maintaining a regular succession.

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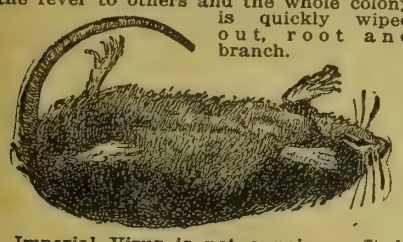

Imperial Virus is not a poison. It is entirely harmless to humans, poultry, stock, pets, etc., and is therefore, the only safe method by which houses, farms, factories, warehouses, stores, etc., can be rid of these pests.

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Send $1.00 today, (bill, money order, check, etc.) and you will receive the two $1.00 bottles, post paid. If more convenient, send no money; just your name and address to the Imperial Laboratories, Room 602, 2110 Grand Ave., Kansas City, Mo. You can pay the postman $1.00 and a few cents postage when the two bottles arrive. Imperial Virus is backed by an Iron-clad guarantee to do the work to your entire satisfaction, or your $1.00 will be refunded any time after 30 days without question or quibble.

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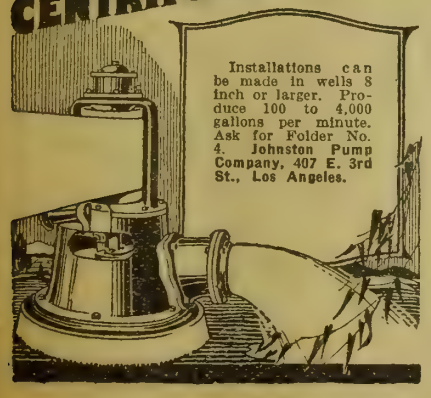
Installations can be made in wells 8 inch or larger. Produce 100 to 4,000 gallons per minute. Ask for Folder No. 4. Johnston Pump Company, 407 E. 3rd St., Los Angeles.

The Encanto subscriber who asked how many hens should be mated to one tom will please note that ten hens are generally allowed. I know of no breeder who gives his toms more than ten, and some prefer eight or nine.

Roupy Pullets

About three weeks ago I purchased a dozen Leghorn pullets four months old and seemingly in perfect condition. Now roup has broken out among them. I have saturated their heads two or three times daily with a permanganate of potash solution, greased them well with carbolated vaseline and given them sulphur in the mash in the ratio of 1 to 20 but they do not respond. They are in the same yard with my old hens which are as vigorous and healthy as ever. Do you think I should separate them, or are the old hens strong enough to throw off the infection if it should attack them?—Subscriber, Madera.

I think your pullets are suffering from the change from their former quarters to their present environment. Even though your houses were cleaner and more comfortable than the one they came from there might be something in the change that would give them a cold. For instance, if they have been crowded in a small coop where they were very warm at night and you put them in a large house where there was a good deal of air space, the change from more to less heat and from less to more ventilation might at this season cause roup. A change from a higher to a lower elevation or from a protected place to one where they were exposed to a strong wind might produce the same result. If this hypothesis is correct your main effort must be to make them as comfortable as possible. Put them in the warmest, sunniest yard you have. If they are not protected from wind during the day give them some protection. See that their house is as warm as is consistent with good ventilation. Feed plenty of green and a substantial ration with a good proportion of corn in it. For treatment, try this spray which is recommended by Dr. Sanborn: Extract of witch hazel, 4 tablespoons; liquid carbolic acid, 3 drops; water, 2 tablespoons. Spray mouth and nostrils twice a day, squeezing the bulb five times for each nostril and twice for the mouth. Greasing the head will do more harm than good because it makes the bird chill more easily, and sulphur is a remedy for chicken-pox, not for roup. The old hens are not likely to take the disease from the pullets, but the pullets will do better by themselves.

Rheumatic Turkeys

My young turkeys four and six months old are troubled with knots and swellings at the knee joints and walk as if their knees were out of joint. The birds eat well and fly up to roost, but their knees and feet seem to grow worse.—Subscriber, Madera.

Turkeys that run on damp grass or ground or are exposed to chilly winds sometimes contract rheumatism, as these birds evidently have done. Removal of the cause is the best cure. Keep them in the driest, sunniest place available and paint the swollen joints two or three times a week with tincture of iodine.

May Be Ticks

I have just bought a ranch, poultry and all, and would like to know how to rid hens and house of a bug that looks like a grain of sand when it is young and like a bedbug when it is grown. When small they seem to stick tight or bury themselves in the skin, and they work on the hens at night. The hens are pale and do not lay.—Subscriber, Fresno.

I am afraid these bugs are ticks, which look like bedbugs, are, in fact, the bedbug of the poultry house, and sometimes attach themselves to the body of the bird. Their home is in the cracks, under roosts, etc., in the house, and you will have to work hard to clean them out. After cleaning out all droppings thoroughly, sweeping down dust and cobwebs, and hosing thoroughly, paint every bit of wood, inside and out, with a strong solution of crude carbolic acid, 1 part carbolic to 4 of kerosene, or even stronger. Do this not once but three or four times in succession, several days apart. Clean out all nest litter and paint inside of nests, and if the floor is dirt, clean out several inches and bring in clean sand. You may be able to get rid of the ticks on the hens by greasing well with lard or with lard and sulphur mixed into a paste. If you do not, try touching each one with a swab dipped in undiluted lysol. This is very poisonous if taken internally and must be handled with care.

POULTRY SHOW AT SANTA ANA

Poultry fanciers of Orange County are announcing Southern California Poultry Show at Santa Ana, December 13-17.

Activities of poultry producers during the last few years have been along the line of cooperative marketing associations and giving greatest attention to the commercial side of poultry. However, it goes without saying that there will always be lovers of the pure bred and fancy or ornamental breeds.

BROODINESS CAN BE BRED OUT

At the Massachusetts experiment station, where a detailed experimental study of broodiness has been made, it was ascertained that previous to the practice of selection the average hen in the flock was broody 3.88 times a year. After painstaking selection was practiced for five years, this tendency to broodiness was reduced so that the average egg producer in the flock developed broodiness only 0.36 times a year. A study of the correlations between broodiness and egg production shows that pullets that are very broody tend to lay relatively few eggs between their broody periods.

THE HEN HAS IT ON MA

The coal-oil light's a burning bright;
(It will, sometimes, when it feels right);
Pa sets there reading, slick as sin,
The latest poultry bulletin;
Then, half to Ma, and half to me,
Pa ups and speaks: "I see," says he,
"As how correct illumination
Will make hens lay like all Creation;
I've thought it out; the help's all hired;
I guess I'll have the henhouse wired."
Ma stops and peers and sews away,
Does Ma, and then I hear her say:
"I wisht I was a blamed old hen;
Maybe they'd wire the homestead, then!"
—Cuyahoga Co. (Ohio) Farm Bureau News.

SUGAR BEET PRODUCTION

The sugar beet industry of the United States produced more than 1,000,000 tons of sugar, and the 106 factories, 97 of which were in operation in 15 states, paid American farmers more than $99,000,000 for their beets in 1920.

In a comprehensive new bulletin, No. 995, "The Sugar Beet Industry in the United States," the United States department of agriculture says that almost any fertile soil capable of producing good yields of other crops will, if properly handled, produce good sugar beets. This statement, however, is restricted by considerations of climate, moisture, and topography as related to the question of producing enough beets of the requisite sugar content within reasonable hauling distance to maintain a sugar beet factory.

The bulletin reviews the history of the sugar beet industry from the first mill, built in 1870 at Alvarado; analyzes soil, climatic and topographic requirements, and deals at length with the necessary equipment, best methods of planting and cultivation, the important relation of the sugar beet to the livestock industry, the management of parallel and rotating crops, the labor problem, insect and disease enemies of sugar beets, and the business of selling beets to the sugar manufacturers. "The successful production of sugar beets on any farm depends to a great extent upon the temperament of the farmer and upon his attitude toward the production of this crop," says the bulletin, adding that the man who handles cows, especially dairy cows, is more inclined to take up the growing of such an intensive crop as sugar beets and is more apt to succeed in this line than the grain or forage crop man.

A list of more than 50 department publications on different phases of the beet sugar industry is included in the bulletin, which may be had free upon application to the Department of Agriculture, Washington, D. C.

Byron Jackson Service

WHEN you buy a Byron Jackson deepwell turbine your purchase includes Byron Jackson service.

A service built on an engineering foundation that goes back to the very beginnings of irrigation in the west.

Starting in the factory-testing department, this service accompanies the pump through the installation and down through the years of operation by means of a state-wide system of service cars.

Your water development problem is assured prompt and expert attention in our engineering department

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Because: they press so snugly and firmly against the cylinder walls at *all* points that gas cannot waste past them. All of the fuel is compressed into power. And they do this satisfactorily through thousands of miles of service because they are cast *individually* from a special gray iron that retains its elasticity and tension under the stress and strain of the hardest usage. They prevent carbon accumulation too, and thus remove another cause of power loss.

THE GILL MANUFACTURING COMPANY
8300 South Chicago Ave., Chicago, Ill.

Los Angeles Markets

Los Angeles, November 22, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price, 51 cents.

CHEESE

Brokers' prices:
California flats, 30@32.

EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 66; case count, 57; pullets, 50; pewee pullets, 43.

POULTRY

Price to producers: Hens, 25; colored, 32; broilers, 40; roasters, 28; old roosters, 16; fryers, 30; ducks, old, 20; ducklings, Pekin, 3½ up, 28; others, 28; geese, 28; turkeys, live, young tom, 34; dr., 40; old, live, 29; dr., 35; hens, live, 34; dr., 40; squabs, 55@60.
Belgian hares, 12@17; old, 8.

LIVESTOCK

Los Angeles, Nov. 21.—Weighed and delivered off cars without food or water:
Hogs (hard grain fed), 125 to 175 lbs., 8.00; 175 to 225 lbs., 8.50.
Cattle (on foot, gross weight): Steers, good, 6.50; medium, 6.00; cows, good, 5.00; medium, 4.50; bulls and stags, 3.00; calves, 125 to 150 lbs., 8.00; 150 to 225 lbs., 7.00.
Sheep: Ewes, 3.50@4.00; lambs, 7.00@7.50.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, November 21, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.
Potatoes: Market steady. Lugs, mostly 1.00@1.25. Stocktons: Burbanks, per cwt., best, 2.50@2.75; poorer, low as 2.00: Idahos: Russets, 2.20@2.40; rurals, mostly 2.00; baking stock, Burbanks, 3.00; russets, 3.25. Sweet Potatoes: Market weak. Locals: No. 1, mostly 75@90; No. 2, 50@60 lug.
Onions: Market weak on poor stock, steady on good stock. Stocktons: Per cwt., White Globes, best, cold storage stock, mostly 5@5.50; other whites, 4.50@5.00; yellows and browns, 4.00@4.25; per lug, whites, best, 1.50@1.75; poorer, 1.35@1.50; browns, 1.25@1.50. Local: Spanish, sacked, per cwt., 4.00@4.50 Garlic, 7@10.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock, November 21, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.
Beans: Demand moderate, market stronger. Per lb., Kentucky Wonders, mostly 8@10; green pods, 7@8; limas, market firm, 9@10.
Bunched Vegetables: Supplies increasing. Per dozen bunches: Beets, carrots and turnips, 40@45; radishes and parsley, 15; spinach, 25.
Cabbage: Market stronger. Per field crate, mostly 1.75@2.00.
Cauliflower: Market stronger, 1.75@2.00 cr.
Celery: Market strong, per cr., 3.50@4.00; poorer, 3.00@3.25.
Cucumbers: Market steady. Locals: Lugs, 1.00@1.25.
Egg plant: Lb., 3@4.
Lettuce: Demand moderate, market firm. Mostly leafy stock. Locals: Field crates, best, 75@1.00; few, 1.25; poorer, 50@60.
Parsnips: Lug, 70@85.
Peas: Market steady. Lb., fancy, 10@12; poorer, 8@9.
Peppers: Locals: Bells, green, per lug, 90@1.00; chilis, 45@50; pimientos, 75@90 lug.
Rhubarb: Lug, 75@90.
Squash and Pumpkins: Market steady, movement good. Hubbard, banana, pumpkins, 1@1½ lb.
Tomatoes: Market firm on good stock. Locals: No. 1, per lug, mostly 1.25@1.35; poorer, 75@1.00.

FRESH FRUITS

Apples: Demand and movement slow, market steady. Locals: Windfalls, 1½@2; Romes and Winesaps, 4@5 lb; few best Delicious and Jonathans, Yucaipa section, 5@7 lb. Watsonville: Fancy 4 tier Bellefleurs, 1.50@1.60; poorer, 1.25@1.40; 4½ tier, 1.15@1.25; B grade, 4 tier, 1.25@1.35; C grade, 1.15@1.25. Washingtons: Jonathans, extra fancy, large, 3.00@3.25; medium, 2.75@3.00; fancy medium, 2.65@2.85; small, 2.50. Oregons: Spitzenburgs, extra fancy, medium size, 2.75@3.00; fancy, medium, 2.65@2.85. Winter bananas, extra fancy medium and large sizes, 2.75@3.25.
Avocados: 3.00@6.00 doz.; lb., 25@40.
Cranberries: Market steady. Massachusetts: Late Howes, 24.00@25.00 per barrel; ½ barrels various varieties, 10.00@10.50. Northwestern, 1/3 barrel, 7.00@7.50.
Grapes: Demand moderate, market firm. Per lb.: Malagas, 7½@9; Red Emperors, 7@8; Cornichons, 6½@7½.
Melons: Casabas, 1@2 lb.
Olives: Ripe, lb., 4@6.
Pears: Demand moderate, market firm. Bartletts, mostly 5½@8.
Persimmons: Lb., best, 10@15; others, 7@8.
Pomegranates: Lb., 5@9.

CITRUS FRUITS

Grapefruit: Market firm. Northern, per packed box, 3.50@4.00. Arizonas, 5.00@5.50; few, 5.75.
Lemons: Demand slow, market steady. Locals: Special pack, mostly 4.00; market pack, 2.50@3.00; loose boxes, 1.50@2.00; lugs, 75@1.25.
Oranges: Demand good, market weaker. Navels, special brands, 5.50@6.25; loose boxes, 3.00. Valencias, special brands, mostly 5.50@6.25; market pack, 4.00@5.00, according to size and quality; culls, field boxes, 2.25@2.50.

HONEY

Demand has been better and movement heavier during last two weeks. Market firm, better feeling. Stocks continue to decrease. The heaviest movement is on light amber alfalfa; supplies of other grades, especially white stock, limited. Due to late rains, colonies in Southern California have more brood than usual at this date, and as a result winter stores are being consumed too rapidly. Carloads f. o. b. usual terms at loading points: White orange, no sales reported, supplies nearly exhausted; white sage, mostly 11½; light amber sage, 8½; light amber alfalfa, 6½@7, mostly 6½. Considerable California honey being sold by producers in small lots at prices averaging 3@7 per lb. higher than carload prices. Hawaiian carloads, f. o. b. San Francisco: White, 6½; light amber, 5; honeydew, 4. Beeswax: Quiet. Too few sales to establish market.

NUTS

California Walnut Growers Association:
Opening prices to wholesalers:

No. 1 Softshell	31
No. 2 Softshell	21
Fancy Budded	34

GRAIN AND FEEDS

Grain Exch. price bid Nov. 21:
Barley: 100 ton lots, Dec. del., 1.32.

HAY

Alfalfa Growers of California report:
Market strong in all parts of the state. There is a very good general demand in central as well as local markets which promptly absorbs receipts at full prices, even though these arrivals are pretty heavy, as was the case last week in Los Angeles. Consumption of baled alfalfa always shows an increase at this time of the year, but this year the increase seems to be more marked than usual. One of the causes is undoubtedly the fact that smaller stocks than usual are being carried by dealers and users; in addition to this, there seems to be an increase in the consumption of milk and cream in the centers of population all over the state; part of this is undoubtedly the result of the vigorous growth in population of the large and also many of the smaller cities, and in addition to this there also seems to be a permanent per capita increase in the consumption of milk, cream, etc. Another outstanding feature is low stocks in the hands of growers in most of the important producing and shipping districts, which at the same time have a considerable local market. In several of these districts growers now receive same prices on ranch which their hay would bring at present in the central markets; that is, up to $6 per ton above central markets. These districts may have to ship in some toward the end of the present crop year.
The alfalfa situation in Nevada, which during the summer looked hopeless for the growers there, and which for some time caused California growers to fear complete demoralization of our markets, has been improving steadily since about two months ago when the growers commenced to organize, and it is now in pretty good shape. Owing to lack of rain home consumption has increased considerably; this, combined with a much improved shipping demand, stiffened prices considerably, and they are now pretty well in line with those of California. The lack of rainfall is commencing to also make itself felt in many parts of California.
There were 1,450 tons of grain and alfalfa hay received on the Los Angeles tracks the week ending November 19, with a carryover of 550 tons.
Prevailing prices last week, delivered in the vicinity of Los Angeles:

No. 1 Dairy Alfalfa	22.00
Standard Alfalfa	17.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats	20.00@26.00
Barley	16.00@24.00
Alfalfa, Rabbit	24.00@28.00
Alfalfa, No. 1 Dairy	19.00@21.00
Standard	16.00@18.00
Straw	12.00

San Francisco Markets

San Francisco, November 21, 1921.

BUTTER

Extras				50
Nov.	16	17	18	21
'21	49½	50	49½	50

CHEESE

Dairy Exchange quotations:

Cal. Flats	26@31
Cal. Y. A.	33
Ore. Trips	30
Ore. Y. A.	35

EGGS

Dairy Exchange quotations:

Extra				71½
Extra Firsts				70½
Extra Pullets				54
Undersized No. 1				47½
Nov.	16	17	18	21
'21	67½	68	73½	71½

POULTRY

Wholesale prices are:
Poultry: Young chickens, Leghorns, 1 to 1¼ lbs., 48@50 per lb.; above 1½ lbs., 40 per lb.; heavy breeds, 26@27 per lb.; staggy roosters, 20@25 per lb.; old roosters, Leghorns, 16 per lb.; heavy breeds, 18 per lb.; hens, Leghorns, large, 25@28 per lb.; small to medium, 24 per lb.; heavy breeds, 28@30 per lb.
Ducks: 22@25 per lb.
Geese: 30@33 per lb.
Turkeys: Live, old, 35 per lb.; spring, 38 per lb.; extra large, 40 per lb.; do, dressed, 40@42; young toms, 45.
Squabs: Fancy, 50; do, common, per dozen, 3.50; old pigeons, 3.50 per dozen.
Belgian hares: Live, 16@18 per lb.; do, dressed, 25@28 per lb.

LIVESTOCK

Western Meat Co. quotes:
Weighed off cars at our yards in South San Francisco:
Cattle: No. 1 steers, 6@6½; do, second quality, 4¾@5¾; cows and heifers No. 1, 4¾@5¼; do, second quality, 4@4¾; bulls and stags, 3@3½.
Calves: Light weight, 7@8; heavy, 5½@6.
Sheep: Wethers, 4@4½; ewes, 2¾@3¼.
Lambs: 7@7¾.
Hogs—Hard, fat, grain fed, weighing 125 to 200 lbs., 10; 200 to 250 lbs., 9; 250 to 300 lbs., 8; light sows, 8; heavy, 7.
California Farm Bureau Marketing Association reports:

No. Hogs	Av. Wt.	Dock	Price
Hanford, November 17			
90	175	.....	10.20
90	173	.....	10.20
70	202	.....	10.00
70	193	.....	10.00
75	189	.....	10.05
70	230	.....	9.95
70	206	.....	9.95
59	230	.....	9.10
1	360	.....	8.60

8 cars, 74 consignors, $11,816.08.

Fresno, November 18			
85	170	.....	10.00

1 car, 1 consignor, $1442.00.

Bakersfield, Nov. 19			
28	174	.....	10.00
98	160	.....	10.00
76	195	.....	10.00
20	120	.....	9.00
6	230	.....	8.50
8	255	.....	8.00
4	377	50	6.50

3 cars, 14 consigners, $4,052.65.
Total for the week, 12 cars, 89 consignors, $17,310.73.
These prices are f. o. b. shipping point to the farmer, while the prices quoted by the newspapers are off cars at their packing houses.

POTATOES AND ONIONS

Street prices:
Potatoes: River, fancy, 2.40@2.60; choice, 2.00@2.25; Oregon Burbanks, 2.65@2.75; Salinas, 3.75; netted gems, 2.75@2.90; British Queens, 2.25@2.35. Sweets, 2¾@3.
Onions: New crop Yellow, 3.25; Brown, 3.75@4.00; few fancy, 4.50; Green, 1.50@2.00 per box.
Garlic: 3@5 per lb.

VEGETABLES

Wholesale selilng price:
Artichokes, 16.00@20.00 cr.
Beans: String, 5@6 lb.; lima, 7@10; wax, 5@6.
Brussels Sprouts: 6@7 per lb.
Carrots: Sk., 1.00@1.25.
Celery: 1.00@2.00 cr.; fy., 2.50; bunch, 15@30.
Cucumbers: Lug, 50@75; hothouse 1.35@1.50; Southern, 60@85.
Eggplant: 1.00@1.25 lug; So., 4.00@5.00.
Lettuce: Crate, 75@1.00; Los Angeles, 1.00@1.75.
Mushrooms: Box 50@1.00.
Okra: 1.00@1.50 per box of about 10 lbs.
Peas: Lb., 5@12½.
Peppers: Bells, 3@4 lb.; 50@75 lug; Chili, 3@5.
Spinach: 4 per lb.
Squash: Southern, 1.00@1.75; local, 2.00@2.25 per lug; cream, 75@1.00 per lug box.
Tomatoes: 75@1.00; few, 1.25; green, 75@1.00 lug; Southern, 1.00@1.25.

FRESH FRUITS

Apples: California: Bellflower, 1.00@1.15; B grade, 75@90; Newton Pippins, 3½ and 4 tier, 1.35@1.50; 4½ tier, 1.25@1.50; B grade, 1.00@1.25; Spitzenburg, 4 tier, 1.50@1.75; 4½ tier, 1.15@1.50; Baldwin, 4 tier, 1.40@1.60; 4½ tier, 1.15@1.35; Langford, 3½ and 4 tier, 1.50@1.75; 4½ tier, 1.25@1.50. Northwestern: Spitzenburg, extra fancy, 2.50@2.75; fancy, 2.25@2.50; choice, 1.75@2.00; Rome Beauty, fancy, 2.75@3.00; choice, 2.00@2.50; banana, extra fancy, 3.25@3.50; fancy and delicious, 2.75@3.00; Jonathan, extra fancy, 2.00@2.50; fancy, 1.75@2.00; Lady apples, 3.00@3.50.
Avocados: California, doz., large, 3.00@5.00; small, 1.00@2.00; Fla., 3.00@5.00; Tahiti, 3.00@4.50.
Bananas: Eastern, 6@7; Hawaiian, 7@8.
Blackberries: 60@85.
Chestnuts: 18@25 per lb.
Cranberries: Bx., 4.50@5.50; Cape Cod, 21.00@23.00 bbl.
Figs: Black, double layer, 1.00@1.50.
Grapes: Black, 2.75@3.25; Tokay, 3.00@3.50; Muscat, 2.75@3.75; Malaga, 2.75@3.25; seedless, 4.00@4.25.
Huckleberries: 8@11 lb.; fy., 15@18.
Melons: Persian, 1.00@1.25 per small cr., 1.50 large; Honeydew, 1.00@1.25 per standard crate; Casabas, 75@1.00 per doz.
Olives: Large, 8; small, 5
Pears: Winter Nellis, 2.50@3.25 box; Beurre Clairgeau, 2.00@2.50; De Anjou, 2.00@2.50; Beurre Hardy, 1.50@2.00; do, fancy, 2.50@3.00.
Persimmons: 1.25@1.75 box.
Pineapples: 4.00@4.50 dozen
Pomegranates: Box of ½ doz., 2.00@2.50.
Prunes: 1.00@1.25 cr.
Quinces: 1.25@1.50 lug.
Raspberries: 75@1.00 dr.
Strawberries: 1.00@2.00; dr., 65@85.

DRIED FRUITS

Apples, 1921 (Packers' Quotations):

Choice (in 50s)	10¼
Extra choice (in 50s)	10½

Apricots, 1921 (California Prune and Apricot Growers) Bulk Basis:

	Sun-sweet	San Joaquin
Standard	12	10½
Choice	16	13½
Extra Choice	17	14½
Fancy	19	15½
Extra Fancy	21	....

Peaches, 1921 (California Peach and Fig Growers), Sept.-Oct,-Nov. shipment, guaranteed to January 1:

	Yellow	Muir
Slabs (in 50s)	@9	...@...
Standard (in 50s)	@9¼	...@9½
Choice (in 50s)	@9 7/8	...@...
Fancy (in 50s)	@11	...@12
Extra fancy (in 50s)	@12	...@13
Practically Peeled—		
Standard (in 50s)	@10¼	...10½
Choice (in 50s)	@10 7/8	...@...
Fancy (in 50s)	@12	...@13
Extra fancy (in 50s)	@13	...@14

Cartons, 30 11-oz., per case	3.10
Cartons, 60 11-oz., per case	6.00
Cartons, 24 2-lb., per case	6.50
Cartons, 10 5-lb., per case	6.60

Figs, 1921 (Cal. Peach and Fig Growers), Sept.-Oct. shipment, guaranteed to Jan. 1:

White—	
Standard (in 50s)	6½
Choice (in 50s)	8
Fancy (in 50s)	10½
Bricks, 12 No. 10s	1.10
Bricks, 24 No. 8s	1.80
Bricks, 50 No. 6s	2.80
Bricks, 70 No. 4s	2.95
Layers, 10-lb., 4-row	1.60
Layers, 10-lb., 5-row	1.40
Calimyrna—	
Standard (in 50s)	7½
Choice (in 50s)	10½
Fancy (in 50s)	13
Bricks, 24 No. 8s	2.05
Layers, 10-lb., 6-row	1.90
Black—	
Standard (in 50s)	6
Choice (in 50s)	8
Fancy (in 50s)	11

Raisins, 1921 (Cal. Assoc. Raisin Co.):
Sun-Maid Raisins:
Muscats: 36 15-oz. cartons, seeded, 14¾ lb.; 25-lb. boxes, bakers' seeded, 13 lb.; 25-lb. boxes bakers' seeded, 13½ lb.
Muscats: 25 1-lb. boxes, 2-crown loose, 13¾ lb.; 25 1-lb. boxes, 3-crown loose, 13¾ lb.; 25 1-lb. boxes, 4-crown loose, 15 lb.
Thompson Seedless: 48 15-oz. cartons, unbleached, recleaned, carton, 16 lb; 25-lb. bulk 14½; 25-lb. bakers' graded, unbleached, 17; 25-lb. boxes, choice, sulphur bleached, 18; 25-lb. extra fancy, sulphur bleach, 19; 25-lb, oil dipped, 15½; 25-lb. soda dipped, 15½.
London Layer Raisins: 3-crown London layer: 20-lb. boxes, $3.50 per box; 10-lb. boxes, $1.85; 5-lb. boxes, $1.00.
Clusters: 20-lb carton, clusters, $4.00 per box; 12 2-lb. carton, clusters, $4.80; 4 5-lb. cartons, clusters, $5.50 5-lb. carton, Imperial clusters, $1.50; 80-lb. vineyard run layer, $12.50.
Sultanas: 25-lb. box unbleached, recleaned, 13½ per lb; 25-lb. box, soda dipped, 14½; 25-lb. oil dipped, 14½.
Black Grapes: 25-lb. boxes black grapes, 14½ per lb.
Old Crop:
Muscats: 36 16-oz. cartons, seeded, 14½ per lb.; 25-lb. bakers' seeded, 13; 1-crown loose Muscats, 13½.
Sultanas: Sultans, unbleached, recleaned, 13½ per lb.
Thompson Seedless: Soda dipped Thompsons, 15 per lb.; oil dipped Thompsons, 15; black grapes, 14½.
Prunes, 1921 (Cal. Prune & Apricot Growers): Sunsweet Quality, bulk basis: 30-40s, 9¼; 40-50s, 8¼; 50-60s, 6¾, 60-70s, 6¼; 70-80s, 80-90s, 90-100s, 5½. Growers Brand ¼c less on all sizes. All prices subject to change at any time.

CITRUS FRUITS

Oranges: Valencias, 4.00@6.25 per box. Lemons, 3.00@5.00 per box; lemonettes, 1.50@3.00 per box. Grapefruit, 3.00@4.25 New crop Navels, 5.75@6.25; choice, 5.00@5.50. Tangerines, cr., 3.00@3.50; Mandarines, box, 2.50@3.00.

BEANS

Below California Bean Growers Association shippers' prices choice recleaned:

Large Whites	5.15
Small Whites	4.90
Pinks	4.35
Mexican Reds	4.40
Red Kidney	6.75
Henderson Bush	5.75
Cranberries	5.75
Bayos	4.80
Blackeyes	4.90

NUTS

California Almond Growers Exchange's prices:

Languedoc	14½
Hard Shell	11

Manchurian walnuts, 17.
Chinese peanuts, fy., 9½.

HAY AND FEED

A. W. Scott Co. says:
Arrivals past week 1,033 tons as compared with 760 tons of the previous week. Demand has also been strong and market closes more active than for some time, with values strongly maintained and with an upward tendency. The continued dry weather and the recent light frosts have increased the present feeding demand for dairy and stock purposes, and the general movement of hay, both out of San Francisco and through the interior, is in greater volume and in much stronger demand. Indications are that demand will continue and prices rule stronger than previous levels. Alfalfa is in fair demand, but with receipts somewhat heavier than the consumption. Heavy arrivals are coming in from Nevada every day and being absorbed both by local demand and for shipping purposes. As practically all the California stocks are in warehouses and not being offered, the foreign hay has moved without difficulty. Change in the weather conditions, however, may start these local stocks almost any time, and the liability of such heavy offerings holds down dealers' ideas as to present price and may cause a depression in the future market. Millfeeds continue slow and dull, with no activity in any particular line and movement light.
We quote today wholesale prices in carload lots as appear from dealers' transfers upon the markets in San Francisco (for prices to consumers, charges of switching, cartage, commission and handling expenses must be added, according to conditions).

Wheat hay No. 1	17.00@19.00
Wheat hay, fair grade	14.00@17.00
Tame oat hay	15.00@18.00
Wild oat hay	11.00@13.00
Alfalfa hay	13.00@16.00
Stock hay	9.00@12.00
Straw	10.00@12.00
Rolled Barley	29.00@30.00
Ground Barley	31.00@33.00
Oats, Rolled Feed	34.00@36.00
Bran and Millrun	24.00@27.00
Middlings	40.00@44.00
Coconut Meal	24.00@26.00
Alfalfa Meal	21.00@23.00
Cottonsed Meal	40.00@42.00
Sugar Beet Pulp	29.00@30.00
Molasses Tanks	21.00 Barr. 25.00
Milo Maize, Corn Meal and Cracked Corn	38.00@41.00
Scratch Feed	44.00@46.00

GRAIN

Sales on Grain Exchange:
Barley: Feed, 1.25@1.32½; shipping, 1.35@1.45.
Wheat: Mill, 1.85@1.90; feed, 1.85@1.95.
Red Feed Oats: 1.00@1.60; seed, 1.75@2.10.
Corn: California yellow, 1.45@1.50; eastern yellow No. 2, 1.37@1.40; No. 3, 1.36@1.38; No. 3 kaffir, in bulk, nominal; white Egyptian, 1.60@1.65; California red milo, 1.50@1.55.

Citrus Markets

Los Angeles, November 22, 1921.

Valencias are closing the season exceptionally strong. Navels are going forward from Central and Northern California, both of those sections aggregating around 30 carloads daily. There is no active demand for lemons. F. O. B. sales are around $3.00 and $3.50 per box.

Shipments

Shipments of citrus fruits to date since November 1, 1921. Southern California: Oranges, 388 cars; lemons, 262; total, 650. To same date last season: Oranges, 137; lemons, 269; total, 406. From Central California to date this season: Oranges, 146; lemons, 10; total, 156. To same date last season: Oranges, 127; lemons, 13; total, 140. From Northern California to date this season: Oranges, 37; lemons, 1; total, 38. To same date last season: Oranges, 19; lemons, 1; total, 20.

AT THE AUCTIONS

November 16

New York: 17 or., 7 lem. Val. 2.55@8.90, lem. 2.60@3.75.
Boston: 8 or., 1 lem. Val. 3.75@7.75, lem. 2.10@3.10.
Philadelphia: 4 or., 1 lem. Val. 5.90@6.90, lem. 3.20@3.80.
Pittsburg: 4 or., 2 lem. Val. 3.80@5.80, lem. 2.50@4.25.
Cleveland: 2 or., 1 lem. Val. 3.60@6.20, lem. 3.25@4.25.
Cincinnati: 2 or., 2 lem. Val. 3.30@3.75, lem. 2.15@4.55.
St. Louis: 2 or., 1 lem. Val. 3.55@4.70, lem, 2.30@3.70.

November 17

New York: 16 or., 5 lem. Val. 3.90@9.05, lem. 2.60@3.80.
Boston: 12 or., 2 lem. Val. 3.10@7.20, lem. 2.75@4.20.
Philadelphia: 4 or., 2 lem. Val. 4.15@7.40, lem. 1.20@2.90.
St. Louis: 2 Val. 4.00@4.90.

November 18

New York: 14 or., 3 lem. Val. 4.20@8.40, lem. 2.85@4.00.
Boston: 7 or., 2 lem. Val. 3.70@7.40, lem. 3.00@4.70.
Cleveland: 2 or., 1 lem. Val. 4.15@6.30, lem. 2.90@3.40.
St. Louis: 2 or., 1 lem. Val. 3.65@4.45, lem. 2.00@2.45.
Cincinnati: 1 or., 1 lem. Val. 3.50@4.75.

November 21

New York: 28 or., 6 lem. Val. 3.75@8.90, lem. 2.40@4.00.
Boston: 10 or., 3 lem. Val. 3.85@7.20, lem. 2.20@4.15.
Cleveland: 5 or., 1 lem. Val. 4.15@7.40, lem. 3.50@4.30.
Pittsburg: 6 or., 1 lem. Val. 3.70@6.40, lem. 2.65@3.70.
Cincinnati: 2 lem. 2.15@4.20.
St. Louis: 1 or., 1 lem. Val. 5.20@5.85, lem. 3.50@4.60.

ARIZONA GROWERS INTERESTED IN GRAPES

By Fred K. Howard

The meeting of grape growers and prospective growers of the Salt River Valley of Arizona under the auspices of the county agricultual agent at Phoenix, November 16 and 17, brought out many interesting questions regarding the feasibility of growing table and raisin grapes in the Salt River Valley. The meeting took the form of an institute with speakers from the state agricultural college and from the California Associated Raisin Company. The final day's meeting was held at the state experiment station farm near Mesa. Those interested in grape growing in Arizona are very anxious to start their industry on a sound basis and are making every effort to get the best sort of information regarding the proper varieties for their climate and will probably confine the planting to the districts where soil and water conditions give the best promise of quality and quantity production. These matters were emphasized by almost all of the speakers and particularly by the local leaders in the industry.

The state experiment station has been experimenting with early ripening varieties for the past three years, and interest seems to be centering on the planting of Thompson Seedless and Malagas, with some inclination toward Cornichon and Persian 23. The growers feel that with their early season they can successfully compete in the fresh grape market with any of the California districts.

Every effort is being made by the office of the state entomologist to keep Arizona free from the two most dangerous grape insect pests, phylloxera and the grape mealybug. With the present inspection system and the cooperation of farseeing growers they hope to save the industry the enormous expense of controlling these pests. The success of the institute is largely due to the efforts of County Agricultural Agent Heard who plans to make these meetings regular annual affairs in the future.

A state motor vehicle police to patrol the highway is seriously needed, says the highway commission, as well as magistrates who will enforce the law.

RHODES GRASS IN ARIZONA

MUCH valuable information as to Rhodes grass is gathered in a circular of the agricultural experiment station of the University of Arizona, issued in May, 1921. The circular is written by S. P. Clark, assistant agronomist, and deals, of course, particularly with Arizona conditions:

Rhodes grass is a perennial plant having narrow leaves and slender, erect stems. It also produces many prostrate stems which send roots into the soil at every node or joint, thus establishing new plants. These prostrate stems will often grow to be four, six, or even eight feet in length, growing in all directions from the parent plant. Frequently, although poor germination is secured when the seed is planted, these runners will form new plants and thicken up the stand. After the plants are once established no further attention is required as they make a heavy sod and prevent weeds securing a foothold.

Rhodes grass stands drouth fairly well but is unable to survive severe cold. A temperature below 15 degrees Fahrenheit is usually fatal to it.

Soil

It thrives best on a deep, rich loam and does not make a satisfactory growth on dry, sandy soils. Its most promising field of usefulness in this state is on alkaline soils as it will grow and thrive on soils containing very large amounts of alkali. Many of these areas, by the use of Rhodes grass, may be turned into profitable pasture and hay fields. On the university farm near Tucson this grass is making a fine healthy growth where black alkali is so strong that all other crops save Australian saltbush have failed to grow.

Planting

Before planting the ground should be well filled with water, then given thorough preparation. It should be plowed deep, disked and harrowed until a fine, uniform seed bed is secured. The ground should be well graded and leveled so as to eliminate all pockets or depressions where the water will accumulate and high spots that will fail to receive water when the land is irrigated. A fine seed bed is essential and there should be sufficient soil moisture to cause the seed to germinate quickly and to maintain the young plants until they are thoroughly established. The best time to seed is early spring, that is, from the last of March to the first of May, or as soon as danger of severe frost is past. Fall planting may succeed, but there is danger of the young plants winter-killing. The seed is very light, and broadcasting by hand is the usual method of seeding. This should be done on a still day in order to secure an even distribution. It is good policy to sow half the seed one way, then cross seed. This will minimize the chances of having large unplanted spaces.

After the seed is sown it needs but a light covering; a light harrowing or going over with a light plank drag will be sufficient. On light or sandy soils it is a good policy to roll the soil after planting in order to give the seed close contact with the soil particles and help maintain the surface moisture. If there is danger of the surface soil becoming dry before the plants are sufficiently established to withstand flood irrigation the field should be corrugated. This may be done in the following manner:

Make a frame ten feet long and four feet wide. On the under surface nail 2 by 4s, 18 inches or two feet apart. Bevel them to the front end the same as a sled runner. This tool dragged across the field will form shallow furrows down which water may be run. The water will seep through and moisten all the surface. A simpler method is to fasten 2 by 4s, as just described, on the under side of a harrow instead of a frame.

Yields

The returns per acre vary greatly with the type of soil. The richer the soil the greater the returns. Three to six tons per acre is an average yield, but under very favorable conditions it may amount to seven or eight tons per acre. The crop should be harvested as soon as the seed begins to ripen. The hay, being fine stemmed and very leafy, cures easily. It should not be allowed to remain in the field longer than is necessary since the sun will bleach it badly, making inferior hay. The field should be irrigated immediately after each cutting in order to stimulate new growth.

Feed Value

Rhodes grass hay is relished by all classes of livestock and maintains their growth and supplies energy better than most grasses. Although Rhodes grass makes excellent hay its chief value is as a pasture crop. It forms a heavy sod and stands trampling well. The number of stock that it will maintain will vary according to the type of soil and the season. The field may be pastured the year through, but this practice is not recommended. The plants should be given an opportunity to renew their strength by being cropped for hay occasionally.

After a field has been in Rhodes grass for a few days, and perhaps become sod bound, it can be renovated by thorough disking and irrigating. Rhodes grass is very easy to eradicate.

CROP REPORT FOR ARIZONA

That Arizona is closing the crop season with excellent yields of corn, potatoes and grain sorghums, is shown by the crop report just issued by the U. S. bureau of markets and crop estimates in cooperation with the University of Arizona extension service. Conditions have been exceptionally favorable for the harvesting of cotton, the absence of rain and frost permitting the maturing of late bolls. Range grass has cured in excellent condition, which insures an abundance of feed on the desert ranges.

While a large proportion of the Arizona corn crop is not harvested for grain, the equivalent grain yield on the acreage harvested this season is estimated at about 928,000 bushels.

The potato crop is the best for several years, being estimated at 575,000 bushels. The grain sorghum crop matured in excellent condition. The total grain crop is estimated at 1,485,000 bushels compared with 728,000 bushels in 1920.

WEATHER REPORT

San Francisco, Cal., Nov. 19, 1921.

Stations	Rainfall Week	Rainfall Season	Rainfall Norm.	Temp. Max.	Temp. Min.
Eureka	.60	2.47	6.89	58	36
Red Bluff	.0	.65	4.12	82	30
Sacramento	.0	.80	2.57	76	32
San Francisco	.0	.87	2.86	63	45
San Jose	.0	.42	2.19	68	30
Fresno	.0	.21	1.59	78	33
San Luis Obispo	.0	.56	2.67	72	42
Los Angeles	T	1.21	1.60	70	46
San Diego	.12	2.03	.99	66	45

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Loans made by this bank may be paid off any time after five years—and the borrower may enjoy the unusual privilege of taking 33 years to repay his loan in installments.
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2. The mortgage never becomes due. You pay no renewal expenses.
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5. The borrower pays no commission. We loan *direct* to farmers. Loan made up to 50% of appraised value of the land, and 20% of the insurable improvements.
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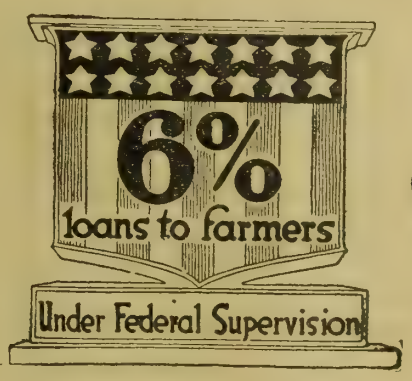

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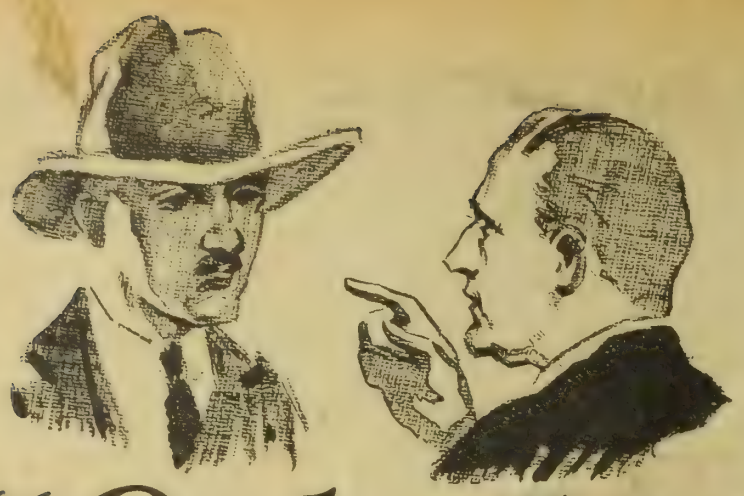

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And that isn't all. There's an extra power pulley on the engine that also runs at ***low speed***—just right for driving your pump, separator, washer or any similar machine, either direct or through a line shaft. And while you're running these machines, your battery is being charged.

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To start the plant simply push a button—you don't have to crank it. And it's just as easy to stop it.

All in all, you certainly must admit that this Home Light Plant is just made for ***you***—simple, few parts, easy to run. And you can buy it at a new low price—complete and ready to give you an abundance of light and power. "

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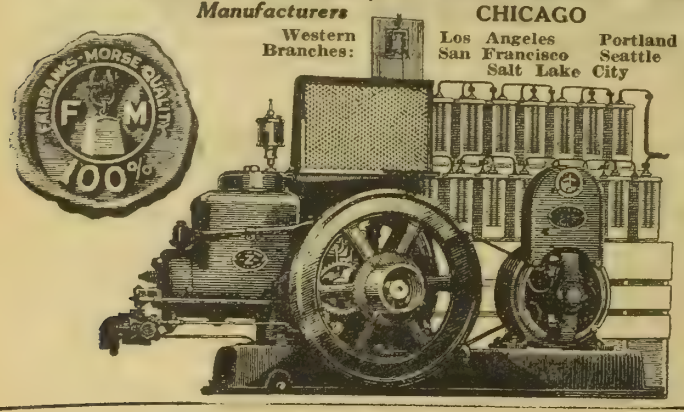

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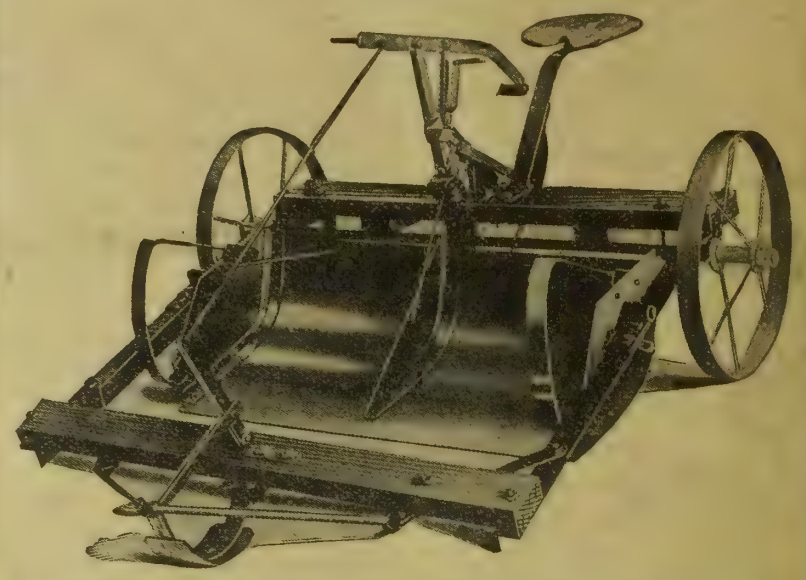

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Made in 2-horse, 3-horse and 4-horse sizes. Can be operated by small tractors from the tractor seat by the tractor driver.

Send for descriptive circulars, with lowered prices, or ask your dealer to send for one on approval. We pay the freight.

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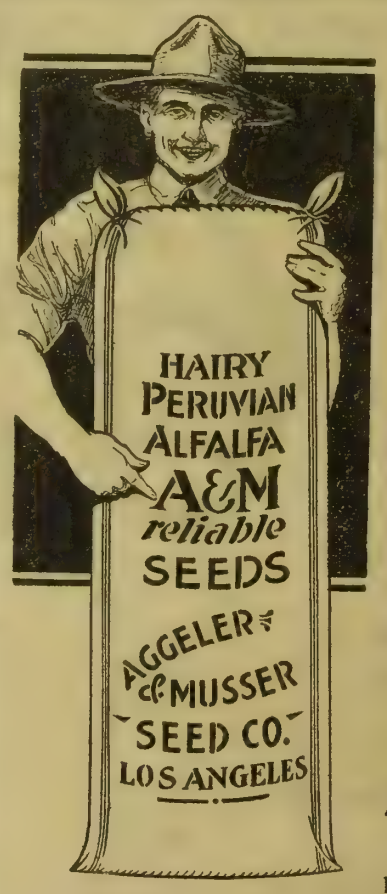

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LVII — December 3, 1921 — No. 23

Poultrymen Prosper Through Cooperation

NO STATE in the Union can show such increase in the poultry industry as California. We are producing today practically 100 per cent more of poultry and eggs than we were a decade ago. Almost 80 per cent of our farms report poultry; there are thousands of town lot producers, and, far more important to the welfare of the state, thousands whose entire business is production of poultry and eggs. According to the census there are in California a total of all poultry of 10,811,183. This is against 6,000,000 shown by the 1910 census.

Why? One word answers—COOPERATION.

In no state in the Union have poultrymen cooperated as in California. The cooperation has succeeded not in boosting prices to the consumer, but in distribution and in storage which have enabled poultry people to meet the needs of all markets.

Established 1877 Forty-fourth Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877

Combined with California Cultivator 1914 Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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Advertising rates furnished on application.

The Sacramento office is Room 210 Ochsner Building. All mail pertaining to livestock should be addressed to our Sacramento office.

The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

Member — Eastern Offices:
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Saturday, Dec. 3, 1921

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

If among the more than 40,000 Cultivator's weekly circulation any fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

EDITORIALETTES

The importance of the poultry industry justifies the Cultivator in giving the space accorded it this week. Mrs. Koethen takes a look over the last year's accomplishment and the coming years' promise. Her answers to poultry questions are becoming one of the most popular features of the poultry department. Some of the most valuable suggestions for egg producers are given in quotations from a circular issued by the Poultry Producers of Southern California on page 591. It is an appeal from the people who are most deeply concerned with the marketing of the product of California's poultry ranches. Their entire time is given to the study of the markets, and they have seen where losses have come to them and to their members because of carelessness of the producer. Standardization of fruits, standardization of dairy and poultry products have come because standardization pays, and equally a sure loss is visited upon shipments of eggs which come from the ranches of people who permit dirties or stale eggs to be a part of their delivery of so called extra eggs. It does not pay to advance freight charges on shipments of eggs to points 3000 miles away unless there is absolute certainty as to their quality.

CONSERVE POWER

The League of the Southwest is an open forum. When it convenes at Riverside next Thursday morning there will be present representatives from a half dozen states, many irrigation districts, private and public, municipalities and power companies and interests almost without number. Millions are at stake, and while the league will afford opportunity for discussion of the questions, there can be no definite action other than that secured through the passing of resolutions, but the action there taken or, rather, the resolutions there passed, may have wide influence. Let us hope that the voice of the people will be loud and emphatic.

GROWERS SHIP OWNERS

Under ordinary conditions or, rather, conditions which are entirely fair to producers, we believe in the producer remaining a producer; marketing forces doing the marketing; transportation companies handling the transporting; retailers supplying us with pins and needles—in fact every fellow perfecting himself in his own job and sticking to it.

Bear in mind "under conditions which are entirely fair."

Marketing forces were not fair and it became necessary to enter the marketing field. For nearly a third of a century we have increased in marketing efficiency until we are hoping the producing industry may yet become profitable. England has succeeded with cooperative stores. They may yet come to this country, but as yet they have not been generally successful. A few purchasing agencies have, however.

Now comes transportation—water transportation.

The Fruit Growers Exchange committee consisting of C. S. Whitcomb, A. E. Bennett and R. H. Wilkinson has investigated all angles of water transportation. Now comes the announcement:

"Formation of a $2,000,000 steamship company to operate six refrigerator ships between Los Angeles and Atlantic ports has been almost completed by the water transportation committee of the California Fruit Growers' Exchange. Final arrangements which will lead to operation of the ships within a couple of months are expected to be completed within the next two weeks."

The $2,000,000 pledged will be used for the erection of the precooling plant and dockage facilities at Los Angeles Harbor, trucking equipment, chartering of the six ships from the government, and the securing of adequate docking and storage facilities in Boston, Philadelphia and New York.

In speaking of it Mr. Whitcomb said:

"Our plan provides that the Producers' Steamship Company shall render exactly the same service to shippers that the railways now furnish. The steamship company will send its trucks to take and receipt for the fruit at the door of the packing house, transport it to San Pedro, place it in a precooling plant at the dock and hold it in cool storage aboard ship until unloaded at the eastern market.

"The precooling plant at San Pedro will have a capacity for about 200 cars, and every modern mechanical device for handling the fruit rapidly from dock to ship will be installed."

CALIFORNIA'S WINNING AT INTERNATIONAL

Wire from Prof. Gordon H. True at the Chicago International shows great honors won by California livestock:

"Have won as follows: Heifer (Lula Mayflower, cross-bred heifer) first in class, champion grade, champion yearling, and grand champion of the show. California Standard (Aberdeen-Angus steer) first in class, champion Angus, and reserve champion calf. California Bystander (Aberdeen-Angus steer) first in class. Won first on grade herd. California Perfect Lad (cross-bred Hereford-Angus steer) took second on Hereford specials. Cross-bred wether first, champion, and reserve champion of the show. Southdowns second, third and fifth, first on pen of Southdown. Hampshires first, second and fifth, and first on pen of Hampshires. Grade yearlings third, first on pen of grade yearlings. Rambouillets third and fifth, second on pen of Rambouillets. Shropshires second, and fourth on pen of Shropshires. Hogs Hampshire second, Berkshire fifth."

PEAR INDUSTRY CONVENTION

Pear growers and those interested in pear growing and the pear industry generally held an enthusiastic convention at Berkeley. We have promise of transcripts of some of the talks which are of greatest interest to pear producers, and we hope to make liberal quotations from these later. Regarding some features of the convention President Swett writes:

"Five sessions, averaging attendance of 150 to 200 at each session, showed a real interest; 197 at the banquet featuring pears showed folks weren't afraid of the results. We even had a pear cocktail. Jaffa said it contained 113 calories guaranteed 'kickless.' Reimer's talk was a classic, embodying such careful and masterly research by a man devoted to his subject. We are under great obligations to Mr. Whitcomb for coming away up here; it was good of him.

"Everybody says this pear meeting was a remarkable success. It was different because:

"First, through the Pear Growers, I asked if they wanted a meeting; if so to sign a coupon requesting the committee as their servants to get up a party for them. On the coupon they stated what they wanted discussed, and we followed the growers' requests.

"It was a group all interested in the same kind of a dollar.

"It was an industry—not a growers' convention—canners, dryers, railroad men and horticultural experts were there.

"We tied it up to the University food products laboratories where Cruess is doing such fundamental and wonderful work; and to the students' fruit show. We tried to avoid any topics they could be informed on through the ordinary university or farm advisor channels.

"We plan next year to give one day to the pear industry, one day to the peach and one day to the prune and apricot."

POULTRY COOPERATION

During the last 12 months California has shipped 1000 carloads of eggs to the city of New York. We do not know the exact percentage, but not far from 90 per cent of these eggs were shipped by cooperative organizations. The entire consideration of these cooperators was not simply to dispose of those carloads at longest price but to stabilize a market which was beginning to weaken. Their efforts proved successful and did, as hoped, first secure a market for the eggs sent to the greatest egg consuming center in the world; second, and better, they took from California markets eggs which would have entirely demoralized those markets. But even extensive shipments to far away markets cannot be used exclusively for they will not absorb all that we have to offer; cooperation also aids in upholding the markets by throwing other thousands of carloads into storage.

To the cooperative associations in California—there are only a few—the success of the industry has been due. Former methods of poultry and egg marketing would prove inadequate to meet present day production.

While New York is the largest egg market in the world, as noted, it is not able to handle all of California's surplus, and a representative of one of the state associations is just back from England with suggestions for transporting by way of the Panama canal and marketing in London and other large English centers other hundreds, and possibly thousands, of California produced eggs.

One side of poultry cooperation which is being used to advance the cause is the social. The Poultry Producers of Southern California have been utilizing this force with especial effectiveness during the last few weeks. In this work they have been joined by Market Director Maddox and Deputy Britt of the southern office. Amongst other activities there were banquets at Riverside, Escondido, and Los Angeles. Addresses were made by the market directors, Messrs. Davison, Schofield, Stanley, Brooks and others. There will be a change in the Los Angeles office on January 1. L. E. Brooks, secretary for several years, is retiring and F. R. Williams taking his place.

California Cultivator

Vol. LVII, No. 23 | Los Angeles, December 3, 1921 | One Dollar Yearly

A Poultry Census of the United States

The bureau of the census does not count town lot poultry in its report of the enumeration taken January 1, 1920. It touches only on "poultry on farms in the United States." We are not certain whether California poultrymen, who are specialists, usually buying all their feeds and giving their entire time to the poultry industry, are included in the "farms" of the United States. If not, then California has made a wonderful showing of growth in the poultry industry. Its increase is practically 100 per cent since the census of 1910. We can find no other state in the Union which shows such an increase though we do find some states which show a decrease.

The department of commerce through the bureau of the census announces the following figures from the 1920 census of agriculture for the United States, with comparative figures for 1910:

Poultry on Farms in the United States: 1920 and 1910

	NUMBER		VALUE	
	1920 (Jan. 1)	1910 (Apr. 15)	1920 (Jan. 1)	1910 (Apr. 15)
*All poultry	372,825,264	295,880,190	$373,394,057	$154,663,220
Chickens	359,537,127	280,340,959	349,508,867	140,193,129
Turkeys	3,627,028	3,688,708	12,904,989	6,605,818
Ducks	2,817,624	2,906,525	3,373,966	1,567,164
Geese	2,939,203	4,431,980	5,428,806	3,194,507
Guinea fowls	2,410,421	1,765,031	1,582,313	613,282
Pigeons	1,493,630	2,730,994	537,576	762,374
Ostriches	231	5,361	57,540	1,696,140

*The figures for 1910 include peafowls, pheasants, etc.

The total number of all kinds of poultry on farms on January 1, 1920, amounted to 372,825,264, including 359,537,127 chickens and 13,288,137 other fowls. The total number of fowls on farms on April 15, 1910, was 295,880,190, including 280,340,959 chickens and 15,539,231 other fowls.

Taken at their face value these figures would indicate a marked increase in the number of chickens on farms. As a matter of fact, however, the earlier enumeration of the 1920 census is largely responsible for the greater number of chickens reported. Chick-

(Continued on Page 595.)

Poultry in California---Yesterday and Tomorrow

By Jean A. Koethen

THE poultry industry;—how many of us whose life in the Golden State extends back over 25 years or more can remember when there was no such thing? We kept chickens—that is, some of did—because we had always kept them. We liked to have them running around the place eating up odds and ends of garbage. We liked hunting for nests in strawstacks and mangers. We did not greatly mind if they ranged on our neighbors. Chickens was chickens, that's all. We bought or sold our eggs at two dozen for a quarter in the spring and perhaps 35 cents a dozen in the fall. As recently as 1900 the average citizen had never heard the word "chicken ranch."

There were chicken ranches in California, however, before 1900. In Harrison Weir's Poultry Book, published in 1904, he says: "In the vicinity of Petaluma there is a whole community that makes the production of eggs its only work. It is estimated that about 100,000 hens are kept in the immediate vicinity of Petaluma, and the net profit from these is from $1 to as high as $2.50 each in a year. This town is the most distinctively poultry town in America and its trade is constantly increasing. Here it is that we see to what an extent the trade in eggs may be developed by carefully educating the people to an appreciation of its possibilities."

Two years before Mr. Weir's book was published I. K. Felch, known the country over as the father of poultry culture in the United States, had written in his "Poultry Culture," which seems to have been the first poultry book of any reputation published in the country: "We are not alone in our belief in the magnitude of our faith in the future of this immense interest or industry," and urged that "it is the duty of all men who have the development of this country at heart to encourage the greatest possible production of every commodity that we can produce with profit, and among other industries the poultry and egg business must not be neglected. The farmers must be made to understand that thoroughbred fowls are as much superior to barnyard fowl as the Herefords, Jerseys and Anguses are to the common cattle that roam over our prairies; and when they understand this they will improve their fowls."

It is not easy to fix the date of the awakening of California outside of Petaluma and Sonoma County to the possibilities of the poultry industry. Undoubtedly there was a great awakening between 1900 and 1910. In "California Poultry Culture," published in 1906, Mrs. O. P. Burbridge, editor of the Pacific Fancier, called California the "Poultryman's Paradise," and stated that "California sends over $5,000,000 yearly to the Middle West and Eastern states for market poultry, to say nothing of what is sent the owners of fine breeding plants in the east and Europe," that the demand is increasing all the time, and that the ranches devoted to market poultry and eggs obtain a better average price in California than in any other state in the Union."

The census of 1900 reported 3,047,200 chickens, including guineas, in California and the value of all the poultry in the state as $1,877,489. The census of 1910 reported 5,665,964 chickens, presumably not including guineas, a gain of 85 per cent. Mr. Davison and Mr. Brooks of the Poultry Producers of Southern California estimate the egg production for the state in 1920 at 120,000,000 dozen, selling at an average price of 50 cents.

Poultry Associations

It is impossible to secure exact date as to the organization of poultry associations which began to spring up all over California about 1910. That at Arlington, which was one of the earliest, was organized in 1911. Before that date J. M. Davison, president of the Poultry Producers of Southern California, who was one of the leaders in organizing the Arlington association, says the poultrymen in that district could be counted on the fingers of one hand. This year that association marketed 60,000 dozen eggs with a total valuation of $270,000, and its history is duplicated in a hundred thriving communities all over the state.

With the example of the fruit growers of the state before them poultrymen soon saw that local associations demanded a closer bond of union in a general association, and the Poultry Producers of Southern California was organized in 1916 with headquarters in Los Angeles. Organization of the Poultry Producers of Central California had preceded that in the south. Its headquarters are at San Francisco, and it is still the largest association in the state.

How Many Chickens

The total number of chickens in California is hard to estimate. L. A. Brooks, secretary of the Poultry Producers of Southern California, estimated last May that there were 2,000,000 chickens in Southern California, 8,000,,000 in Central California, 2,000,000 in other districts, making a total of 12,000,000 for the whole state, and his figures are probably more nearly correct than those of the census of 1920 which reports 10,426,648 chickens in the state but does not include backyard flocks and possibly not even commercial flocks, though this does not seem likely. The work 'chickens" which is used in the census report no doubt includes roosters and young stock as well as hens, and as the census is taken in early summer young stock would be in larger proportion than in the fall. It is estimated that there are at least 4,000,000 hens in commercial flocks and probably 2,000,000 more in backyard and farm flocks.

The Backyard Flock

It is a pity the government felt it could not afford to take a census of backyard flocks, for in no branch of the industry has there been a more steady increase. Twenty-five years ago chickens were practically unknown in a city or suburban backyard. Farmers had them, of course, but how could one keep chickens in the city? It was not till Mr. Philo and other enthusiasts demonstrated the possibilities of keeping chickens in small yards or even without any yards at all that the great American public woke up to its opportunity. Now the backyard flock is the rule among middle class householders. Half a dozen hens can be kept in a few square feet of space and will almost keep the family on eggs made from kitchen waste. Many a backlotter has a nice little business in fancy eggs and stock, and any description of the many styles of backlot coops and houses would fill a book. The little family hen has come into her own.

Our Output Today

Some idea of the tremendous growth of commercial poultry keeping may be gained from the report of the Poultry Producers of Southern California for 1920. In the 12 months ending December 31, 4,103,444 dozen eggs were marketed for 710 members at a total valuation of $2,096,450 and 75,000 broilers handled. The membership of the association represents 500,000 hens.

Egg shipments east reached this year a peak never before attained, the central association sending 920 cars to New York and the southern association 120 cars, a total of over 1000 carloads of eggs.

This year the southern association expects to report 5,000,000 dozen eggs handled, for there is easily an increase of 25 per cent since last January, and the central association will probably handle four times as many, making in round numbers 25,000,000 eggs produced by the two associations.

What of Tomorrow

The gain in poultry in California from 1900 to 1910 was 85 per cent; the gain from 1910 to 1920 was 84 per cent, apparently a slight loss but really a remarkable gain when we consider the handicaps under which the industry labored during the war. With those handicaps removed, marketing facilities immensely improved by organization and the opening up of new markets in the east and Europe; with our climate and the fine spirit of leading poultrymen who give their time and effort unstintedly to the improvement of methods, California, now already a leader in the poultry industry, must climb to preeminence. We have climbed steadily, hand over hand sometimes, undaunted by obstacles, undeterred by more than one bad year, visioning as did I. K. Felch the future of this immense industry. If the census report of 1930 does not show a gain of 100 per cent it will be a surprise to all who have followed the remarkable development of poultry work in this great state.

Agricultural News Notes of the Pacific Coast

Northern California

Carload shipment of celery has started from the Antioch section.

The new charter proposal for Alameda County was turned down by the voters.

Cotati, Sonoma County, has established a center of the county farm bureau.

The farmers' public market at San Francsico is handling turkeys on ten per cent commission.

The Northern California Orange and Olive Show was held at Oroville during Thanksgiving week.

Effort to form "Petaluma County" by division of Sonoma has been discouraged by decision of supreme court.

Cinnabar, Sonoma County, has a "meat ring" which purchases whole beeves and distributes meat to members.

Sutter County celebrated on November 30 the completion of the first unit of the Ukiah-Tahoe state highway out of Yuba City.

The chamber of commerce and the farm bureau are cooperating in efforts to secure a fruit and vegetable canning plant for Colusa.

Effort is being made by orchardists to induce the California Prune & Apricot Growers Association to locate a packing plant at Colusa.

The forestry department of the state university will establish station at Santa Cruz in order to make study of second growth redwood.

The San Joaquin County Almond Growers' Association has a membership of 633. It will ship 20 carloads of nuts from the Lodi warehouse.

The new California Canning Peach Growers' Association has been holding very successful meetings in Placer County. A large membership has been enrolled.

Of the 432 hens entering the Sonoma egg laying contest on November 1, 1920, 125 finished the year with records of 200 or more eggs; 18 laid between 250 and 280.

Farm Adviser Harrison of Yuba County, acting with State Market Director Maddox, is listing names of turkey raisers, with number of birds available for holiday market, in effort to get better prices.

State Market Commissioner Maddox is advising turkey raisers that they should receive from 32 to 45 cents at least from their birds and suggesting that they hold back shipments until buyers offer better prices.

In a stockmen's meeting held recently at McArthur, Shasta County, it was suggested that stockmen would approve a shorter deer hunting season for Tehama and Shasta Counties. The 50 stockmen present unanimously agreed.

A survey of reservoir sites on the upper reaches of the Sacramento river, beginning at Red Bluff and extending north, is being made in pursuance of a measure passed by the last legislature in connection with the "Marshall plan."

The Rice Growers' Association of California announces that commencing December 1 the loans made to its members from the funds advanced by the War Finance Corporation on warehouse receipts will be at the rate of six per cent, based upon 90 day notes.

Central California

Citrus fair at Visalia, December 10-17.

Tulare County expects a 20 per cent larger crop of oranges than last year.

Santa Cruz County now has a home demonstration agent in Miss Anne McCormick.

The Livingston plant of the Sun-Maid Growers this year received 600 tons of raisins.

The American Fruitgrowers is planning to build a packing house at Tipton, Tulare County.

The California Wool Growers' Association held its 14th annual convention at Fresno, November 28-29.

Forty counties in California have farm bureau organizations. There are over 600 community centers.

The Milk Producers Association is holding "Realization Meetings" to make known that it is now a paying concern.

Fruitgrowers of Sanger, Fresno County, celebrated with a banquet the close of a satisfactory harvest and shipping season.

Carload shipments of apples from Watsonville are slowing down. To date they are some 400 carloads ahead of last year at the same time.

Topaz Lake in Mono County is now the first storage unit of the Walker River irrigation district, which comprises 150,000 acres of tillable land in that county.

Raisin growers of the San Joaquin Valley will receive, with the final payments now being made by the association, a total for the 1920 crop of over $37,000,000.

California Sun-Maid Growers has made the final pyament for the 1920 crop of Muscats, Thompsons and Sultanas. Malagas and black grapes are yet to be settled for.

Officers of the San Joaquin County farm bureau are: President, S. A. Shearer, Bethany; vice-president, L. K. Marshall, Lodi; secretary-treasurer, Gilbert D. Keitle, Stockton.

The supreme court has affirmed the decision of the superior court on the legality of the organization of the Madera irrigation district, which was attacked by the Miller and Lux interests.

Home department meetings of the San Joaquin County farm bureau will be held at Farmington, December 6; Manteca, 7; Lathrop, 8; Escalon, 9; French Camp, 13; Douglass, 14; Summer Home, 16.

Report of the San Joaquin County Cow Testing Association for October shows highest individual test made by Empress Bergsma DeKol, 91.6 pounds fat. This cow is owned by Chase Bros. of Escalon.

Formal notice has been received from the state water commission of the reopening of the adjudication of the water rights of the Stanislaus river, indicating that the entire question of water rights is to again come up for decision.

Local meetings of the San Joaquin County farm bureau will be held at Douglass, December 6; Lockeford, 12; Ripon, 13; Linden, 14; Summer Home, 15; Escalon, 19; Live Oak (grape pruning demonstration), 20; Bruella, 21; Calla, 23; Lathrop, 27.

Southern California

Southern California Poultry Show at Santa Ana, December 13-17.

Yucaipa Valley in San Bernardino County has hopes of securing a railroad line.

The third annual Orange County citrus institute will be held at Santa Ana, December 8 and 9.

The Carpinteria house of the Santa Barbara Walnut Association has closed the packing season.

A combined poultry and grapefruit show is to be held at Brawley, Imperial Valley, about December 20.

Imperial Valley farm center meetings: Sunset, November 22; Alamo, 24; Central, 24; Acacia, 25.

The Grapefruit Growers' Association of Imperial Valley has organized with J. W. Reed as president.

Ventura County has by far the largest acreage in lima beans of any county in California, over 60,000.

The fire warden of Los Angeles County made 15 arrests this season for responsibility in starting forest fires.

The Victoria Avenue Citrus Association of Riverside last year received 251 carloads of oranges, lemons and grapefruit.

The Farmers' Club of Mound, Ventura County, held its first meeting after the summer vacation, on November 15.

Members of the Ventura Association of the Lima Bean Growers have received second payment of 2 cents on October deliveries.

One of the tractor schools conducted by the state university will be held in Los Angeles County, January 16-21, location to be announced.

The San Dimas Orange Growers Association held its 22nd annual meeting November 12. Shipments the past season amounted to 784 carloads.

Farm bureau members in Imperial Valley made arrangements to ship their turkeys to Los Angeles to be handled on ten per cent basis.

The Imperial Valley fair district has been formally organized with M. V. Oakley, president; G. F. Sale of Imperial, secretary, and V. V. Scott, treasurer.

At the annual meeting of the San Bernardino County Fruit Exchange J. T. Milliken of Highgrove was elected president, John I. Cumming, Rialto, secretary-manager.

Horticultural Commissioner Coy of San Bernardino County is reminding citrus growers and shippers that standardization regulations in regard to maturity before picking will be rigidly enforced.

The Chamber of Commerce of Northern San Diego County held its autumn outdoor picnic at Live Oak Park, Fallbrook, November 12. This was a road meeting to consider means of securing paving of the inland highway by way of Escondido.

The California Walnut Growers Association last week shipped 1,000,000 pounds of nuts by two steamships from Los Angeles Harbor. The railroads have now dropped freight rates on walnuts from $2.33 to $1.75 per hundred to points north and west of the Ohio river.

The Coast and General

The alfalfa weevil has destroyed much bee pasture in Idaho.

Yakima, Washington, will hold its corn and potato show December 10.

Southern Arizona and Northern Mexico have had killing frosts in all low lands.

The western mountain states are shipping out honey rapidly; little is left in beekeepers' hands.

The annual meeting of the Washington State Horticultural Association will be held at Spokane December 12-15.

Yakima County, Washington, will ship out over a million pounds of honey. Beekeepers report heavy losses from poison sprays.

British Columbia and Washington are planning to cooperate in protecting forests for two miles on either side of the international boundary.

Secretary Villareal of Agriculture and Development of Mexico recently placed the cornerstone of the agricultural school building at Leon, Guanajuato.

Approximately 250,000 boxes of Hood River apples will move direct to England this season by boats from Portland. Already some 75,000 boxes have been shipped.

The agency of the department of agriculture and development at Guadalajara is to be stocked with 18 carloads of plows, sowers, cultivators, mowing machines.

There was a large showing of Angora and milk goats at the Pacific International at Portland. The Oregon Mohair Association offered $1000 in four champion prizes.

Clackamas County, Oregon, has seven herds of federal accredited Jerseys, six of Guernseys, one Holstein and one Shorthorn, the largest number of any county in the state.

Florida estimates a 25 per cent reduction in her tangerine crop from last year's yield, and growers are holding back their holiday fruit expecting to get around $4 per field box on the tree.

A two days' grape institute was held at Phoenix and the Mesa experiment station, November 16 and 17. Arizona growers are much interested in planting Thompson Seedless and Malagas for early shipment.

The annual convention of the Farmers' Union of Washington and Northern Idaho will be held at Spokane December 13. President Barrett of the National Farmers' Union will be one of the speakers.

The Whatcom County branch of the Washington State Cooperative Egg and Poultry Association is reported as exporting to Vancouver, B. C., 50 to 75 cases of eggs per day. Stations for the association are maintained at Lynden and Bellingham. A car of standards is reported as being shipped to New York each week.

As a result of the trouble this season in getting experienced packing house help, apple growers and packers of eastern Washington expect to bring up at the next grade and pack conference the matter of having grading taught in the public schools. The Y. M. C. A. has, in past years, conducted such a school to help the Wenatchee, Spokane and Yakima shippers, but this has not met the demand.

The California Livestock Auction Plan and Others

By R. P. Royce

AS A GENERAL proposition the disposal of registered livestock is regarded as the most difficult feature of the industry, and since time immemorial the efforts of men engaged in breeding livestock have been directed toward a satisfactory solution of the problem. As a result two plans of selling have come into general practice, namely, disposition at private treaty and at public auction. The fundamental difference between the two methods is that under private treaty the seller sets the price, which may or may not be accepted by the buyer, while at public auction the advantage is with the buyer.

In a way, California has been fortunate in the fact that as a state we have been a bit backward in the purebred livestock industry. If we must acknowledge that we have comparatively small numbers of registered livestock we can at the same time count ourselves fortunate in being able to profit by the mistakes of our sister states in the conduct of our livestock affairs. It is not intended to draw a blanket indictment against all other states or aganist the purebred industry as a whole. Be it said to the eternal credit of the industry at large, and the personnel of the men engaged, that no other industry—and certainly none in which the element of personal integrity is fundamental—has been maintained and developed to a high place, with so few cases of business defection. Of necessity the industry is such that most of the transactions are consummated in an intimately open manner and under the searching and pitiless spotlight of publicity. Notwithstanding those facts, it is common knowledge that in the older sections of this country many practices have developed and been fastened on the industry that, to say the least, are subject to more or less criticism.

Without going into too minute details, the more flagrant practices may be enumerated as follows:

1. "Wash sales," i. e., selling animals at fictitious prices.

2. Extensive use of personal notes in settlement for purchases.

3. Domination of breeders by a certain class of auctioneers, newspaper fieldmen and publishers of farm and livestock papers.

4. The lack of a uniform plan of selling as regards the various guarantees.

5. The lack of satisfactory machinery for the adjustment of disputes, especially in safeguarding the beginner.

The first mentoned abuse probably has been the source of more criticism from the public than all others. That it has been worked many times is admitted. The common modus operandi of a wash sale is about as follows: The owner of an animal may enter into an agreement to sell said animal for a certain amount, provided the purchaser will agree to report the price at a much higher figure. Or, again, a seller about to hold a public sale will catalog a certain animal and may sell the animal before the sale at private treaty for a comparatively low price with the understanding that the animal will be sent through the ring and bid up to a high figure. In other cases the man holding a sale may make arrangements with some friend to attend the auction for the sole purpose of bidding up to a certain point on different cataloged lots in the hope that in the process some "sucker" will snatch the bait and pay more than the animal would normally sell for under legitimate ringside competition. Another form of wash sales consists of an arrangement between seller and buyer wherein the latter pays a modest sum in cash and gives his personal note for the balance with the understanding that the seller will reciprocate to the extent of the alleged purchase when the second man holds a sale. The notes then balance.

The idea back of such transaction is usually that sensational prices make "good" advertising for both buyer and seller. Were it not for the fact that such deals tend to establish fictitious values in the minds of the uninitiated, the assininity of the business would be laughable, for obviously no one is hurt and few are fooled. Nine times out of ten such deals cannot be kept secret from the rank and file of honest breeders and in the end react only on the participants.

The practical operation of evil number two is obvious solely as a business proposition. Men offered extensive personal credit are very apt to overbuy and when the practice is general and "pay day" come around it places the business on a very flimsy basis. In this respect the registered livestock business is not different from many other lines of business. Indeed, our whole economic trouble of the present is due primarliy to an overexpansion of credit.

Evil number three is a real evil and has been responsible for many of the failures of breeders. Deplorable as it is, it is nevertheless a fact that in the older sections there has developed a clique of auctioneers and fieldmen, who, aided and abetted by certain papers, have fastened themselves upon the purebred livestock business to such an extent that beside them the old time gangs of highbinders were highly desirable citizens. For the most part the three work together on the highly erroneous assumption that they are vital factors in the business of producing and selling livestock. They foist themselves on the new man anxious to get ahead and declare that they can put him across provided he will follow their directions. These "directions" usually consist of establishing the idea that the livestock business is a highly complicated affair, especially the selling end—and that it is given to but few to understand and master the devious ways leading to success. They rightly argue that publicity is essential, but they are not content with a reasonable advertising appropriation based on what one's business can profitably stand. On the contrary, they attempt, and in all too many cases exact all that the traffic will bear and invariably insist that such publicity be handled by these alleged "expert" fieldmen, many whose stock in trade is nothing more than a monumental amount of nerve and the morals of a second story worker. These men often bleed the breeder to the point of whiteness—even going so far as to threaten the success of a seller by exerting their influence to keep the public away from his sale or farm. The situation in the Middle West reached the point where a man about to hold a sale was pounced upon by fieldmen of a half dozen or more papers and literally sandbagged into spending vastly more for publicity than his offering justified.

Working in close harmony with some of these fieldmen are certain auctioneers who pose as authorities on one or more breeds of livestock and who set up the claim of possessing marked sales ability and are therefore in a position to render most valuable service—for a price, of course, said price varying with the times. Half these "birds"—and birds they are, vultures, in fact—are ignorant to the point of astonishment, and had a kindly Providence not endowed them with a bull-like bellow and a set of leather lungs, they would have difficulty making a living digging ditches.

Naturally a breeder selling under such conditions piles up a selling cost that is entirely excessive and which in the end often is the underlying cause of many a man's failure in the business.

The reader is not to understand that all fieldmen and all auctoneers are of that caliber. Throughout the country are many men—fieldmen and auctioneers—who represent extremely high types of men, who have real ability and because of their sincere purpose and honesty hold the respect of all. Such men have been and are vital cogs in the livestock business.

Number four is rather more an unfortunate situation than a real evil. Under existing selling methods in general vogue each man makes his own selling plans and writes his own warranties. Common practice has largely been responsible for the development of a general plan, but there has never been a widespread or concerted effort to establish a uniform plan. The general scheme of selling as it is commonly operated, except in certain association sales, has not been such that any machinery, aside from the courts, has been provided to adjust claims and disputes between buyer and seller. Another common evil in the purebred livestock business has been the difficulty buyers often experienced in getting transfers and pedigrees promptly from the seller. Such details are nearly always forthcoming in time, but the delay causes much annoyance. Still another feature of Eastern sales that little reason exists for is the tendency to stage the event along lines of a three ring circus, with the auctioneer in the role of ringmaster and the various ring assistants doing the clown work all to the tune of a lot of noise and hullabaloo. Surely there is no real reason for such methods when an auction sale is or should be nothing more than a common business transaction.

With full knowledge of the above features of the auction business, a number of California breeders, about the time the public sale developed in this state, gave serious thought to the problem of selling and set about to see if such practices could not be headed off in California—or at least minimized. Finally a plan was worked out and put in operation in the fall of 1916. That plan, its operation and the results to date will be described in the next issue.

SELLING OF PURE BRED LIVESTOCK

The year just drawing to a close has been one of the most trying periods recorded in American agriculture. With few exceptions the products of the ranch and farm have been forced to low price levels. The livestock industry has faced depression along with other agricultural commodities, but it can be definitely stated that this industry has been able to weather the storm in an easier fashion than allied lines. That very fact is further proof that livestock is the safety valve of agriculture. In good years livestock usually furnishes a profit in keeping with conditions, and in the lean years crops can invariably be marketed through livestock to the best advantage. In normal times good livestock of any sort, when handled without attempts at speculation, furnishes a satisfactory and stable outlet for crops of all kinds. In short, year in and year out there is no safer, more profitable business in agriculture than the production of well bred livestock. Because the California Cultivator is more convinced than ever that livestock farming must, and eventually will, occupy a larger place in the operating plans of California ranchers, the opportunity is taken to again reassert our faith in this fundamental industry and to offer assurance of our readiness at all times to aid in whatever way we can.

The California Cultivator has taken high pleasure in the friendly and substantial support accorded it by the livestock fraternity. This support has made it possible for this paper to occupy the leading place among western papers, a fact that, we take it, is evidence of appreciation of the policy of this journal. We do not assert for the moment that we take undue credit to ourselves for the splendid development the industry has undergone the last few years. We have simply aided as we could the individual and cooperative efforts of the breeders of California. We have at all times proceeded on the theory that California breeders, as a whole, are entirely capable of directing their own affairs, and we have been especially pleased to know that the business is on a decidedly better basis in this state than elsewhere. True, pure bred values have receded somewhat from the peak point of two years ago, but the bottom has in no instance dropped out, as has been true in the older sections, and at the present time it can be truthfully said, and easily demonstrated, that California breeders are in an uncommonly fortunate circumstances as compared to the breeders in other sections.

That such a condition exists is due, we believe, to the advanced methods of selling adopted by California breeders. Profiting by the mistakes of older sections and following in principle the general trail of cooperative enterprise blazed by California fruit growers, a system of selling livestock has been devised, unlike that followed in any other state. That the plan has proven successful is indicated by the general adoption of the method; the range of values registered and the approval vouchsafed the plan by eastern men who have taken pains to inquire into the operation.

Generally speaking, the plan has been indorsed by practically every agency within the state. But for several years there has been a constant effort made by a San Francisco agricultural journal to undermine and destroy the plan. Success has in no case attended these malicious efforts at destruction, but we believe the time has arrvied to inform the livestock public of California as to the more intimate operations of the California plan and the reasons for the constant effort being made to destroy it. This we hope to be able to do in this and subsequent issues.

This Month in the Vegetable Garden

Southern California

By D. F. Reichard

FROM the farmer's standpoint we would say it looks as though we might have a dry winter, but the winter is young and it is possible that before this month is over we may be wishing for sunshine. The vegetable grower ordinarily does not have to wait for rain because he is so situated that he can have all the water he wants when he needs it. Should it not rain during December it would be a wise plan to arrange to give the garden a thorough soaking before the first of the year.

The thing to attend to the first of this month is to get everything cleaned up if not already done. Get any crops that are matured under shelter for future use. We refer to squash, pumpkins, dry beans, corn, peppers, sweet potatoes and the like.

When the ground is cleaned up and the refuse either burned or put on the compost pile, it is a fine plan to scatter over the plot several inches of stable or dairy manure to be worked into the soil either by leaching or by turning it under to decay and incorporate itself with the soil. If your land is heavy use coarse manures and apply gypsum at the rate of 100 pounds to 1000 square feet on lighter soils, unless they are inclined to be sour, then use lesser quantities of gypsum and manures of more concentrated form.

The gardens where hardy winter vegetables are growing, even though cultivation has been faithfully kept up, will need irrigation to keep the young stuff in good growth. The cool weather retards plant growth materially so it is necessary to encourage them as much as possible with fertilizers and water.

Plant any of the hardier vegetables the latter part of this month for successive crops, such as beets, carrots, radish, turnip, spinach, onions, peas, lettuce and sets of cabbage, cauliflower and kale. In protected locations early potatoes may be put in. Start seeds of early tomatoes, peppers and egg plant in hot beds for plants to be set out during February and March.

Prune all trees and shrubbery, thin out and prune back all bush berries and thoroughly spray for control of fungous disease with lime-sulphur solution or Bordeaux mixture.

Look out for gophers and squirrels. Trap them if possible; if not get after them with poison or gas—get rid of them. Now is the time to do it, before the new crop comes on.

Northern California

By A. R. Gould

RECENT rains have been very helpful to our garden operations and will make the work of preparation easier. Right now is the time to get every plot in good order for the next season's planting. Refuse should have been cleared from the plots and they should be trenched deeply and manured. Sour soils should be limed. Seeds may be ordered this month, and when sowing adopt the rotational system, but to do this you should know what the plots were used for last season. The wise gardener has this valuable knowledge in his notebook, also yields, etc. Use plenty of manure on poor soils; it pays every time. Where farmyard manure is unobtainable use bone meal or dried blood. Keep the cultivator or hoe busy through the lines of crops sown recently.

Beets

Varieties sown last month should be carefully thinned to six or eight inches apart. If you failed to sow last month as advised, sow Early Egyptian and Detroit Dark Red.

Lettuce

Thin out to six inches apart Los Angeles and Paris Cos sown last month.

Radish

These delight in a rich soil, and winter varieties such as Rose Winter, Black Spanish and White Winter may be sown in rows 18 inches apart. Sow the seed thinly.

Onions

This is a very important crop and requires a rich soil and careful cultivation during the growing season. Early varieties may still be sown, such as Early Pearl, Red Bermuda and White Bermuda. Towards the end of the month the main crop varieties may also be sown. Standard varieties are Ailsa Craig, Australian Brown and Prizetaker. Southport Red Globe is also of mild flavor and a good keeper. This plot should be well prepared and the surface well pulverized before sowing. These should be sown in rows two feet apart to allow for cultivating with the wheel cultivator. Onion sets or miniature onions may still be planted for early crop.

Turnips and Kohlrabi

Both seasonable crops and may be sown in rows about 18 inches apart in fairly rich soil. They require plenty of moisture and this will make them sweet and tender. Early Snowball and White Flat Dutch are the best turnips, while Early White kohlrabi is excellent. The tops may also be used as a vegetable.

Spinach

An excellent spring crop. Seeds of Bloomsdale Savoy and New Zealand varieties will furnish a supply for some time, as it may be cut constantly. Sow in rows 18 to 20 inches apart.

Peas

By sowing at intervals of a few weeks a succession may be secured. The soil must not be too heavy and should be fairly rich. There are a number of varieties, tall and dwarf, and the last named are most generally grown as they need little support, and when grown as a commercial proposition this is quite an item. However, for the home garden a few of the tall growing types may be grown, such as Telephone, having pods of large size, and Thos. Laxton. They should be sown in rows at least three feet apart, and wire or bamboo stakes may be used for support. The dwarf varieties to sow now are Little Marvel, Premium Gem and American Wonder. Carter's Daisy is one of the newer varieties and bears large, handsome pods. Improved Stratagem is another dwarf variety of merit. Dwarf types may be sown in rows two and a half feet apart. Birds are usually very fond of the young shoots as they show through the ground, but dusting

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with arsenate of lead will act as a preventive.

Asparagus and Rhubarb

The ground should be dug and liberally manured before planting both these crops, as they are very gross feeders, and are really profitable to grow. Plant strong crowns in trenches at least six inches below the level of the bed and the trenches should be three feet apart. Best varieties of asparagus are Palmetto and Conover's Colossal. Varieties of rhubarb are Myatt's Victoria and Crimson Winter. Beds of these established last year should be top-dressed with good farmyard manure, the surface being well dug.

Parsnips

Thin out those sown last month as soon as the seedlings are an inch high, leaving the plants six inches apart.

Berries

Strawberries, raspberries, blackberries and loganberries may all be planted except in the extreme north where the ground will be too cold. The plots must be well trenched with manure and well prepared. Strawberries should be planted on ridges two feet apart. The best varieties are Improved Everbearing, Marshall, Gold Dollar and Banner. Good varieties of raspberries are Cuthbert, St. Regis and La France; of blackberries, Mammoth and Himalaya Giant. Blackberries and loganberries may be planted along the fence or boundary line.

Southern Arizona

By M. E. Bemis

BEETS, carrots, lettuce, parsley, parsnips, peas, radishes, spinach and turnips may be planted in December. The following plants may be put out: cauliflower, cabbage, strawberries. Germination of seeds may be more satisfactory than in the early plantings. During the early fall months such seeds as beets and lettuce are sometimes irregular in germination. Later plantings usually show a very much larger percentage of plants. Radishes, turnips, mustard and sometimes beets are easier to make germinate than some other vegetables. Liberal use of seeds under irrigation conditions is advisable. Notwithstanding advantages of irrigated gardens, we have to admit that germination is one of the serious problems. In planting at this season of the year it is well to remember a little kale and Swiss chard for the chickens.

Some who have had considerable experience with the strawberry plants put out at this season of the year say they will do just as well or better than earlier or later plantings. The well known Arizona Everbearing has proved as desirable and probably has more friends than any other variety known here. A sandy, loamy soil, if well fertilized so that there is humus to lighten it produces well, and this type of soils is stronger in fertility than lighter soils. The strawberry bed should be ridged, and for horse cultivation the rows should be 30 to 36 inches apart and ridges six to eight inches high from the bottow of furrows, with plants 12 to 14 inches apart on the sides of the ridges. Only strong young plants should be used and these should be set a little deeper than they grew in the soil from which they were taken, although not deep enough to cover the crowns. The Blue Ribbon and Texas, also the Lady Thompson, do well.

In cool weather growth of plants is slow but by cultivation a moderate root growth is induced and earlier maturity hastened.

Garden vegetables as well as fruit have been high this past year, and the prospect now is that they will bring good prices the coming year. The farmer who has depended upon his general farm crops bringing enough to pay for an abundance of vegetables and fruit or, to put it another way, the farmer who has figured that he could not afford the time taken from his general farm work to care for a garden, has been out of luck. He has paid dearly for his economy of time—or done without the vegetables. December is none too early to make a resolution to do better this coming year.

A frost warning station will be established by the weather bureau at San Bernardino.

This Month in the Ornamental Garden

Northern California

By A. R. Gould

PLANS should now be laid for the season's work. Soil preparation is very important and manure should be applied to all poor soils. Much trouble in gardens is due to lack of fertilizer. Choice flowers grow on rich soil and often in abundance so that you will accomplish much by getting your garden into shape this month.

It is still bulb planting time. Hyacinths and Darwin tulips may be put in now and even daffodils, Emperor, King Alfred and Empress. Tulips are very effective grouped in solid colors among the shrubbery and should be planted 4 inches deep. Hyacinths may be massed in beds, and these last in flower a considerable time, flowering before the tulips.

Lawns should be given attention also this month and preparation should be made for putting in new lawns. The old turf should be well spaded under and manure applied which should be well decayed. Sheep or cow manure is excellent.

Annuals For Spring

Certain hardy annuals will provide early flowers if planted now. Snapdragons and nemophila may be sown where they are to flower, also phacelia and eschscholtzia, godetia, stock and clarkia in variety may be sown in the seed bed and transplanted.

Propagation

Cuttings of privet, euonymus, lonicera nitida and hydrangea may be inserted in sandy soil in a fairly warm border. Keep fairly moist.

Sweet Peas

The winter flowering types should be making strong growth, and aphis may be giving trouble, but these can be destroyed with "Black Leaf 40." Keep the rows well cultivated and towards the end of the month an application of liquid manure should be given. A further sowing may be made now for succession.

Dahlias

Tubers ere this should have been dug and stored. New varieties should be selected and an order placed for the best now. There is an endless number of varieties on the market.

Pansies and Violas

These are very popular flowers and should be planted out at once if an early spring display is desired.

The Perennial Border

This should be well cleaned and all dead stalks removed. Large clumps may be dug up and divided of all such as aster, iris, canna, chrysanthemum, geum, aquilegia, Oriental poppy, delphinium, helianthus and Sweet William.

Japanese Iris

These lovely iris delight in a damp situation and may be secured in a beautiful range of colors including double white, French gray, azure blue, deep purple, lilac and lavender. Plant near a pool.

The Madonna Lily

This beautiful lily flowers in late spring and is well worthy of a place in your garden. Planted near the stately delphiniums it will make a beautiful combination. It is fairly easy to grow and should be planted without delay. Place in groups of three or five bulbs at least six inches deep in fairly rich soil.

Roses

Roses may be pruned and cuttings inserted for propagation. All beds should be dug thoroughly and manured. Climbing roses will need tying in and all dead wood should be removed.

Planting Calendars for Arizona and Southern California next week.

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2,000	48	8	1½	5	11	975	52.50
2,500	60	8	4	6	11	1,145	60.75
3,000	71	9	1½	6	11	1,270	69.00
3,000	71	8	5	7	11	1,290	69.00
4,000	95	9	10½	7	11	1,555	87.00
4,000	95	9	2½	8	11	1,580	87.00
5,000	119	10	11	7	11	1,745	98.25
5,000	119	10	3½	8	11	1,790	98.25
6,000	143	11	4	8	11	2,010	111.00
7,000	166	12	1½	8	11	2,160	118.50
8,000	190	12	3	9	11	2,375	130.50
10,000	238	13	7½	9	11	2,770	150.00

Made from 3-inch Clear Air-dried Redwood

Capacity Gals.	Capacity Bbls. 42 Gals.	Outside Dimensions Diameter ft.	Diameter in.	Height ft.	Height in.	Shipping Wt. Lbs.	Price
10,000	238	13	10½	9	11	4,660	$ 225.00
12,000	285	13	10½	11	11	5,370	258.75
15,000	357	15	6	11	11	6,080	303.75
20,000	476	17	10	11	11	7,280	352.50
25,000	593	18	4	13	11	8,510	412.50
30,000	714	20	2½	13	11	9,800	465.00
40,000	952	23	0	13	11	11,300	557.25
50,000	1190	24	0	15	11	13,400	675.00
60,000	1428	26	3	15	11	15,100	742.50
70,000	1666	28	4	15	11	16,700	843.75
80,000	1904	30	3	15	11	18,000	922.50
90,000	2142	30	2	17	11	19,800	1005.00
100,000	2380	30	0	19	11	21,100	1102.50

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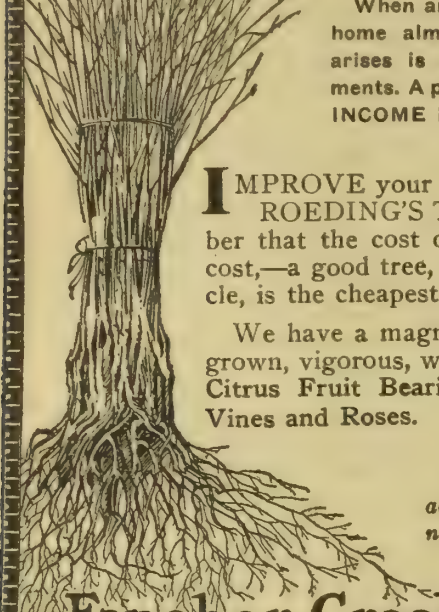

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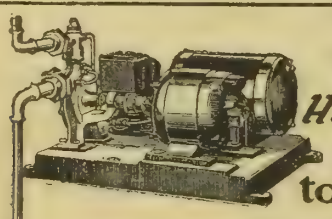

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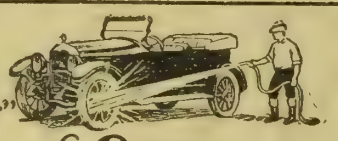

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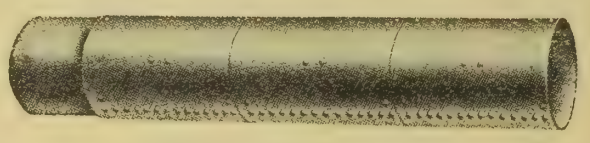

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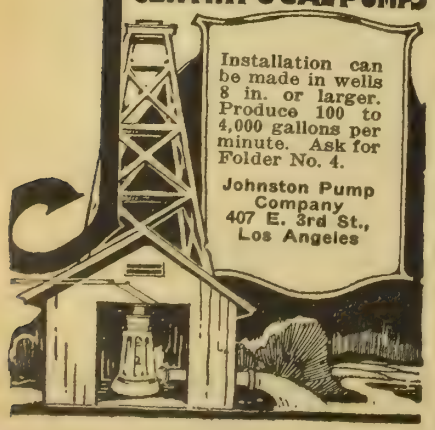

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Citrus Fruit Shipments Increasing

E. E. Kaufman, agricultural statistician of the California cooperative crop reporting service has compiled a table which reveals some very striking things in the growth of the citrus industry. The season of 1916-17 produced the greatest crop of oranges the state has ever known unless it be 1921-22, which is not yet recorded. The prediction for this season is 22,000,000 boxes.

Year—	Navels	Valencias	Misc. Oranges	Grapefruit	Lemons
1916-17:					
So. California	11,237,938	4,990,222	788,106½	86,021½	2,840,858½
Cen. California	1,722,134	314,956	11,352½	46,343	92,723½
No. California	308,056	.....	2,118	364	710
Total	13,268,128	5,305,178	801,577	132,728½	2,934,292
1917-18:					
So. California	1,546,443	3,965,165	748,742	92,007	2,447,572
Cen. California	815,235½	268,801	12,709	67,929	66,657
No. California	106,344	245	1,241	803	144
Total	2,468,022½	4,234,211	762,692	160,739	2,514,373
1918-19:					
So. California	7,465,590½	6,708,412	905,854½	211,329	3,801,050½
Cen. California	1,270,003½	247,480	7,489	98,974	122,274½
No. California	119,720	.....	2,494	558	1,852
Total	8,855,314	6,955,892	915,837½	310,861	3,925,177
1919-20:					
So. California	5,920,197	6,472,131	676,431	139,959	3,371,413
Cen. California	1,483,173	829,605	2,077½	123,029	126,273½
No. California	140,671	.....	3,992½	42	1,380
Total	7,544,041	7,301,736	682,501	263,030	3,499,066½

Standards for California Certified Seed Potatoes

IT IS understood that potatoes for seed certification should first conform to the general standards governing "U. S. No. 1 market stock." This is interpreted as being practically free from dirt or other foreign matter, frost injury, second growth, growth cracks, cuts, bruises, or other damages caused by diseases, insects or mechanical means, with no more than a three per cent variation by weight from any of the above details. It is also recommended that certified seed be marketed in new sacks or containers.

Size

The seed size standard shall be from two to twelve ounces for long varieties and two to ten ounces for round varieties, with a variation tolerance of five per cent by weight.

Varietal Purity

A rigid adherence to trueness to name is required. Since the practice of renaming old varieties or changing the names of named varieties through ignorance or with malicious intention to defraud is detrimental to the potato industry, a standard on nomenclature and the use of the "Group Classification and Varietal Description of Some American Potatoes," by Prof. William Stuart of the United States department of agriculture, is adopted.

Pests and Diseases

No potatoes shall be certified that show by inspection on vine or tuber the presence of the diseases known as black wart (Chrysophlyctis endobiotica Schilb.), powdery scab (Spongospora subterranea [Wallr.] Johns), and violet rhizoctonia (Rhizoctonia crocorum [Pers.] D. C.), and the pests, eelworm (Heterodera radicicola [Greef.] Mul.), and potato tuber moth (Phthorimoea operculella Zeller).

Other Infections

Scab. No potatoes shall be certified which show upon the tuber at final inspection more than five per cent scab (Actinomyces scabies Thax. [Güssow]), with no deep scab pustules permissible. Rhizoctonia (black scurf) (Corticium vagum solani Burt.). More than 12 per cent shall disqualify and no scurf spot larger than one-eighth inch in diameter shall be permitted.

Vascular Infection

Not to exceed five per cent of the tubers, as determined by transverse sections of stem end of tuber in the final tuber inspection shall be permitted. Vascular infection shall be interpreted as meaning wilt diseases as Fusarium oxysporum (Schlecht), Verticillium albo-atrum (Reinke and Berth). Bacillus phytophthorus (Appel et al.). Late blight (Phytophthora infestans [Mont.] de Bary.). Not to exceed two per cent of the tubers infected with late blight rot spots, and no spot to exceed one-half of an inch.

Vine Inspections

Inspection of potatoes is not only necessary after the crop is harvested, but also during the growing season to determine trueness to type and variety, and freedom from disease. This shall be accomplished by an inspection of the potato plants in the field at blooming time, and again just prior to maturity of the plant.

Bloom Time Inspection

Variety: More than five per cent varietal mixture at this inspection shall disqualify for certification. Furthermore, a variation in type of plants in excess of 10 per cent, indicating degenerate or inferior strains of a variety shall disqualify for certification.

Diseases: More than 10 per cent of the plants at this inspection affected by the following diseases, or more than five per cent affected by any one of the following groups of diseases shall disqualify the field for certification:

Well defined "curly dwarf," "leaf-roll," "mosaic," or other inherited weaknesses, combined.

"Wilt" diseases and "blackleg" combined.

Rhizoctonia (black scurf).

Immediately following the bloom time inspection all diseased or objectionable plants must be rogued under the supervision of the inspector.

Second Plant Inspection

At this inspection the tolerances governing certification shall be: Not to exceed five per cent of mosaic, curly drawf, leaf roll and other inherited weaknesses; not to exceed two per cent of diseased plants from any one of the following diseases: Wilt, blackleg and rhizoctonia, nor a total of four per cent of diseased plants from these three causes. Roguing of the field must again follow the second plant inspection. If 10 per cent or more of the vines show serious infection of late blight the field shall be disqualified for certification. The uniformity and quality of the product as seed shall be determined at the second inspection, at which time not to exceed five per cent of the hills shall each weigh less than 30 per cent of the average 100 consecutive hills.

Final Tuber Inspection

This inspection shall be after harvest and after final grading for the seed market and shall conform to the conditions as hereinbefore specified.

The Certification Tag

There shall be attached to each bag or container of certified seed a certification tag, stating thereon that the package contains certified seed potatoes, also giving name and address of the grower, the variety of the potatoes and the year grown.

THE LAND O' PICKLES

By Ernest Braunton

COMPTON, in Los Angeles County, is the headquarters for cucumber pickles in the south end of the state. There are located two pickle factories so that growers find a home market for their entire product. On the lower lands toward the coast too much alkali in the soil divides the cucumber lands from those given over to sugar beets, for cucumbers are not tolerant of much salt until after they are picked.

While earlier and later plantings are made for the general market, "cukes" for pickling are planted from May 1 to June 15. About 75 per cent of those grown are known as Chicago Pickling, a variety introduced by a large pickling concern. A few grow Nichols' Medium Green and other varieties. For the general vegetable market Klondike is the leading cucumber.

The seed is drilled in rows five feet apart. Some plant on ridges, some on the flat. The plants are first thinned to about a foot apart, to see how the crop grows. Later they are thinned to about three feet apart and allowed to mature. Instead of ridging growers who plant on the flat plow toward the row only so that finally vines are on broad ridges. They are so maintained, for cucumbers must be kept out of the irrigation furrows.

After planting in damp, smoothed soil the crop is irrigated at about one, two and three months, when the picking commences. After this the irrigations are frequent, some growers running the water three times a week until toward the end of the season. Such cultivation is practiced as this saturated condition of the soil will allow. Picking, in the fullness of the season, is done every other day if the crop is a good one. The harvest season runs about 60 days and normally the crop is from 7 to 10 tons an acre.

This year proved a very poor season, but the 1920 crop was a booster and some growers netted $400 an acre. The Compton acreage last year totaled about 200. The picklers prefer the cukes small, an inch to an inch and a half. Of course, the growers would like to have them larger, but the smaller size commands the highest price. The next size runs to three and a half inches, and the third, or largest, size to five inches. One grower stated he sold his crop in two sizes, one to three and a half inches, for which he received $54 a ton, and the remainder, from three and a half to five inches, for which he received $20 a ton.

Growers in the Van Nuys-Zelzah section of the San Fernando Valley are going to plant more extensively to pickling cucumbers this year, and a large pickle works has agreed to buy the entire crop at prices agreed upon previous to planting and to build a pickle factory if the growers will get signers to an agreement to plant a total of 100 or more acres. This agreement is now being circulated and those most active in the movement believe the necessary acreage will be secured.

COST OF GROWING BEETS

Ventura County farm bureau has a sugar beet committee and it has sent out questionnaire as to costs of growing. From the answers received the members report:

We, the undersigned committee, beet growers' department of the farm bureau, submit the following report:

Average cost of production tabulated from the returned questionnaire of 50 growers:

Work.	Per Acre.
Fall plowing	$ 4.86
Seed and preparing seed bed	8.96
Planting	.80
Rolling and cultivating	2.72
Thinning and hoeing	9.54
Plowing out	5.02
Topping	8.44
Hauling	6.77
Taxes	10.32
Total cost per acre	$57.53
Average tons per acre	9.02
Average per cent sugar	18.4
Total average receipts, acre	58.26
Net profit, per acre	$ .73
Gross factory receipts per acre, less amount paid rancher	$91.11

Signed by the committee: John R. Powers, Stanley R. Pidduck, Frank Eastwood, Walter Rowe, John F. Petit, Otis Snow, E. G. Laubacher, Earl Hart, Peter Hartveld, Albert Petit.

WINTER POTATOES

The late crop of potatoes in the San Gabriel-El Monte section of Los Angeles County will be lighter than usual and the potatoes smaller; still, a paying crop. Last year the first frost that injured the tops came on December 8; this year, November 19. By that much is the crop retarded in maturing. In both years some green leaves were left to function, and this foliage activity may be prolonged by favorable weather. The stalks are not injured and of course will send down much starch into the tubers unless soon frozen. Some potatoes in this district were planted a little late and the frost caught immature tops. In these fields the crop will be lighter and the potatoes smaller than the average for that section.

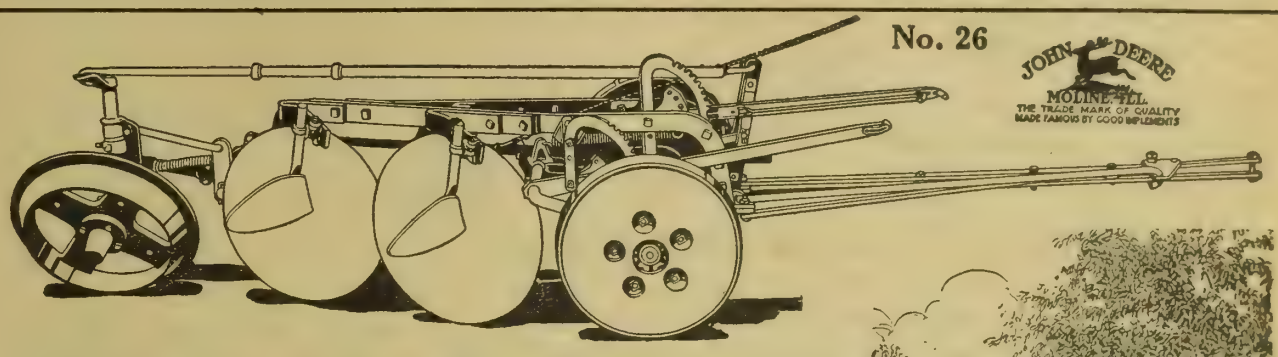
A visit to the Pasadena sewer farm lands uncovered the information that the McSweeny interests will "pull out" of that location and enlarge upon their acreage in the Temecula district of San Diego County. Hereafter they will confine their activities more closely to the production of certified seed potatoes in which it is conceded Temecula has no superior on the Coast. Except for trial plats the McSweeny plantings are all of Temecula seed. That grown there has produced the heaviest and best crops. The reslutant crop, grown on the Pasadena sewer farm lands, was the next year taken back to Temecula for trial, in part, and some replanted on the sewer farm. In neither location did the sewer farm seed measure in production up to the Temecula seed. After years of this experimental interchange, with similar results in the San Fernando Valley, Shafter and Weed Patch sections of Kern County, and elsewhere, E. D. McSweeny says: "It is Temecula for me." He thinks differences in climate the most important factors affecting seed potatoes.

Estimates of New Mexico corn crop this season total something over 7,000,000 bushels.

HE WILL NEXT TIME

"One of the most expensive mistakes I ever made was in trying to finish up the day's work with my tractor without getting a new supply of oil. I was nearly done with the day's work and had less than a round to finish. I didn't want to stop to get a new supply of oil and I just kept on driving. From that time on I had trouble with my tractor and it cost me over $100 to remedy the damage that I had caused by a few minutes' carelessness." It is even more necessary to have an extra quart of oil in the fuel box of your tractor than to have an extra gallon of gasoline in your motor car—one is dollars and cents—the other is inconvenience—Allis Chalmers Nose Bag.

The Oregon Cooperative Hay Growers' Association shipped 500 tons of alfalfa hay early in November to Atlantic ports via the Panama Canal. Growers netted $12 per ton f. o. b. Hermiston, which was higher than the local market at that time.



No. 26

JOHN DEERE MOLINE, ILL. THE TRADE MARK OF QUALITY MADE FAMOUS BY GOOD IMPLEMENTS

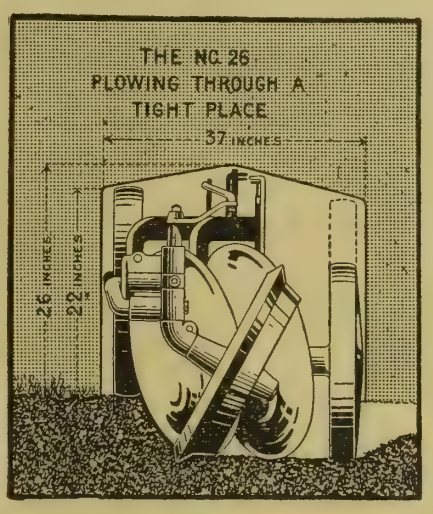
For Good Plowing, Irrigating or Subsoiling in Orchards

The John Deere No. 26 is a real three-in-one orchard plow. For plowing, it has important advantages possessed by no other make. By using the simple, inexpensive ridging attachment, you can check or ridge the soil for effective control of irrigation water.

Another simple attachment adapts this plow for subsoiling while plowing.

Gets under the low limbs, up close to the row. Only twenty-six inches high when plowing six inches deep. Only thirty-seven inches wide. No projections to interfere. Hitch permits wide offset of plow to right or left of tractor for work close to row.

Showing No. 26 with ridging attachment preparing soil for proper irrigation. Attachment costs very little and does away with necessity of buying extra implement for ridging.



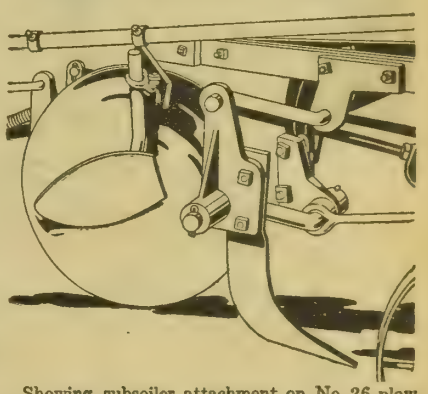
The No. 26 is unusually narrow and low—no interference with tree trunks or limbs.

Stiff Hitch—a great disc-plow improvement. Being stiff, it tends to hold the plow in the furrow when offset, and its control of the rear furrow wheel makes possible short turns and close work at ends of orchard.

Floating Rear End is another important feature. The set-screw collar on the rear axle may be left loose to permit rear end of plow to rise over a root without carrying weight of rear wheel—a great aid in preventing damage to large roots.

Compound power lift raises discs unusually high. Frame built over discs, providing unusual clearance. Discs and disc bearings same as on large John Deere disc plows

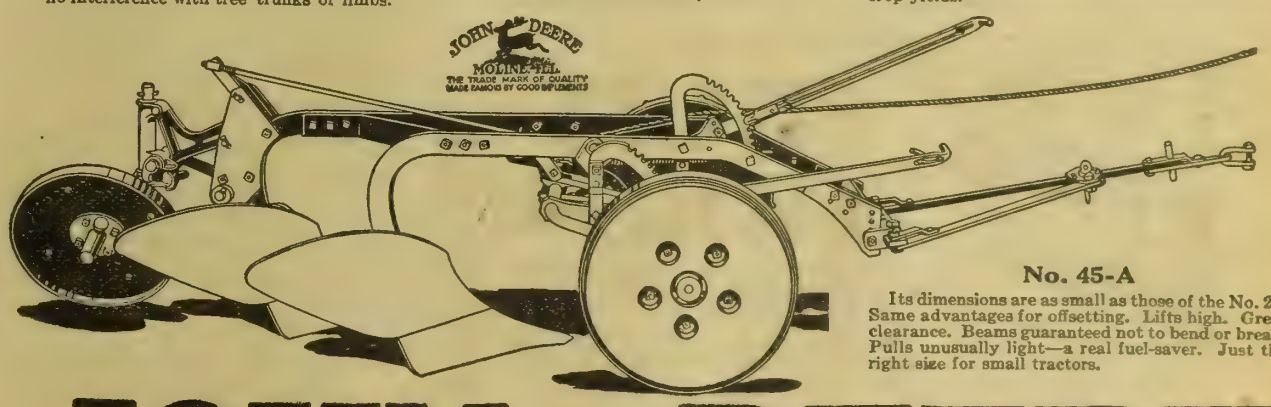
If you need an orchard disc plow for small tractor, get acquainted with the No. 26. If you need a moldboard plow, investigate the 45-A, shown below. Write to us today for a folder, describing the one in which you are interested.



Showing subsoiler attachment on No. 26 plow. Replaces one disc. Controlled by power lift. Permits plowing and subsoiling in one operation with small tractor. Subsoiler breaks up plow pan and forms deep bed of aerated mulch—a process that saves much irrigating water and greatly increases crop yields.

John Deere Plow Co.

San Francisco, Cal.



No. 45-A

Its dimensions are as small as those of the No. 26. Same advantages for offsetting. Lifts high. Great clearance. Beams guaranteed not to bend or break. Pulls unusually light—a real fuel-saver. Just the right size for small tractors.

JOHN DEERE

JOHN DEERE MOLINE, ILL.

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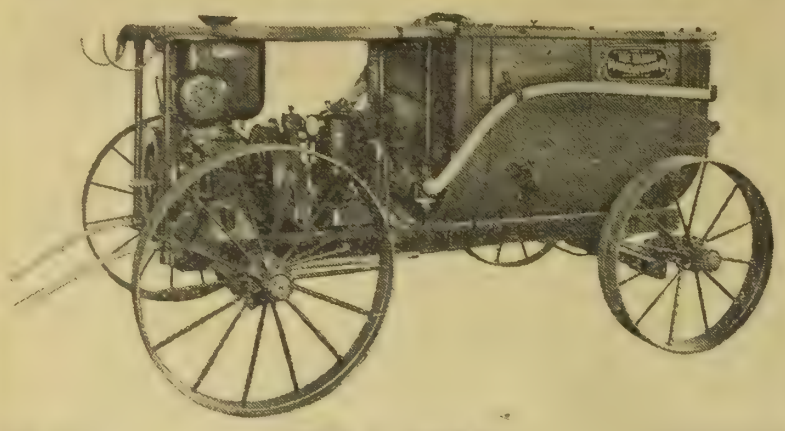

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Fresno, California

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Submergence of Centrifugal

Will variations of the depth of submergence of a centrifugal pump vary amount of water the pump will discharge, the pull on both motor and pump remaining the same? In other words, if the water level in well is lowered, will the amount of water delivered vary because of less submergence of the pump?—Subscriber, Alta Loma.

If the water level is constant, and the speed constant, there will be no difference in amount of discharge whether the pump is a reasonable distance above the water, that is, within good suction distance, or as many feet under water. In other words, if the water can have free access to the pump the relative position of the pump in the well or pond will not affect the flow from the discharge pipe. If the speed of the pump is proper for a particular water level and the water should go above that level there will be a diminution of discharge unless the speed of the pump is increased. It would be possible to have so much change in level of the water in a well that the pump would cease to discharge water even when the pump was running under water. This can happen only with centrifugal pumps. —J. B. N.

Bamboo Scale

Am sending giant bamboo stalk infested with scale which seemed to colonize at the leaf or tiny branch axils. The scale are sometimes nearly one-eighth inch in diameter, though rather elliptical in shape, very light buff or gray color.—Subscriber, Los Angeles.

This scale was submitted to Mr. Edouart of the Los Angeles County horticultural commission and he says it is Asterole caneum Bambusae and is not at all serious, in fact, its attachment to the bark of the bamboo is so slight that a stream of water under pressure is sufficient to knock it off. If one is not where pressure water is at hand they are easily removed with brush and strong soap suds.

Native Bay or Laurel

I inclose a twig cut from a small tree I found growing under an orange tree. It is strange to me, and as it looks well I wish to transplant it. Is it a desirable tree to grow or is it a shrub?—Subscriber, Covina.

Your plant is Umbellularia Californica, our native bay or laurel. It is a very nice, clean, slow growing tree of ultimate large size, a pleasing shade of green at all seasons, with an aroma pleasing to some but very pungent and penetrating if leaves are much bruised or macerated. It is of easy culture, grows slowly in very dry locations yet rapidly among willows in stream beds. It is not easy to transplant, so care should be observed in its removal.

Commercial Carnations

Would like to grow some standard cut flower for market. Soil light, sandy. Prefer a flower that is tough and not delicate to handle, a good keeper that will ship or travel well. Can I plant now and how should flowers be kept for packing or carrying to Los Angeles?—Subscriber, San Gabriel.

Of standard market flowers none are hardier or tougher or a better keeper than carnations. They are much less exacting in all ways except in irrigation than are roses; also they thrive best in light sandy soil. The young plants are best planted in early spring; nothing would be gained by planting now. Flower stems must be kept from young plants during summer, for "holiday" crop. Whites are most in demand, light pinks second. Well watered plants always have flowers in good condition for picking. Pick at night for next morning's shipment and keep in deep water over night, but heads not immersed; in a cool but not drafty place. Six hours is the least time stems should be in water.

Patchouli Perfume

In response to an article, "Patchouli Patches," in our issue of November 12, a chemical firm of New York City, with a branch factory in California, writes: "We are interested in patchouli and would like to cultivate here. Can you put us in touch with any one that has a patch of this herb? We would be glad to pay $100 a ton for the dried herb, baled like hay, and could use between five and ten carloads a year."

As stated in our former article, the patchouli plant, Pogostemon Heyneanus, is a mint growing about three feet high, native to India and Burma. It has no ornamental value, but about 20 to 30 years ago it was introduced and sparingly grown in California. It is one of the commonest perfumes in India, and years ago its presence was considered the sure test of a genuine Indian shawl. As a perfume it has largely passed from popular favor. It is cultivated as a commercial crop in Australia and other parts of the world. We would be pleased to learn of any plants growing in California.

Beans on Lowlands

I have some low bottom land which stays moist all summer. It is hard to get it dry early in the spring to start

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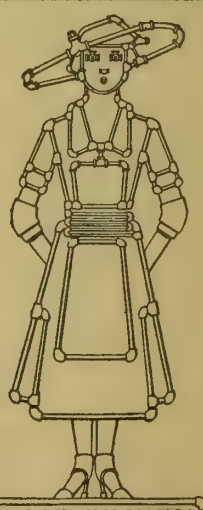

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M. J. MONIZ, Berry Specialist
Sebastopol California

a crop. This year I planted some of it in Henderson Bush beans, and they did well but were late in maturing. I have thought some of trying Red Kidneys. Would like to know how they are as to yield and method of planting. Are they subject to mildew? Is there a ready market for them? Part of this land I have pumpkins in. They have done very well but were late getting started on account of too much moisture. I don't think I handled the ground just right as I practiced flat cultivation. How would it do to ridge this soil early in the spring? — Subscriber, Arroyo Grande.

Nearby your section, at Carpinteria, commercial seed growers report the 1921 crops as exceptionally good on similar lowlands and poorer on higher ground, due, it is thought, to continued dry years or insufficient rainfall. Red Kidney beans will doubtless thrive well with you, the yield is good, and the same culture as for Henderson Bush would be sufficient. They are not much subject to mildew, and there is a ready market for them. We suggest that you practice planting on ridges as this method will give better drainage, also a higher soil temperature in early spring.

Dwarf Apple Trees

A subscriber at East San Diego writes: "In last Cultivator I note article on 'Deciduous Pruning Demonstrations' and wish to record my interest. However, I have experimented on a small scale with dwarf apple trees with no pruning. I curb or tie limb growths, and these shrubby trees receive great attention from visitors. Fruit or bloom is in evidence nearly every month of the year. The varieties are: Duchess, Winter Banana, Wealthy, etc. They begin to fruit in a few months to one or two years from graft or bud. The size and flavor are fine. One two year old bore four apples and first one cut showed neither seeds nor core, but apple was large, well formed, well colored and of medium flavor. Question: Why do they grow and ripen out of the catalagued season?"

Sow Bugs in Strawberries

Last summer slugs and sow bugs destroyed large quantities of our strawberries. We used bran poisoned with arsenate of lead with fair success, but it had to be renewed after every irrigation (overhead) and was slow and expensive. Would you please inform me what the large strawberry growers around San Francisco use to combat slugs, etc.?—Subscriber, Ukiah.

We will pass this question on to strawberry growers and suggest that meantime the arsenate be continued, for extremely small quantity is sufficient ordinarily to control the pest. We think instead of making it into a mash with bran better results will be had by mixing arsenate of lead with an equal amount of fine sugar. Other growers use slices of juicy potatoes on which is sprinkled Paris green, left under leaves of the plants or where they gather. Be sure to use only a very small quantity and repeat frequently, this whether irrigation interferes or not.

Curing Olives

I would like recipes for curing and canning ripe olives.—Subscriber, Turlock.

Answering a number of requests for information as to olive curing we refer the inquirers to recipes on page 558 of this week's Cultivator. There is one formula having to do simply with bulk olives as for home use and another method of treatment for canned olives which will keep with no danger of botulinus or other poisoning. However, so far as we are informed there has never been a case of poisoning from the ordinary cured bulk California ripe olive.

Selling Meat

What state and federal regulations does a producer have to meet in order to be able to kill, cure and smoke pork and sell as farm cured?—Subscriber, Downey.

This is a long question or at least requires an exceptionally long answer, for there are so many angles and so many laws that it is more or less complicated. First, we would refer our inquirer to the California Cultivator of March 19, 1921, Page 399, where Attorney Stanton goes at some length into answering this question But, in a word, we may answer from information secured through Attorney D. E. Leighton, connected with the animal industry division of the state department of agriculture. In the first place federal regulations need not be considered unless interstate shipments are to be made. Under the state law the farmer may slaughter and cure pork without license or hindrance. However, if one wishes to slaughter any bovine he may write to State Department of Agriculture, Sacramento, or to the branch in the Pacific Finance Building, Los Angeles, and ask for application blank. He will then be expected to pay one dollar fee (this we believe is to be raised to five dollars at the end of the year) and to put up a thousand dollar bond. Then he may sell. The law under which this becomes necessary was not enacted so much as a protection to the consumer as to check cattle rustling. When this fee is increased to five dollars and it is still necessary to secure the thousand dollar bond it is practically a prohibition of the small ranch selling meats. In addition to the federal and the state acts it must be borne in mind that many counties and a few of the cities have ordinances which require inspection. As to cities this is probably true of less than a dozen, all of the larger cities having their own meat inspection ordinances. Inquiry of county or city clerk is all that is necessary to determine this point.

Killing Stumps

I would like to know how I can kill out eucalyptus stumps without having to dig out.—Subscriber, Hemet.

The best way to dispose of a stump is to get it out entirely. This is possible by digging, use of dynamite or a stump puller. There are stump pullers in the market today which will lift even big eucalyptus stumps. The ground is then immediately available for growing crops and at California land values the cost of a good puller is soon made. However, if one has not the time he should rake off the sprouts as fast as they start and the stumps will soon die. We believe there is no cheaper nor more effective way. If one does not care about economical handling then various chemicals may be employed, but we know of no economical use of chemicals. A good man should go over a row of stumps a quarter of a mile long and with a mattock break off all the sprouts in a very few hours. This operation has to be repeated but few times during the season and the stump will soon give up its life and dry so as to make burning out easy.

SIMPLE METHOD OF SMOKING MEAT

By L. D. JOHNSON

In a few minutes anyone can smoke a season's supply of meat without bother or loss. The secret is in using Wright's Smoke, which may be applied quickly, easily and cheaply with brush or cloth. Wright's Smoke is made of smoke from selected hickory. It gives a delicious flavor and prevents all loss from shrinkage.

For sugar-curing meats you can do away with trouble and save time and money by simply mixing a bottle of Wright's Ham Pickle with 27 pounds of salt. This easily prepared mixture will cure a barrel of meat.

If you want delicious home cured meat get genuine, guaranteed Wright Pure Food Products from your dealer.

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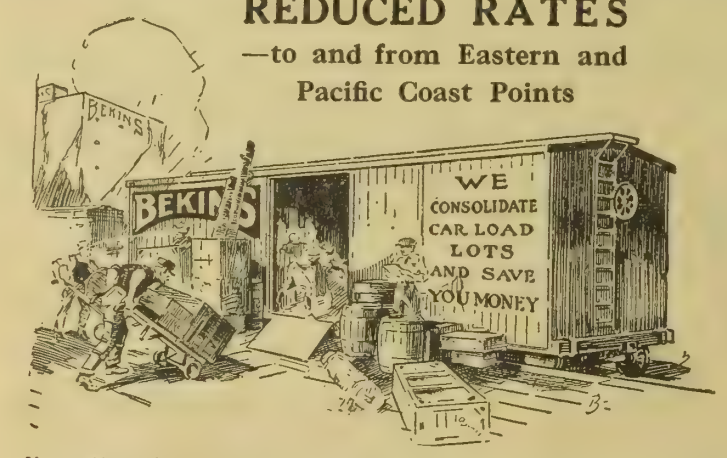

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Household Department

THE OLD GARDEN

I chanced upon the little bowered retreat
For the first time, and never shall forget
The spell of tangled mystery; the wet
Bejeweled leaves like fingers curled to meet
My childish hand; the unimagined sweet
of brier, heliotrope and mignonette,
The tang of box, and quainter flowers set
By mazy paths for Liliputian feet.

High walls of hollyhock and morning-glory
Concealed the ancient house with gables wide,
Shut out the world of swift and merry hours.
In the strange silence of a fairy story
My heart stood still. Then at a turn I spied
My mother, smiling at the other flowers!

—Abbie Farwell Brown, in Youth's Companion.

SAFETY FIRST

(Concluded.)

Billy Prescott was in love, desperately in love! He knew it was the real thing this time, because he had never before felt so timid about expressing himself. At least fifty times in the last two months he had nerved himself to declare his undying affection, but always, when he opened his mouth to speak, she would turn her melting brown eyes upon him—Betty was small and dark, like Bobbie—and the words would slip back down Billy's throat and land in his stomach with such a thump he could almost hear them splash. He was paralyzed with the fear that she might say no, and of course if she did that would put an end to his visits.

But that was all over now. As usual, Bobbie's tip had been worth its weight in gold. William Alexander felt as bold as the historic Lochinvar. Since Betty had said she wanted speed—well, he would give her speed! He would fairly lift her off her feet with the whirlwind of his affections let loose. He remembered now that Betty liked fast driving. Other girls would hold their breath and turn white or scream with terror when he drove at 60 miles an hour, but Betty—never! The faster he drove, the better she liked it. She seemed to have a natural racing spirit. Curious it hadn't occurred to him that since Betty liked that sort of thrill she probably liked other kinds as well.

With a warm and pleasant sense of anticipation Prescott switched off his light and left the room.

Having parked his machine half way down the block from the Clishold home, William Prescott slipped on his mask before advancing to the door, where he was somewhat surprised to find himself greeted by a ghostly, white sheeted figure instead of the customary Sallie. It seemed strange, too, not to see Bobbie anywhere in evidence, but he supposed that small boy had gone to bed earlier in the evening and was by now dreaming of "the witches that get you ef you don't watch out!"

The apparition at the door pointed toward the stairs. On the second floor another guided him into the men's dressing room, where he found numerous other masked men in various styles of garb, both gay and sober. When he left the dressing room he was directed toward a second flight of stairs that led to the ballroom on the third floor. Here he found the dance in full swing. His eyes searched eagerly for Betty. There were Indian squaws, Colonial dames, hoopskirts and hobbles, suffragettes and ballet dancers, court ladies and peasants galore, but look where he would, Prescott could find no trace of anything resembling a maid's black gown with white cap and apron. He felt vaguely disappointed. Of course, she was there, somewhere, and when they unmasked at midnight, he would find her, but it would take away half the romance and incidentally a good share of his nerve if he didn't get a chance to "speed" while the masks were on.

But William Alexander Prescott was too clever to let anyone suspect that a disappointed heart beat beneath his shiny blue satin. He danced and laughed and whispered pretty nothings in every small pink ear, and behind his mask no one could see that his grey eyes were searching, searching everywhere.

It was nearing midnight. Prescott had reached the stage where he felt that he must get away by himself and smoke a cigarette as a bracer. His courage was fast oozing away. He had anticipated so much! Between dances he slipped out unobserved, and went down the stairs to the second floor. He stepped out onto a balcony. It was dark and deserted. He could have his smoke and get back to the ballroom in time to unmask with the others. He struck a match. As it blazed he heard a rustling sound and saw a dark figure move quickly to one side. Billy stared. It was a woman, small and dark. He could see a splash of white on her head and a big splotch of it on her skirts. Betty, at last!

Billy's heart thumped and pounded against his ribs, his knees wobbled and his arms trembled. He felt a hot wave rising from his heels to his head. He had a strong inclination to run, but he remembered Bobbie's advice, so instantly he shifted to high! He tossed away his cigarette and with two strides he had reached the girl and flung his arms around her.

"Darling!" he cried, crushing her to him. "At last I have found you! Oh, you little bunch of sweetness, I'm going to eat you up!"

He kissed her passionately, on her neck, her arms, her hair. She struggled in his arms, but he held her firmly.

"Oh, don't you know, you sweet thing, that I love you? Don't you know that I have adored you all these months? I'm going to carry you off with me, my little queen!"

He fumbled in the dark until he found her chin, and in spite of protests, he raised her face to his and kissed her once, twice, three times on her full sweet lips.

"Ah!" he whispered, ecstatically.

"Billy—Prescott!"

William Alexander jumped as if he had been shot. Betty! And her voice came from the doorway!

Dazed, he turned his head to look over his shoulder. A vision of loveliness, in a French peasant's costume, met his astonished gaze. "Maid—of Orleans," his dazed mind repeated, slowly. He loosed his hold on the woman in his arms. A flushed face was turned toward the light, a pair of black eyes danced gleefully, and the "sweet lips" parted in a derisive grin.

"Good lord! Sam Carson!"

Chuckling with mirth, the man bolted past the vision in the doorway and disappeared.

"Billy," Betty began, then an irrepressible giggle escaped her and she turned her head away.

Prescott was speechless. His teeth chattered and he shivered. The next moment hot waves of mortification swept over him. What a fool she would think him now! What an uproarious shout would follow Carson's tale! How the story would spread over town, growing spicier with each repetition! Overwhelmed with disgust, and disappointment, he turned his back on Betty and hung his humiliated head in helpless silence. A long, painful moment and then there was a stir, a rustle of skirts and a soft hand was laid gently on Prescott's arm.

"Billy."

No answer. Prescott's teeth pressed tightly together and his hands clenched at his sides.

"Billy—dear."

Prescott's ears pricked up. "Billy—dear," after what had happened? Still he did not turn.

"Billy," her little fingers were pressing his arm and there was a little catch in her voice.

Surprised, yet suspicious that she was still laughing at him, he turned his head just far enough so that he could glance out of the corner of his eye.

"Billy," she whispered, half shyly, "you—you did mean—all that—for—me—didn't you?"

His heart gave a bound. He longed to whirl and seize her in his arms, but even as the impulse came to him his heart sank again and went dead. It looked hopeless—he must certainly be out of gas, but Betty made one final try.

"Billy—won't you—please—go on high again—I—I just love to speed!"

At that Billy's heart began to whir-rrr, his blood began to race madly

through his veins. He turned, looked down into her melting brown eyes, then suddenly he turned on the gas, shifted gears, and they were off—at 90 miles an hour and reckless of consequences!

HINTS FROM HOUSEKEEPERS

To Set Colors

For the lady who wanted to know how to set the color in brown overalls, I am sending the following, which I clipped from another paper:

"For setting colors in pink gingham, use a tablespoon of sugar of lead to each quart of tepid water. For greens, blues, mauves or purples, soak the materials in an alum solution, one ounce of powdered alum to each gallon of water. Brown, tan and buff shades hold their color best by using a cup of vinegar to a gallon of water, and for black, or black and white, use a strong salt solution. For any of the above colors, soak for several hours in the given solution, then rinse and dry and press. Sugar of lead is poisonous, so be careful if there are children about; it is not harmful after being used in the material, though, if the cloth is rinsed well."

I have not tried these, but they come from a reliable source, and hope they will help others.—Mrs. O. S. Allen, Ontario.

Quince Honey

I see by last week's Cultivator some one asks for quince honey recipe. The one I am sending can't be beat:

Make a syrup of 3 pounds granulated sugar and 1 pint water. Grate or put through food chopper 3 large quinces and stir them into the boiling syrup. Let boil 15 minutes. Pour into jelly glasses. This will make 7 glasses of delicious honey.—Mrs. Van Noate, Huntington Beach.

* * *

Having gained so much from your recipes, I will try to repay you to some extent by sending in a recipe which we like very much.

Boil 10 cups sugar and 3 cups water together. Pare 4 large quinces, and grate. Skim the syrup, add the quinces and boil 10 minutes. Bottle and seal. This is very good and is very much like real honey.—B. A. S., Ripon.

Chayotes

As I have never seen any recipes for cooking chayotes mentioned in your columns, I am venturing to suggest a few ways of preparing this most delicious vegetable. When young or half grown they may be cooked without peeling, but the older ones should be peeled.

Take 2 half grown chayotes, slice them thin, as they cook quicker, add 1 medium sized carrot cut in pieces about a half-inch thick and about a cup of green lima beans. Cover with hot water and boil for an hour, or until tender, drain off water, chop in small pieces with cooking spoon, and season with salt, pepper, a rounding tablespoon of butter and a half cup of thick sweet cream, or canned milk will do if not diluted.

For "apple" sauce, and you can hardly tell the difference, slice chayotes thin with a few slices of lemon, which supplies the necessary tartness, and boil in hot water until tender, drain off water, sweeten with sugar to taste and season as you would apple sauce.

If peeled and sliced raw, they make a very good substitute for cucumbers in a combination salad with mayonnaise.—Mrs. Miles Standish, Del Mar.

Salmon Croquettes—Salad Dressing

Salmon Croquettes: 1 can salmon, 3 eggs, 5 or 6 crackers rolled fine, salt and pepper to taste, ½ cup or more of milk sufficient to make batter that can be dropped from spoon. Fry in hot butter.

Uncooked Salad Dressing, made with cream: Rub yolks of 2 hard boiled eggs to smooth paste, add ½ cup thick sweet cream, 1 tablespoon sugar, salt, pepper, mustard and any other seasoning liked. Stir all together until smooth, then add enough vinegar to make it thicken and become smooth and creamy, about 1-3 cup.—Irene D. Payne, Bakersfield.

Soups

Garbanzos Soup: Soak 10 cents' worth of Garbanzos over night. In the morning put on with as much water as you want for soup and add 10 cents' worth salt pork. The last hour add 1 cup canned tomatoes, 2 potatoes cut in small dice, an onion, salt, a small chili pepper and clove of garlic if one likes garlic. This is a delicious soup much used in Porto Rico. Here let me add that garlic should be more generally used. In colds and coughs it is very beneficial and the Spanish people use it to ward off contagion.

Split Pea Soup: Soak 10 cents' worth yellow split peas over night. Boil until tender, add about 2 quarts boiling water, 3 potatoes cut in dice, an onion, 2 slices salt pork, salt and pepper. Season with butter. This is a very cheap and nutritious soup. Dried green peas can be used the same way.

Barley Soup: This is best made from mutton, but beef can be used. When the bones have boiled several hours skim well and add 4 potatoes cut in dice, 1 small onion, 1 cup pearl barley.

Vegetable Soups: Take a good beef soup bone, preferably one with quite a bit of meat on it. When green peas are in market, make with potatoes, 1 cup peas, 2 cups tomatoes. Always add onion and celery, and the last half hour one-fourth cup rice.

Asparagus and tomatoes are a delightful combination. Cauliflower and tomatoes are very appetizing. I save the green stems of cauliflower and cut into dice. Flavors the soup wonderfully. Tomatoes and spaghetti make a rich soup.

Dried lima beans soaked over night added to vegetable soup, cabbage, tomatoes, onions, potatoes, celery, are very good. Green corn cut from cob, with tomatoes and green peppers, is another fine combination.—Aida.

HOUSEHOLD QUERIES

Mustard Pickle

Could you please publish a mustard pickle recipe in your columns? The recipe I refer to calls for tumeric powder, string beans, onions, cucumbers and green tomatoes. I have lost my recipe and have forgotten the proportions, and wish very much to get it again.—Subscriber, Ripon.

Two excellent recipes for these pickles were given in the Cultivators of July 9 on page 37, July 23 on page 84. Copies are being mailed to the inquirer.

NEW PEACH RECIPE BOOKS

The new Blue Ribbon Peach Recipe Books are ready for distribution to housewives who will write to California Peach & Fig Growers, Holland Bldg., Fresno, and request a copy.

These new books show many tempting dishes in colors. The recipes were compiled by Marion Harris Neil and other culinary artists of prominence. Miss Mabel Caldwell, educational director of the California Peach and Fig Growers, edited the book and is responsible for some of the delicous fruit combinations featured.

Here are some of the good things to be made from Blue Ribbon peaches suggested to be included in Holiday menus, by Mabel A. Caldwell:

Peach Cream Pie

1½ cups Blue Ribbon peach pulp, 1 tablespoon cornstarch, 1 cup thin cream, 2 eggs, separated; ½ cup sugar, 1 teaspoon vanilla extract, 2 tablespoons lemon juice, pie crust.

In the upper pan of a double boiler mix cornstarch and cream, cook over hot water until thick. Mix yolks of eggs with sugar; add peach pulp, vanilla and lemon juice. Pour slowly into cream and cook five minutes. Line a pie plate with hot water pie crust,

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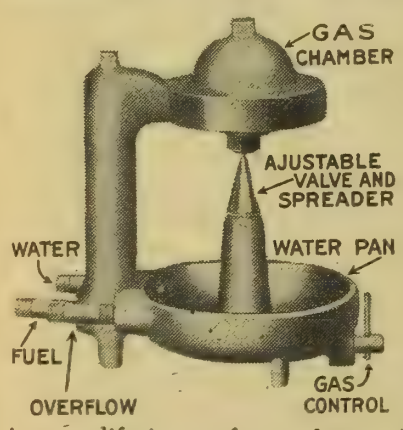

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fill with mixture and bake. Cover with a meringue made of whites of eggs and 2 tablespoons of sugar. Brown lightly and serve. Simply delicious.

Peach Conserve

2 pounds Blue Ribbon peaches, 1 pound seeded raisins, 2½ cups light corn syrup, ½ teaspoon salt, ½ pound blanched almonds. Grind or chop Blue Ribbon peaches and soak until softened in just enough water to cover. Add raisins, syrup and salt and cook until mixture thickens. Add nuts, boil for five minutes, pour into sterilized glasses and seal. Good for luncheons.

Steamed Peach Pudding

2 cups Blue Ribbon peaches (soaked in water a short time), 1 cup raisins, 2 cups flour, 1 cup milk, ½ teaspoon nutmeg, 1 cup chopped figs, 2 eggs, ½ teaspoon salt, 4 level teaspoons baking powder, 2 tablespoons melted shortening, ½ cup sugar (brown, if preferred), 1 teaspoon cinnamon.

Sift dry ingredients, add milk and egg and spices, then add uncooked peaches and melted shortening. Steam for two hours. This is a good, substantial dessert.

Spiced Peaches

7 pounds Blue Ribbon peaches, softened; 1 stick cinnamon, 1 tablespoon whole cloves, 3½ pounds sugar, 2 cups vinegar.

Cut softened peaches in slices and put them into a preserving kettle with sugar and vinegar. Add spices tied in a cheesecloth bag. Cook to a thick marmalade and seal in small sterilized jars. The spice bag should be removed.

TO CUT DOWN A BEAVER HAT

Do not use scissors or knife. Remove bobbin and thread from sewing machine and make smallest possible stitch. Mark size desired on brim of hat with tailor's chalk, or if edge is to be same all around place gauge on the machine. Place hat between foot and feeder and run as if making seam. Sew twice in the same place and break hat apart at the place where it's been stitched. Needle cuts through heavy part of brim but does not break hair and edge comes out as soft and fuzzy as when hat origially came from the factory. The part of the brim which is removed may be utilized as trimming by cutting into different shapes, using the same method as was used for the hat.

PROTECT LEATHER FURNITURE COVERINGS

Leather furniture coverings last longer and look better if occasionally rubbed with castor oil or some commercial furniture polish which will restore the oil which gradually dries out. The liquid should be rubbed in well and the excess taken off with a soft cloth. Otherwise the film of oil will collect dirt, darken the leather and soil whatever touches it.

GREEN TOMATO MINCEMEAT

8 quarts green tomatoes, 2½ pounds brown sugar, 2 pounds raisins, 1 pound beef suet, ½ cup vinegar, 2 tablespoons salt, 2 tablespoons ground cinnamon, 1 teaspoon ground cloves, 2 teaspoons nutmeg, 2 cups chopped apples if desired. Slice tomatoes thinly or put through food chopper. Allow to drain, cover with cold water, place over fire and boil 5 minutes. Drain well, add suet, vinegar, fruit and seasoning. Return to fire and allow to simmer from 30 to 45 minutes. Pack hot.

SAY, "HELLO!"

Stop a minute and say "Hello"
As down Life's Road you go;
For a kindly word and a cheery smile
Will shorten the way by many a mile.
For some poor fellow who's moving slow.
Stop a minute and say "Hello."
—Michigan Tradesman.

A BAD SPELL

Mother—Well, dear, did you win the spelling match?

Elsie—No, mamma, I put too many z's in scissors."—Boston Transcript.

Think individually and act collectively and you won't have to worry about how to be of some use in the world.

New Lamp Burns 94% Air

Beats Electric or Gas

A new oil lamp that gives an amazingly brilliant, soft, white light, even better than gas or electricity, has been tested by the U. S. Government and 35 leading universities and found to be superior to 10 ordinary oil lamps. It burns without odor, smoke or noise—no pumping up, is simple, clean, safe. Burns 94% air and 6% common kerosene (coal-oil).

The inventor, W. V. Johnson, 31 N. Fifth St., Portland, Ore., is offering to send a lamp on 10 days' FREE trial, or even to give one FREE to the first user in each locality who will help him introduce it. Write him today for full particulars. Also ask him to explain how you can get the agency, and without experience or money make $250 to $500 per month.

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Livestock News Notes

The Shasta Stock Farm of Pasadena writes that it has secured a two year old line bred Ormsby from the McCloud River Lumber Company herd. His sire is a son of Sir Pietertje Ormsby Mercedes from a 30 pound cow with a three year old record of 863 pounds for the year and a dam with 1009 pounds for the year. His own dam is sired by a brother of Pietertje Maid Ormsby who has only about 12 registered daughters. Of these nine have seven day records made at an average age of four and a half years, and all run from 20 to 31 pounds. She made 27.7 pounds in seven days and is now finishing a year record of 1000 pounds as a four year old. Her dam has four daughters by four different sires with records as follows: A nine year old made 25 pounds, a four year 28.3 pounds, a six year old 37 pounds in seven days, 845 pounds in 190 days and is still going strong, and the fourth one as given above. Shasta Stock Farm is owned by Messrs. Hukill, Cook and Nelson.

The public sales of registered Holsteins are apparently over in California for 1921, and breeders of black and whites have reason to feel satisfaction with the sound values maintained by the breed in this state during the past year. The books of California Breeders Sales and Pedigree Company show that the Holstein breeders of the state have sold a total of 1,511 head of registered Holsteins through their service since January 1, 1921, which includes every animal sold, for a total of $527,835, or an average of $349 per head. Their records also show that in spite of one or two bargain offerings that developed during the fall sales the better class of cattle maintained their values exceedingly well, and the sale season closed with a strong unfilled demand. The closing sales of the year were attended by some of the largest crowds of the season, composed almost entirely of new buyers who were apparently somewhat uncertain as to values and in a number of instances permitted cattle to get away from them at prices so moderate that they can scarcely expect to duplicate them when the 1922 sale season opens.

Ruby Queen Hengerveld, owned by Agee Bros., Rivera, recently added herself to California's list of 1,000 pound yearly record cows. Calving at the age of 9 years 7 months, she made 26.44 pounds butter from 567.1 pounds milk in 7 days. Continued on yearly work she recently finished a 365 day record of 1,057.15 pounds butter from 26,054.8 pounds milk. She was never under shelter during the year, ran with the dairy herd and was given the same amount of hay and grain as the rest of the cows, except that during the last four months of her test she was kept in a pen by herself.

More than 1,500 people attended the third annual Kings County Pork Day show and sale held at Hanford, November 17. Twelve carloads of fat hogs were exhibited, besides many smaller lots. The Corcoran center won the class for farm centers; Stratford was second, Grangeville third and Lemoore fourth. Corcoran center also won the class for a pen of five. Bassett Bros. showed the winning carload in the individual competition as well as the best pen of five. G. I. McCune won the class for single barrows. In the final awards Bassett Bros. had the champion carload; Corcoran center, the best pen, and G. I. McCune the best single barrow. J. I. Thompson of Davis made the awards. Following the judging the hogs were sold at auction, the top car bringing $10.20 per hundred.

J. E. Wherrell, Jersey breeder of Riverside, has purchased a number of heifers from the St. Cloud herd in Texas. Three of them have freshened with their second calves and all have made the Register of Merit.

Mrs. J. E. Knight of Willows has purchased from T. S. Cooper & Sons of Pennsylvania the year old Jersey bull, Eva's You'll Do of Lehigh, a son of the Cooper bull, You'll Do's Handsome Raleigh. Mrs. Knight has a small herd of about 20 head, but it is her intention to build it up to considerable proportions.

L. M. Railsback Co.

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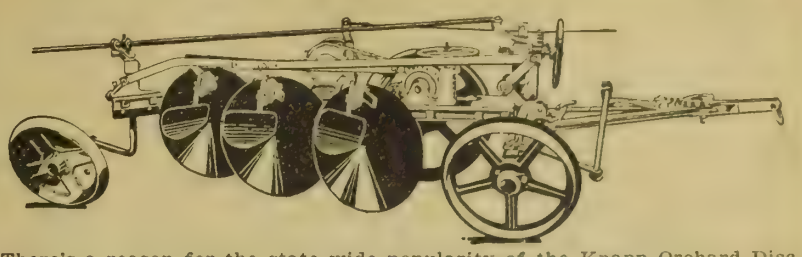

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There are many special Knapp features of construction which with the 1921 improvements make it the unchallenged leader in Orchard and Vineyard as well as field work. It is built low, has narrow frame, light draught, and has no levers of any kind to injure low hanging branches of trees.
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This calf was a show ring winner in four shows this year. He was first junior calf at San Francisco. Here is TYPE combined with PRODUCTION. Tuberculin tested and guaranteed a breeder.

The price is right. Terms to responsible parties.

Do not delay on this one as several Eastern breeders have inquired about him and some one will snap him up at the price.

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Jack Klein, Mgr. Hollywood, Cal.

Reduction Sale of

Poland China Hogs

December 7, 1921, at 12:30 P.M.

At the ranch, one mile out McHenry Ave., Modesto, Cal. Twenty Sows and Gilts, sired by I Am King, and bred to Leader's Winner, he by King's Big Bone Leader. A few weanlings, sired by these boars. I Am King sells also.

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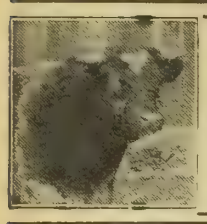

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JOHN A. BUNTING
Mission San Jose Calif.

Report of State Dairy Cow Competition for October

By Prof. F. W. Woll

List of cows producing 50 pounds of butter fat or over during the month:

Arden Dairy, Holsteins: 982, 1221 lbs. milk, 52.50 lbs. fat.

Anita M. Baldwin, Holsteins: Lady Lilith Walker DeKol, 2041 lbs. milk, 72.66 lbs. fat.

Dean Beeman, Holsteins; Jacobina, 1862 lbs. milk, 59.20 lbs. fat.

Berlywood Stock Farm, Holsteins: Fay Tritomia Heng. W., 1626 lbs. milk, 66.03 lbs. fat; Romeanna Douwe, 1540 lbs. milk, 50.37 lbs. fat.

Eug. Biondini, Jerseys and grades; Rachel, 1169 lbs. milk, 73.65 lbs. fat; Midget, 995 lbs. milk, 70.65 lbs. fat; Rosalie, 825 lbs. milk, 66.90 lbs. fat; 62, 1054 lbs. milk, 63.24 lbs. fat; Shorties Best, 880 lbs. milk, 62.48 lbs. fat; Brownie, 1057 lbs. milk; 62.36 lbs. fat; Twinnie, 865 lbs. milk, 53.63 lbs. fat.

N. L. Browning, Holsteins: Segis DeKol Bess, 1635 lbs. milk, 58.36 lbs. fat.

W. F. Early, grades: Butterfly, 983 lbs. milk, 59.96 lbs. fat; Pet, 1017 lbs. milk, 53.90 lbs. fat; Rosy, 1082 lbs. milk, 50.85 lbs. fat; Lineback, 704 lbs. milk, 50.69 lbs. fat.

J. A. Genzoli, grades: Dollie, 1004 lbs. milk, 62.25 lbs. fat; Jill, 803 lbs. milk, 57.01 lbs. fat; Fannie, 840 lbs. milk, 56.28 lbs. fat; Blue Spot, 1057 lbs. milk, 50.74 lbs. fat; Pansy, 840 lbs. milk, 50.40 lbs. fat.

Earl Graham, Holsteins and grades: Princess Maida Veeman, 2229 lbs. milk, 74.21 lbs. fat; Niger, 1392 lbs. milk, 69.60 lbs. fat; Hauser, 1345 lbs. milk, 59.18 lbs. fat; Pinkie, 1398 lbs. milk, 52.32 lbs. fat; Nancy, 1116 lbs. milk, 53.57 lbs. fat.

J. B. Harbers, grade Jerseys: Nellie, 849 lbs. milk, 50.09 lbs. fat.

Fred Hartsook, Holsteins: Bessie Snowball, DeK., 1996 lbs. milk, 57.29 lbs. fat; Miss Aaggie DeK. Merced, 1757 lbs. milk, 50.43 lbs. fat.

Nate Hauck, grades: Brindle, 1512 lbs. milk, 78.62 lbs. fat; Red, 1311 lbs. milk, 69.48 lbs fat; Lily, 1131 lbs. milk, 68.99 lbs. fat; Chub, 1268 lbs. milk, 65.94 lbs. fat; Bally, 1373 lbs. milk, 65.90 lbs. fat; Speck, 1292 lbs. milk, 64.60 lbs. fat; Slow, 880 lbs. milk, 59.84 lbs. fat; Brownie, 883 lbs. milk, 58.28 lbs. fat; Beauty 942 lbs. milk, 56.52 lbs. fat; Bird, 902 lbs. milk, 50.51 lbs fat.

C. D. Hayworth, Jerseys: Duchess of Ransom, 891 lbs. milk, 52.75 lbs. fat; Lorna of Rico V., 923 lbs. milk, 51.52 lbs. fat.

A. B. Humphrey, Guernseys: Calla Grove Itchen, M., 925 lbs. milk, 55.32 lbs. fat.

Peter Iversen, grades: Holstein, 837 lbs. milk, 61.10 lbs. fat; Poor, 921 lbs. milk, 55.26 lbs. fat; Holstein Heifer, 939 lbs. milk, 52.58 lbs. fat; Old Jersey, 831 lbs. milk, 52.35 lbs. fat; Red, 905 lbs. milk, 51.59 lbs. fat.

Palo Alto Stock Farm, Holsteins: Thelma Hartog S. DeKol, 1930 lbs. milk, 71.41 lbs. fat; Irene Segis Pontiac, 1683 lbs. milk, 64.64 lbs fat; Kiatta Pontiac Pride, 2514 lbs. milk, 59.34 lbs. fat; Alta Pappoose, 1668 lbs. milk, 58.54 lbs. fat.

F. F. Pellissier, Holsteins and grades: 2479, 1919 lbs. milk, 67.17 lbs. fat; 2640, 1643 lbs. milk, 64.07 lbs. fat; 2403, 1522 lbs. milk, 63.92 lbs. fat; Princess Tolia Walker, 1482 lbs. milk, 51.87 lbs. fat.

M. L. Pontoni, grade Jerseys: Arcata Girl, 924 lbs. milk, 56.36 lbs. fat; Mabel, 992 lbs. milk, 50.59 lbs. fat.

W. Terkelsen, grade Jerseys: Dinah, 890 lbs. milk, 52.51 lbs. fat.

The reports for October so far received show that 353 cows in milk during the full month produced an average of 821 lbs. milk and 38.57 lbs. butter fat (average number of days in milk at the beginning of the month, 214). The highest producing cow for the month was a grade Jersey, Brindle, owned by Nate Hauck (1512 lbs. milk, 78.2 lbs. butter fat, at 155 days from freshening). Six cows produced

Completed Ten Month Records, October, 1921

No.	Name of Cow.	Age. Yr.Mo.	Days in Milk: Beg. of Record	Milk Lbs.	Butter Fat: Per Cent.	Butter Fat: Lbs.
1	Jim's Wonder, gr. J.	5-7	12	16,518	4.73	778.94
2	164, gr. H.	-	5	11,954	4.29	513.48
3	203, gr. H.	-	30	8,825	5.42	478.83
4	236, gr. H.	-	81	8,654	5.42	468.41
5	910, gr. H.	-	5	10,903	3.93	428.67
6	880, gr. H. (1)	-	5	10,420	4.06	422.34
7	252, gr. H.	-	11	10,979	3.83	420.55
8	79, gr. H.	-	105	11,030	3.72	419.08
9	82, gr. H. (2)	-	60	9,328	4.38	409.56
10	981, gr. H.	-	6	11,652	3.49	406.67
11	925, gr. H.	-	50	10,130	3.98	401.63
12	202, gr. H.	-	43	7,974	4.88	389.65
13	63, gr. H.	-	190	8,464	4.46	377.46
14	57, gr. H.	-	47	9,424	3.94	371.40
15	233, gr. H.	-	120	7,176	4.65	333.28
16	942, gr. H.	-	6	8,012	4.06	325.64
17	108, gr. H. (3)	-	131	6,186	5.22	322.65
18	Anoakia Walker P., H.	2-1	5	18,358	3.38	620.94
19	Queen NaD. DeK., H.	1-11	5	16,006	2.80	448.94
20	Goshen Snowb. P., H.	4-9	6	17,876	3.18	567.23
21	Queen of Fairl. L., H.	3-10	35	13,802	3.86	533.55
22	Durasia Canary, H.	3-11	5	17,687	2.93	518.77
23	Alcartra Sarc., gr. H.	4-10	5	7,417	4.22	312.23
24	Beauty Hengerv., gr. H. (4)	3-0	5	7,105	3.78	269.09
25	93, gr. H.	6-	24	11,737	3.97	465.68
26	Wisconsin, gr. J.	3-6	5	9,304	4.50	419,35
27	Iowa, gr. J.	2-6	5	7,043	5.01	353.06
28	New York, gr. J. (2)	3-0	7	5,616	4.58	256.32
29	Lena, gr.	2-11	9	8,368	5.84	488.34
30	Gamma Sarc. of L., H.	6-11	5	21,690	3.48	754.04
31	May Walker G. K., H.	4-10	5	17,701	3.35	592.33
32	Brownie, gr. H.	3-4	5	14,690	3.99	585.62
33	Alice, gr. H.	2-6	6	14,631	3.88	567.94
34	Raleigh's Ang. G., J. (5)	5-0	5	9,102	4.53	412.93
35	Whittier Pont. N. 4th, H.	4-6	6	19,431	4.00	777.04
36	Mariposa, gr. H.	3-3	6	12,947	3.24	419.37
37	651, gr. H.	-	9	18,484	3.60	666.11
38	Rosamaines M. S. DeK., H.	2-0	7	10,562	3.92	416.82
39	1899, gr. H.	-	27	13,018	3.59	466.56
40	2642, gr. H.	2-	5	8,953	4.29	384.51
41	Carol, Sh.	4-2	7	6,378	3.36	213.57
42	Moorland Col. Rose, H.	3-11	5	23,587	3.20	753.75
43	Teresa, gr. J.	7-1	5	9,534	4.93	470.03

(1) 266 days, (2) 273 days, (3) 267 days, (4) 295 days, (5) 263 days.

Owners of Cows: No. 1, H. L. Wakeham, Santa Ana; 2-17, Arden Dairy, El Monte; 18, Anita M. Baldwin, Santa Anita; 19, Dean Beeman, Woodland; 20-22, Burr Farms, Los Angeles; 23-24, J. M. Christen, Pacheco; 25, El Mirador Dairy, Pasadena; 26-28, C. E. Fisher, Hughson; 29, J. A. Genzoli, Loleta; 30-33, Earl Graham, Compton; 34, H. G. Gross, Eureka; 35-36, L. A. County Farm, Hondo; 37, Napa State Hospital, Imola; 38-40, F. F. Pellissier, Whittier; 41, J. D. Rowe & Sons, Lessees, Davis; 42, Olga Saxer, Modesto; 43, Winsor Ranch, Bonita.

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between 70 and 80 lbs. butter fat during the month, and 17 between 60 and 70 lbs.

The prize offered by the California Cultivator for the highest average production by five grades for the month of October was won for the fourth time by Earl Graham of Compton. The average production of the five highest grades eligible to compete for this prize was 57.73 lbs. butter fat during the month (average milk 1254 lbs., test 4.60 per cent, average distance from freshening, 168 days). The production of the individual cows ranged from 49.0 to 69.6 lbs. butter fat. These cows stood first among similar groups of five grades in 16 dairy herds in different parts of the state that competed for the Cultivator prize the past month. The average production of butter fat for five of the groups came above 50 lbs. of fat durnig the month, viz., E. Graham, 57.73 lbs.; P. Iversen, 54.58 lbs.; W. D. Early, 53.05 lbs.; J. A. Genzoli, 50.55 lbs., and M. Pontoni, 50.41 lbs.

Table shows cows completing the record period in ten months (305 days) in the competition during the past month. They are given in the order of their owners, alphabetically arranged, except for the record cow for the month, which is placed first.

SOUTHERN CALIFORNIA JUDGING TEAM GOES TO INTERNATIONAL LIVESTOCK SHOW

A livestock judging team made up of Southern California high school boys who made the best scores in the livestock judging contest held at the Southern California fair at Riverside recently at which 167 entrants competed, left Monday, November 21, for Chicago, where they will compete with teams from many other states at the International Livestock Show, the real livestock classic of the country. These boys were Herman Darling of Los Angeles, Ralph Stokes of Long Beach and Wilder McCullough of Van Nuys, with Rupert Myers of Long Beach as alternate. H. A. Miller of the agricultural department of the Los Angeles Chamber of Commerce accompanied the boys.

The judging work taken up through these judging contests at both the San Fernando Valley Fair and the Southern California Fair at Riverside are the outgrowth of agriculture club work. Many agencies have been interested in this club work and have helped financially as well as giving their moral support to this movement in order that this team might be sent back and Southern California represented at this show.

SALVAGE THE TUBERCULOUS

In a recent issue of the Journal of the American Veterinary Medical Association a brief description is given of a plan conducted in Wisconsin in 1918-19 of salvaging condemned tuberculous cattle by segregation on a concentration farm. The physically fit cows were milked and the milk sold to manufacturers of condensed milk. The calves were sold for veal and the cattle sold from time to time. In the plan as suggested for a permanent state project the equipment should consist of a concentration farm to which all reactors would be sent, the valuable purebreds being conspicuously marked, a second farm to which valuable cows should be sent for breeding, and a third farm where the calves should be sent until tested and passed by two tuberculin tests.

CALIFORNIA HAS HEREFORD CATTLE

Census figures show that there are 5,238 registered Hereford cattle in California. There are 2,865 registered Hereford bulls in service on the farms and ranches of the state. There are 484 farms and ranches reporting that they are engaged in the production of purebred Hereford cattle.

For the entire United States the census shows: 14,931 farms engaged in the raising of purebred Herefords, 405,582 registered.

The League of the Southwest convenes in Riverside, December 8, 9 and 10. Representatives will be there from Canada and Mexico as well as the western states. Secretary Fall of the Interior is one of the speakers.

Sir Aaggie DeKol Mead

Bred in the richest Aaggie Acme-De Kol of Valley Mead cross, he should be one of the greatest young sires of the breed.

Five of his seven nearest dams average:

Butter	2 Years	2,040.97 Pounds
Milk	2 Years	41,547.20 Pounds
Butter	1 Year	1,130.66 Pounds
Milk	1 Year	23,096.60 Pounds

His seven nearest dams average:

Butter	7 Days	30.47 Pounds
Milk	7 Days	627.60 Pounds

His calves are just what we could expect from a long succession of great sires and dams, and in their present state of development fulfill every promise in the pedigree of their great sire.

Good business judgment will eventually prompt you to place at the head of your herd a bull of Aaggie Acme-De Kol of Valley Mead breeding.

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Walter Hogan Stock White Leghorn Chicks. December and January chicks come from Winter layers. The cockerels are in the market for early broilers. You can have the chicks out of the brooder house in time to put in a Spring brood. We are hatching the chicks and ship by Parcel Post, safe arrival guaranteed. You can do what others do—make money with poultry. Lyon Hatchery, Gardena, California.

We Are Now Booking Orders for S. C. White Leghorn Baby Chicks, from strong, healthy, vigorous stock. Bred especially for heavy egg production, from two hundred to two hundred and eighty egg strain. If you want strong, healthy baby chicks, place your orders with the Vineburg Hatchery. All baby chicks guaranteed safe delivery. Vineburg Hatchery, Vineburg, California.

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For Sale—Placentia Perfection and Eureka grafted walnut trees. Prices 1-3 off from last season. Our stock is grafted from choice grafted orchards. See our stock before buying. The Walnut Nursery, Whittier, California. Phone 6294.

For Sale — Walnut Trees — Erhardt and Placentia grafted on Northern Black Root—4 to 6 feet high, $1.00; 6 to 8, $1.25; 8 to 10, $1.50; 12-14, $2.00; Erhardt, 8-10, $2.25; 10-12, $2.50. Borley and Wilkins, Puente, California. Phone 162.

Northern California Black Walnut Seed, 8c lb. Trees one to two feet, $10.00 100. These small trees transplant perfectly. Pears, filberts, other stock. See catalog. Felix Gillet Nursery, Nevada City, Calif.

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For Sale — ATHEL OR EVERGREEN TAMARIX. Best tree for immediate windbreak and shade in hot dry localities. Leonhardt Swingle, Indio, Cal.

For Sale—Walnut Trees. Placentia Perfection and Eureka, grafted on black root. La Puente Walnut Nursery, Puente, California. Phone 103.

For Sale—Fruit Trees, grapevines, unrooted grape cuttings, etc. Write for price list. Burke's Nursery, Lodi, Cal.

For Sale—One and two year old Wonderful Pomegranate trees. fine stock. J. W. Irwin, Lindsay, California.

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Avocados—42 acres choice avocado land in frostless belt, with abundance of water, on reasonable terms. Other small tracts at very reasonable prices. This must be seen to be appreciated. C. M. Jay, 718 Washington Bldg., Los Angeles, Cal.

For Sale—An irrigated Southern Utah farm of 60 acres, 20 acres in alfalfa, all can be put in alfalfa. Plenty of water. 6 miles from county seat on State Highway. Price $4500.00. Half cash. Orrin Phillips, Beaver City, Utah. (Owner.)

Paradise Your Future Home—The district with the greatest possibilities in the state for fruits, nuts, berries and poultry. Inquire C. H. Nielsen, Paradise, Butte County, California.

Mountain Land For Sale—Four hundred acres, good fruit land adapted to apples and pears, timber, water, good house and barn. E. S. Phillipps, Sultana, California.

For Sale — Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

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For Sale—FIVE REGISTERED DUROC-JERSEY GILTS farrowed March 10, 1921. Sired by Ace of Pathfinders and out of a Great Wonder I Am sow. I also have one boar out of same litter. One registered boar farrowed March 27, 1920, sired by Top Orion and out of a Great Wonder I Am sow. He will weigh about 625 pounds. These animals are fine in every respect. Chester Irish, Norwalk, California.

Weanling Boars and Gilts by Pathfinder Wonder (Great Wonder I Am ex an 800 lb. Pathfinder sow) for $10 each. Bred sows and gilts. Derryfield Farm, Capital National Bank Bldg., Sacramento, California.

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Boyana Big Type Durocs — Breeding stock, priced right for sale. Inquiries invited. Satisfaction guaranteed. J. Boyd Harrold, Dixon, California.

Big Type Durocs—Better Durocs at right prices. Harvey M. Berglund, Dixon, California.

Winsor Ranch Durocs—The best of stock at reasonable prices. BONITA, CALIFORNIA.

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Big Type Poland China open and bred gilts, young and service boars and young pigs. Your letter expressing your wants will bring a quick reply. California Swine Corporation, H. A. Patten, Manager, Route 2, Box 38, Escalon, California.

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For Sale Reasonable—1 Holt 75—Schmeiser Leveler—2 Heavy Davis Disc Plows—Trap Wagon—Holt 18—8 ft. Double Disc Harrow—1 Five Disc Plow—Case Thresher 18x36. All in good condition. Clarence E. Newman, Chowchilla.

For Sale—Pumping Equipment. New and complete No. 38 Pomona Pump Head, 320 feet column pipe, rods and cylinder, 70 feet 14 inch 6 ply belt, 40 h. p. G. E. motor. Address J. & R. Well Company, San Dimas, Calif.

For Sale at Bargain Prices—One 750 gal. heavy steel oil tank and wagon; one six foot land leveler; one International feed grinder; one four-gang Stockton plow. Drew Carriage Co., Ontario, Cal.

For Sale—One C. L. Best 12-25 Tractor, in fine shape. Might take as part pay span of good mules or horses. Terms to responsible party. Address Box 279, Sawtelle, California.

For Sale—Pomona pump, 28 head; 30 Holt Tractor, Sanders Plow, Disk Cultivator. Clarence Wagner, Terra Bella, California.

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Pedigreed Flemish Giants — No fancy prices. Maud Beeching, 1578 W. 46th St., Los Angeles.

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Care of Hatching Eggs

From Circular of Poultry Producers of Southern California.

AS THE writer looks back over the last 15 years it seems plain to him that the poultrymen who embarked in the business in Southern California have succeeded or failed in proportion to their ability to produce eggs which not only hatched well but also produced chicks strong enough in vitality to be raised successfully in a brooder. The underlying causes of failure have been various. In some cases the ration did not enable the hen to lay an egg which would produce a strong chick. Sometimes green feed was not fed in sufficient quantities. At other times unsanitary conditions on the premises placed too heavy a burden on the hen, and as a result the average egg production was too small, and in addition such eggs as were set failed to develop large hatches of satisfactory chicks.

Why

Nine times out of ten unless the incubator went seriously wrong at some definite time the cause for poor hatches falls into two classes: First, eggs of low vitality when they were laid, or second, eggs which lost their vitality owing to mistaken care.

When a hen has deposited a fertile egg in the nest it carries within its shell a full measure of possibilities. Nothing a poultryman can do will add any element of strength or increase the vitality of the possible chicks which he hopes to hatch. As soon as the egg is laid, being of such a perishable nature, the forces of deterioration begin to work, and in five or six days this becomes apparent in the slowly declining percentage of hatchability. One of the problems which confront the poultryman is to care for his hatching eggs so as to confine the deterioration to its lowest limits. The two chief factors which tend to destroy the quality of hatching eggs are: First, evaporation or loss of moisture, and second, too high or too low a temperature at which the eggs are kept before they are actually placed in the incubator.

Storage

An egg cabinet or other storage device for hatching eggs that has a draft of air coming through will be fatal to the living germs in most of the eggs. A fertile egg contains a group of living cells which in some measure can be chilled to death by low temperature the same as would happen after incubation had progressed for a time. Therefore, in weather that is frosty at night it will be well to keep the eggs where the temperature does not fall below 50 degrees. On the other hand, at a temperature of 85 degrees or more the germ cells begin developing; however, not in a natural way, and as a result the embryo dies soon after the egg is set. Thermometers should be placed in the egg case so that we can learn the actual temperature, because as a rule the poultryman does not realize how cold his eggs become in the winter. It is not necessary for an egg to freeze and crack the shell to destroy its hatchability. With an idea of moderating the temperature somewhat in warm weather the eggs can be aired at night and covered in the daytime, but in cold weather they should be aired in the middle of the day and blanketed at night. The writer has experimented both in the Sacramento Valley and in the San Fernando Valley in an effort to produce good hatching eggs during hot weather. He has found that even though the temperature reached 107 to 109 degrees in the middle of the day that it is possible to care for eggs so as to prevent injury.

A Cooler

Many poultrymen in Southern California have seen the so-called Chinese cooler, which is merely a frame having a metal cover and burlap walls.

A tiny stream of water is then allowed to trickle down the sides, keeping them moist. This crude device is used quite extensively in the hot interior valleys where it is not possible to secure a supply of ice. As a device for keeping hatching eggs in good condition the cooler should be large enough so that attendant may walk into it and move egg cases. Ordinarily 6 by 6 by 6 feet would afford ample room for holding hatching eggs. The cooler should be set in the shade, but where the air moves freely, and needs no other protection. Regulate the flow of water so that as nearly as possible the walls are kept damp with a minimum of overflow. Even for market eggs this device is used with great success where there are high summer temperatures. The reader will note that this Chinese cooler not only supplies moisture so that the eggs will not evaporate, but also tends to reduce the temperature under ordinary circumstances about 30 degrees. Frequently hatches in the fall and late spring have not been successful owing to injury to the hatching eggs from excessive dryness and high temperature, but the experience of several poultrymen leads us to believe that with the eggs placed in the Chinese cooler it is possible to make much better hatches of strong little chicks.

Selection and Care

A few suggestions as to the proper selection and care of eggs intended for hatching:

Gather the eggs twice a day. In the event that you have an abundance of eggs, select from those laid in the fore part of the day. The morning eggs are heavier and larger as a rule than the eggs laid between two and four o'clock.

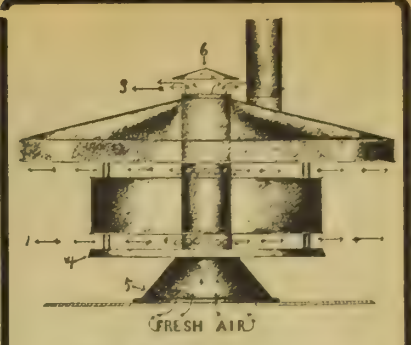
Keep the nests clean so that the eggs will not be soiled. The presence of manure or yolk of egg on the shell will usually destroy hatchability. In wet weather eggs stained with mud are not injured for hatching unless the mud is badly mixed with organic matter.

Do not try to hatch an egg laid on the droppings board or out in the yard. Unless a hen habitually lays in such a place these eggs will not hatch.

Select eggs with smooth shell. Owing to excessive evaporation eggs with thin ends will not hatch well in an incubator. The condition of the shell also tends to indicate the vitality of the hen. It is difficult for a hen under heavy egg production to produce smooth shells, and weariness on her part is usually shown in shell defects. Bearing out this idea, thin shelled

POULTRYMAN'S CALENDAR—DECEMBER, FEEDING FOR EGGS

The poultryman's efforts this month, when eggs are bringing the top price, will necessarily center on getting as many eggs as possible. The pullets are well matured and most of the old hens through the molt. Now is the time for a full ration containing plenty of protein, an abundance of green feed and extras in the shape of sour milk, moist mash and green cut bone. If only the birds have all the greens they will consume it is hardly possible to overfeed them with protein feeds. There are many excellent prepared mashes on the markt. If the poultryman prefers to mix his own he may save some expense but he will probably have no better mash. A mash formula which is in use at several egg laying contests contains 240 pounds bran, 180 pounds ground oats, 180 pounds middlings, 80 pounds soy bean meal, 60 pounds beef scraps, 60 pounds fish meal, 30 pounds charcoal and 4 pounds salt. The scratch mixture used with this mash consists of equal parts wheat, cracked corn, milo and whole barley. Green feed is before the hens at all times as is the dry mash. At noon a small quantity of the mash is moistened with sour milk and fed in troughs. At 2 o'clock sprouted oats are given. An hour before dusk the hard grain is fed in deep litter, from 10 to 12 pounds being allowed 100 hens per day.



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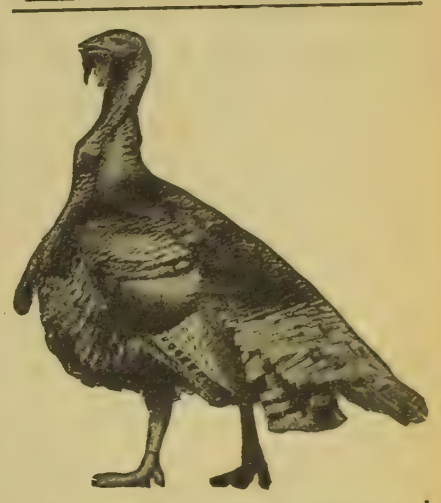

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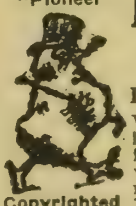
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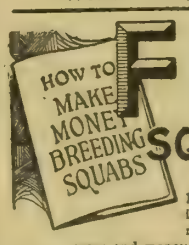

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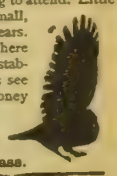
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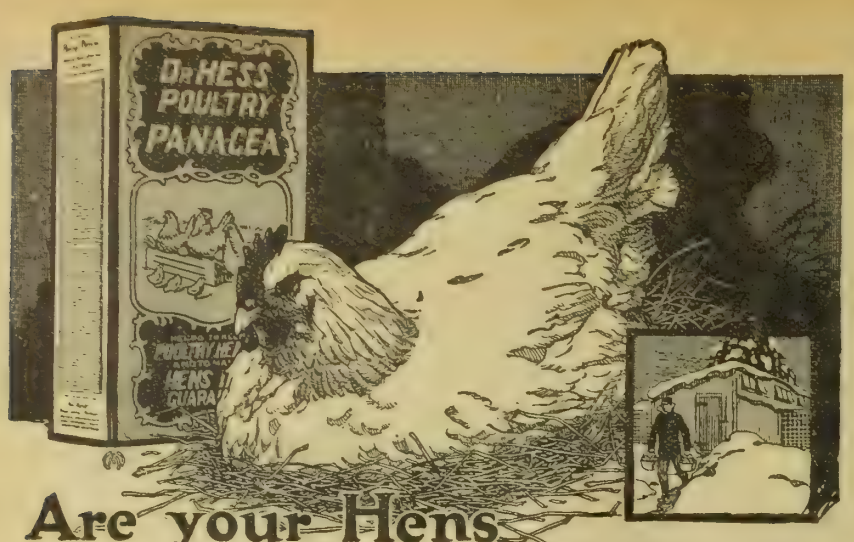

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Always buy Pan-a-ce-a according to the size of your flock. Tell your dealer how many hens you have. He has a package to suit. Good results guaranteed.

30c, 60c and $1.25 packages. 25 lb. pail, $3.50; 100 lb. drum, $12.00. Except in Canada.

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Dr. Hess Instant Louse Killer Kills Lice

Announcing a Change in Policy

In response to demands, numerous and insistent, we announce a radical change in policy.

After December 1st, 1921, we will sell hatching eggs direct to the poultryman. This is done more particularly as an appreciation on our part of the many kindly comments, verbal and written, by our friends and followers.

We shall inaugurate no extensive advertising campaigns. The eggs will be available if they are wanted.

Our birds will, as heretofore, be bred and mated primarily and solely for carrying on our own work. If you get an egg from us you have the assurance that one just like it has gone or will go to make up our own hatches. We never have and we never will do otherwise.

The only distinction we claim for our birds is the fact that they have netted us what seems like a tremendous lot of money. **IN THREE YEARS** during th high-price period, an **average of 4345 BIRDS GAVE US A NET CASH PROFIT OF $29,356.16.** It is the blood of these birds that will flow through the chicks we shall hatch in 1922 and which the purchaser of our hatching eggs will likewise have.

THE EGGS ARE OFFERED AT $10.00 PER 100, $100 PER 1000
SETTINGS OF 15 AT $2.50

Circular, with further information as to matings and flock-average records of pullets and yearlings, on request.

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Our methods in detail will be found in the cloth-bound volume entitled **"How I Made $10,000 in One Year With 4200 Hens,"** which may be read in almost any public library. Copy will be mailed on receipt of $2.50, which will be refunded on return of the volume in good condition within five days if you have not had your money's worth.

Your appreciation of the California Cultivator can be shown best by writing to and buying from Cultivator advertisers.

eggs usually have a thin and watery white.

The Age of Eggs

In practical incubation eggs hatch best when set from three to five days from the nest. Eight to ten days under ordinary circumstances is as long as eggs should be held. As an experiment it is possible to hatch a few chicks from eggs six weeks old. At one time there were a number of chickens in Los Angeles hatched out of imported Chinese eggs. Heavy laying has a tendency to lower the percentage of hatch owing to the fact that the living cells are somewhat underdeveloped. Therefore a hen laying every other day will produce a stronger hatching egg than a hen laying every day for a long period. For this reason a stimulation of breeding hens is almost as harmful as underfeeding.

Three things seem to be necessary in our intensive system: Feed plenty of green feed, wheat bran and raw bone.

Color of Eggs

California is attempting to establish a reputation for a high grade quality of snow white eggs. The Pacific Coast white egg has a good reputation in the eastern markets but buyers object strenuously to yellow or tinted shells. Because we are dependent on New York and other eastern markets to handle our surplus it is well for all commercial poultrymen to be careful in the selection of hatching eggs to the end that we reduce the tinted shells to the minimum number. It is probable that clam shell with a reddish tint influences in some measure the color of the egg shell. This of course may be remedied by feeding a shell material which is white. However, a portion more or less great of the tint in California white eggs is owing to heredity and would have been eliminated long ago if the poultrymen had been careful not to set from any eggs other than those chalk white.

PACIFIC COAST HOLDS RECORDS

Poultry culturists on the Pacific Coast are taking the lead in the production of high record White Leghorns. At the close of the first egg laying contest held in Western Washington our attention is called to several new records which we will no doubt find hard to equal: The remarkable flock average of 210½ eggs per bird for the entire 225 birds entered in the contest. The winning pen, owned by D. Tancred, Kent, Washington, which laid 1,306 eggs, an average of 261 1-5 eggs in 365 consecutive days. These five birds were the original ones entered, no mortality losses causing the use of any of the alternates. However, the record at Leavensworth, Kansas, for the season of 1918-1919, of 311 eggs by a pen of five White Leghorns appears to still be the real high water mark. The two high hens at the First Western Washington contest tied with 312, good shaped, standard sized eggs, thus breaking the American egg laying contest record of 311 eggs. It might be well to bring to the attention of those who believe it necessary for a good utility Leghorn to be possessed of a beefy comb, squirrel tail and coarse type in general, the fact that the winning pair at the Western contest, with records of 312 eggs were of Standard type, good head points, beautiful backs and with tails true to Standard. The winning pen of Leghorns would score 90 points or better without being put in show condition. —Cooperative Poultryman.

CALIFORNIA FARM BUREAU EGG LAYING CONTEST AT SANTA CRUZ

High pens for November 1 to November 10. Alex Stewart, Santa Cruz, 78 eggs; J. J. Shore, Santa Cruz, 72; D. B. Walls, Petaluma, 71; Hanson's Poultry Farm, Corvallis, Oregon, 68; Sunrise Poultry Farm, Santa Cruz, 67; C. H. Russell, Santa Cruz, 67; H. H. Corbett, Santa Cruz, 66; L. A. Thornewill, Santa Cruz, 66; C. P. Brooks, Santa Cruz, 63; Kinmont Poultry Farm, Seattle, Washington, 59; E. D. Crewdson, Santa Cruz, 57; Pacific Trapnest Station, Windsor, 56; Sea Breeze Poultry Farm, Capitola, 55; Piper's Poultry Place, Santa Cruz, 53; W. J. Neef, Santa Cruz, 53; L. A. Thornewill, Santa Cruz, 53; Warren Wood, Santa Cruz, 51; Boehm & Noel, Hayward, 50.

All above are White Leghorns. The total production in the flock is still on the downward grade due to continuation of neck molt. This seems more severe than in past two years, and it is the opinion of some of the local poultrymen that it may be due in part to the great fluctuations in weather temperatures which we have been having during the past six weeks.—Max Kortum, Manager.

FOWLS OF FINE FEATHERS

The ornamental breeds and varieties of chickens often have an unusual appeal. A breeder who may be first attracted to such fowls by their unusual plumage may develop a flock later which has decided utility value, an activity which thus responds to the desire for something exceptional and at the same time profitable. Farmers' Bulletin 1221, issued recently by the United States department of agriculture on standard varieties of chickens, is the fourth in a series from the bureau of animal industry.

The present bulletin treats of the principal reasons for keeping chickens and goes into particular detail regarding the fowls in these classes: Polish, Hamburg, Game; Oriental, in which are the Sumatra and the Malay; and two miscellaneous breeds, the Sultan and the Frizzles.

The poultry industry of the United States is concerned mainly with the production of food, but in addition to this there are fowls of much beauty of plumage or form kept merely for pleasure because of their rarity or unusual appearance. It is this latter interest which accounts for a large number of the breeds and varieties and for the variation in type, color, and color patterns. The bulletin may be had free upon application to Division of Publications, Washington, D. C.

Stop Hatching Weak Chicks

Chicks that hatch a few days mean with cheap incubators. Remember, it is not how many you hatch that counts but how many you raise. out weak and wobbly, and live but nothing to you but trouble and loss.

Queen Incubators

produce large hatches of strong, vigorous chicks that live and grow. The Queen is accurately regulated—taking care automatically without attention of a variation in temperature of 70 degrees without danger to the eggs. It is built of genuine Redwood—very scarce in these days of imitation. Redwood does not absorb the odor from hatching chicks. Cheaper woods and strawboard or composition lining in iron or tin machines, retain the odors, to weaken and kill the chicks of later hatches.

Queen Incubators and Brooders are sold by dealers everywhere. Send for Free Book. (42)

QUEEN INCUBATOR CO. **Lincoln, Nebraska**

Baby Chicks

POULTRY, DOGS,

Cats, Pigeons, Rabbits, Supplies of All Kinds—Everything for the Poultryman—Chicks hatching twice a week. Pullets of all kinds.

Special Xmas goods. Write us for prices.

Fancier's Exchange

640 So. Main St., Los Angeles, Cal.

Holly Poultry Ranch

Hatching Capacity 200,000 Eggs **Largest and Finest Hatchery in Southern California**

White Leghorn Chicks Only *Order Your Spiing Chicks Now*

Our customers' Contest which closed September 30th showed Farm No. 11 with 600 pullets hatched February, 1920, laid 217.09 eggs each, all in one flock. Can you beat this record?

We supply you stock bred for over 10 years for heavy production incubated in the finest hatchery with perfect ventilation, chicks delivered in perfect condition by our two specially constructed and ventilated auto delivery cars, capacity, 15,000 chicks at one load, or packed for express shipment by an expert who had 15 years in the express service. Can any other Hatchery or Breeder offer you such service and quality chicks, bred for heavy production?

Call and see our **NEW AIR WASHER SYSTEM,** nothing like it anywhere. Perfect ventilation.

We are exclusive hatchers for spring of 1922 for: Fred R. Richardson, George J. Richardson, Charles G. Weaver, L. G. Hack, G. A. Saylor, C. W. Phelps and George L. Miller, being the product of 25,000 selected breeding hens.

I am Southern California agent for the Kresky Brooder Stove Works, manufacturers of the Famous Pride of Petaluma Ventilating Brooder Stove. I supply you with accurate information on construction and ventilation of Kresky Brooder Houses. Also carry a full line of stoves and parts.

A Card Brings Our Circulars **Visitors Welcome Except on Sundays**

WEST SHERMAN WAY and SAUGUS AVE.

Phone 144 **B. R. HOLLOWAY** **P. E. Hanna Station, Van Nuys, Cal.**

Our National Bird of Freedom

By Jean A. Koethen

THREE hundred years ago last December, when our Pilgrim forefathers landed on the stern and rockbound coast of Massachusetts, they found, among all the new and strange creatures that greeted their wondering eyes, one that must have seemed like an old friend. We may easily believe that on their first hunting expedition into the wilderness Governor Bradford and his friends sighted, roosting on the topmost branch of a wind-racked pine, his lordly head gleaming bright against the wintry sky, a bird that greeted them with a lusty "Gobble, gobble, gobble," and drew from their astonished lips expressions of recognition and gratification.

The turkey had been known in England a hundred years before 1620, and while it was found only on the tables of royalty and the very wealthy its reputation reached to the humblest cot, for no bird so fit for a great celebration, so large, so tender and juicy, or of so delicious a flavor had been seen there before. Its beauty, too, was amazing, far exceeding that of the conceited peafowl, and it bore itself with a regal air that hinted at lordly domination in those far western forests. No wonder Governor Bradford and his followers were delighted to find the choicest meat of the king's table theirs for the hunting.

The turkey the Pilgrims found on the New England coast was not the oscellated turkey which early Spanish explorers found in Mexico whence they immediately introduced it to the continent of Europe, but the common wild turkey of North America (Meleagris americana), which was found east of the Rocky Mountains from Canada to Florida. The Indians of Mexico had already domesticated the oscellated variety, the ancestor of our Mammoth Bronze. The North American wild turkey was more like the Narragansett in size and color, though in Kentucky and some other portions of the Middle West it showed a reddish coloring which marked it as progenitor of the Bourbon Red.

As the turkey had already become known in England as the bird for feast days, so it stepped naturally into the same position in the New World, and for 300 years it has been the standardized center of the Thanksgiving and Christmas dinner. No wonder the turkey industry is one of increasing magnitude and the problems of turkey culture are studied with interest by thousands of breeders and scientists.

Hard to Raise

If all the turkeys hatched every year lived to grace the Thanksgiving table we might be paying 15 cents a pound instead of 45. Almost every man and woman interested in poultry has tried at some time or other to raise turkeys. If the first venture was successful a second was tried, and only the utter failure which sooner or later tries the souls of all of us could quench their enthusiasm. The lack of vigor of very young turkeys is the more surprising and anomalous because adult turkeys are extremely vigorous. The turkey grower that can bring his turkeys up to three months of age is through with his troubles. Thereafter they roost on high fences or in trees, eat anything within reason, and are rarely troubled by lice or disease. The problem is to get them through those first three months.

Heat plays a large part in the life of baby turkeys. Many of those that die the first two weeks are undoubtedly victims of chill. Especially is this true of poults mothered by chicken hens. If the hen is carefully watched and kept in a small, warm coop where there is little chance to scratch or move about she may mother her charges properly. If she is allowed to uncover them in the chill of early morning their lease of life is short. Many turkey breeders prefer artificial brooding on this account. The poults can be kept warm when they need heat and are not dependent on the vagaries of a temperamental Biddy.

Another critical factor in raising poults is diet. There seems little doubt that the majority of those that survive the first two weeks are killed by overfeeding, but determination of the exact amount of food required is so delicate a matter that the most careful feeders rarely raise over 70 per cent of the poults they hatch, and 50 per cent would probably be nearer the average the country over, including farmers, backlotters and turkey specialists. "Keep them hungry" is the rule we all try to follow, but it is possible to keep them too hungry in infancy, and the word "hungry" is not easy of definition at the best so we muddle along, overfeeding when we think we are keeping the rule, and in the end our little turkeys pay the reckoning.

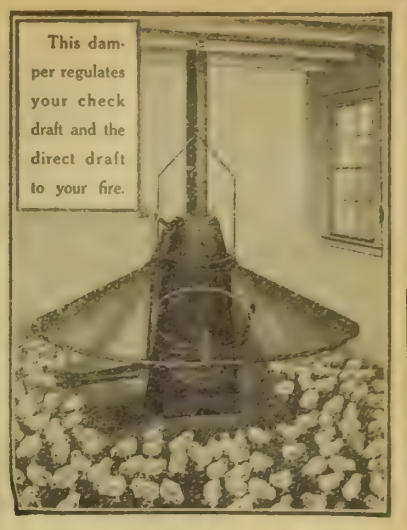
Absolute cleanliness is the third essential in raising poults. Coops must be moved frequently, brooders cleaned daily, louse powder used weekly, water always fresh and clean. This careful attention, with the frequent and watchful feeding of the first two months, and the time spent in grinding or chopping feed, makes the labor and expense of turkey raising greater than might be supposed at first sight, and expectation of a fair profit in the end is the only incentive that will keep turkey growers at their too often disappointing task.

Organization Necessary

Turkey growers of California have not as yet organized for the marketing of their product, except for a very few local associations, but the matter is under consideration by the state market commission, and many growers feel that there is as great need for such organization as for those of fruit, nut and egg producers. The hazards of turkey production are greater than those of egg production. Given fair stock and reasonable care the pullet crop is practically certain. With the best of stock and the most exacting care one is never certain of his turkey crop, and if at the end the bottom falls out of the market, where is he? The demand for turkeys at holiday time has increased with the increase of our population till it has caught the attention of Middle West farmers who can raise their turkeys on home grown corn and wheat with far less expense than is possible to the California turkey rancher. How much truth there was in the item published a few weeks ago in the daily papers to the effect that prices in markets this year are low because of cold storage turkeys on hand I cannot say. If this is true an organization which will stabilize the market and make it impossible for left-over turkeys from other states to deprive California ranchers of their just earnings is an imperative necessity. The state market commission has its eye on these conditions and is ready to cooperate with the growers whenever they are ready.

Out of 3,627,028 turkeys in the United States in 1920, 174,708, or about five per cent, were in California. This is not the proportion we ought to have, with our magnificent climate, and great, dry valleys where turkeys find their most happy environment. With suitable organization for marketing, as well as for cooperative attack on the difficult problems of turkey culture, we ought to raise ten per cent of the turkeys raised in the country, and we are safe in predicting that another census year will see just such a report. Her system of marketing fruit and eggs has brought this state into the

(Continued on Page 595.)



Queen Brooder Stoves

will burn coal, coke, wood, or bricquets. The only safe and reliable method of brooding chicks. Queen stove has patent draft that controls heat perfectly. Write for catalogue, also ask for general catalogue of full line poultry supplies.

C. E. HILL CO.
418 11th St. Oakland, Cal.
"Everything for the Poultryman"

FOR GREATER EGG PRODUCTION FEED— COULSON'S EGG FOOD
FULL PARTICULARS IN OUR FREE BOOK "CHICKENS FROM SHELL TO MARKET"
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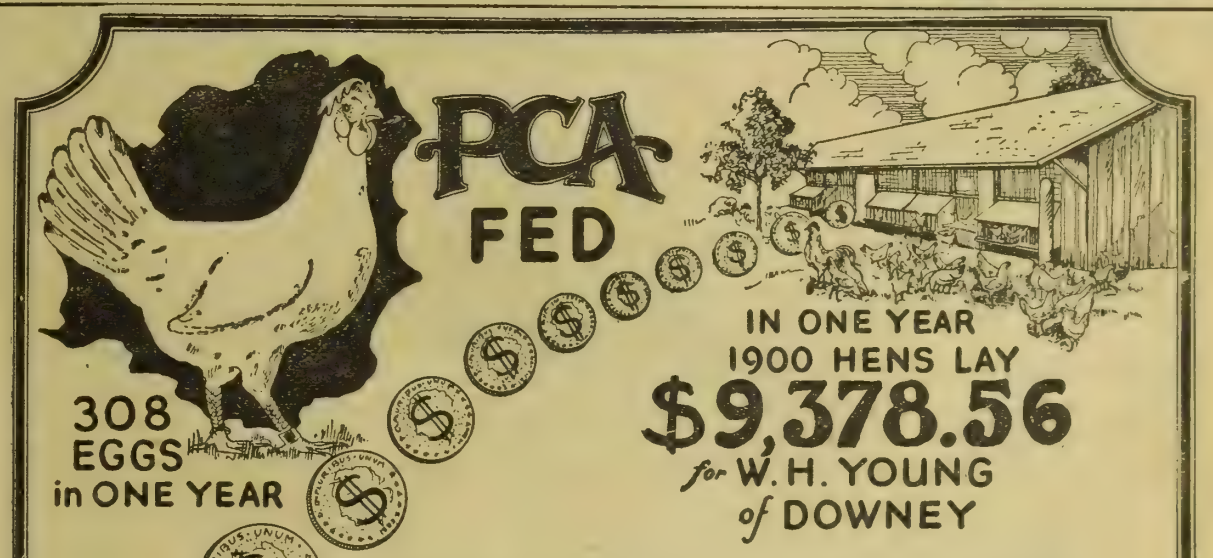
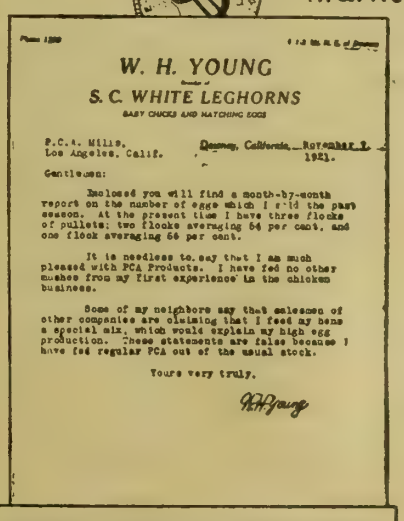


Market Value of Eggs Laid Month by Month



W. H. YOUNG
S. C. WHITE LEGHORNS
BABY CHICKS AND HATCHING EGGS

P.C.A. Mills, Los Angeles, Calif. Downey, California, November 1, 1921.

Gentlemen:

Enclosed you will find a month-by-month report on the number of eggs which I sold the past season. At the present time I have three flocks of pullets; two flocks averaging 54 per cent, and one flock averaging 56 per cent.

It is needless to say that I am much pleased with PCA Products. I have fed no other mashes from my first experience in the chicken business.

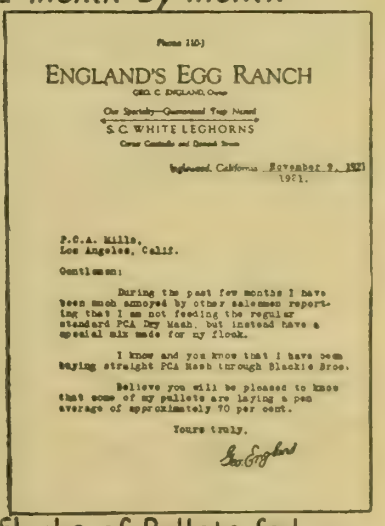
Some of my neighbors say that salesmen of other companies are claiming that I feed my hens a special mix, which would explain my high egg production. These statements are false because I have fed regular PCA out of the usual stock.

Yours very truly,
W. H. Young

2000 HENS & PULLETS
NOV. —— 1,175.00
DEC. —— 1,100.00
JAN. —— 987.44
FEB. —— 883.24
MCH. —— 875.29
APR. —— 692.62
MAY —— 581.14

900 HENS
JUNE —— 421.58
JULY —— 423.53

2100 HENS & PULLETS
AUG. —— 702.14
SEPT. —— 631.89
OCT. —— 904.64
$9,378.56



ENGLAND'S EGG RANCH
GEO. C. ENGLAND, Owner
Our Specialty—Quantity Egg Yield
S. C. WHITE LEGHORNS
Correct Conformation and Unusual Vigor

Inglewood, California, November 9, 1921.

P.C.A. Mills, Los Angeles, Calif.

Gentlemen:

During the past few months I have been much annoyed by other salesmen reporting that I am not feeding the regular standard PCA Dry Mash, but instead have a special mix made for my flock.

I know and you know that I have been buying straight PCA Mash through Blackie Bros.

Believe you will be pleased to know that some of my pullets are laying a pen average of approximately 70 per cent.

Yours truly,
Geo. England

EVERY DEALER IS AUTHORIZED TO REFUND YOUR MONEY IF PCA FEEDS DO NOT PLEASE YOU. SEND TODAY FOR INFORMATION AND OUR POULTRY LITERATURE.

Hundreds of small flocks of Pullets fed on PCA DRY MASH show a similar profit. Feed and care makes the difference between profit and loss. *FEED* PCA *and TAKE NO SUBSTITUTE*

WRITE US A LETTER

POULTRYMEN'S CO-OPERATIVE MILLING ASSOCIATION
1516 INDUSTRIAL ST. LOS ANGELES, CAL.
PHONES 12076 MAIN 2935

The Foundation for Poultry Success
PCA Dry Mash
Los Angeles

Los Angeles Markets

Los Angeles, November 30, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price, 49 cents.

Nov.	22	23	25	26	28	29
'21	51	47	47	47	49	49

CHEESE

Brokers' prices:
California flats, 23@25.

EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 56; case count, 55; pullets, 48; pewee pullets, 35.

Nov.	22	23	25	26	28	29
'21	67	67	65	65	61	56

POULTRY

Price to producers: Hens, 25; colored, 29; broilers, 40; roasters, 27; old roosters, 16; fryers, 30; ducks, old, 20; ducklings, Pekin, 3½ up, 28; others, 28; geese, 28; turkeys, live, young tom, 34; dr., 40; old, live, 29; dr., 35; hens, live, 34; dr., 40; small hen and tom, 15; squabs, 55@60.
Belgian hares, 14@19; old, 8.

LIVESTOCK

Los Angeles, Nov. 29.—Weighed and delivered off cars without food or water:
Hogs (hard grain fed), 125 to 175 lbs., 8.00; 175 to 225 lbs., 8.50.
Cattle (on foot, gross weight): Steers, good, 6.50; medium, 6.00; cows, good, 5.00; medium, 4.50; bulls and stags, 3.00; calves, 125 to 150 lbs., 8.00; 150 to 225 lbs., 7.00.
Sheep: Ewes, 3.50@4.00; lambs, 7.00@7.50.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, November 29, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.

Potatoes: Market steady. Lugs mostly 90@1.00. Burbanks, per cwt., best, 2.50@2.75; few 2.85; poorer low as 2.25. Russets, 2.20@2.40; rurals, mostly 2.00@2.20. Sweet potatoes: No. 1, mostly 85@90 lug.
Onions: Demand limited, market dull. Stocktons: Per cwt., White Globes, best, cold storage stock mostly 5.00@5.25; other whites, 4.50@5.00; yellows and browns, 4.00@4.25; poorer, 3.50. Per lug whites, best, 1.50@1.75; poorer, 1.35@1.50; browns, 1.25@1.50; Lompoc browns, 4.50@4.75. Locals: Spanish, sacked, per cwt., 4.50@5.00. Garlic, 7@10, high as 15.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock, November 29, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.
Artichokes: Fy., 2.00 doz.
Beans: Demand moderate, market firm. Per lb., green pods, 8@11; poorer, 6; limas, market firm. 10@12.
Bunched Vegetables: Supplies increasing. Per dozen bunches: Turnips, 40; beets. 50; carrots, 45@50; radishes and parsley, 15; spinach, 25; green onions, 12½@15.
Cabbage: Market weak. Per field crate, mostly 2.50.
Cauliflower: Market steady, 2.25@2.50 per crate for best stock.
Celery: Market firm. Local, per cr., 3.50@4.00; poorer, 3.00@3.25.
Cucumbers: Market steady. Locals: 1.25@1.50 for best; poorer, 85@1.00 per lug. San Diego, 1.20@2.00, according to quality.
Egg plant: Lb., 3@4.
Lettuce: Demand moderate, market firm. Locals: Field crates, best, 75@1.00.
Parsnips: Lug, 70@85.
Peas: Market firm. Lb., fancy, 11@14; poorer, 8@10.
Peppers: Locals: Bells, green, per lug, 1.00@1.10; chilis, 50@75; pimientos, 75@90 lug.
Rhubarb: Lug, 75@90.
Squash and Pumpkins: Market steady, movement good. Hubbard and Banana squash mostly 1½ lb.; cream squash, 2; summer squash, 1.25 per lug. Pumpkins, 1@1½ lb.
Sweet anise, 75 doz.
Tomatoes: Market firm on good stock. Locals: No. 1, per lug, mostly 1.50@2.00; poorer, 60@1.00.

FRESH FRUITS

Apples: Demand and movement improving, market steady. Locals: Windfalls, 1½@3; Romes and Winesaps, 4@5 lb.; few best Delicious and Jonathans, Yucaipa section, 5@7. Watsonville: Fancy, 3½ and 4 tier Bellefleurs, 1.60@1.70; poorer, 1.50; 4½ tier, 1.25@1.35; B grade, 4 tier, 1.25@1.35. Idahos, Washingtons and Oregons: Jonathans, extra fancy, large, 3.00@3.25; medium, 2.75@2.90; fancy medium to large, 2.50@2.75; small, 2.40@2.50. Oregons: Spitzenburgs, medium to large, extra fancy, mostly 2.60@2.75; fancy, 2.40@2.65.
Avocados: 50 lb.
Cranberries: Market steady. Massachusetts: Late Howes, 25.00 bbl.; ½ bbls., 12.50@12.75. Washingtons: McFarlins, ½ bbls., 7.50@8.00.
Figs: Large boxes, 2.00; single layer, 90@1.00.
Grapes: Demand good, market firm. Per lb.: Malagas, 8@11; Red Emperors, 7@9; Cornichons, supplies limited, 8.
Melons: Casabas, 1½@2½ lb. for best.
Olives: Ripe, lb., 4@6.
Pears: Demand moderate, market firm. Bartletts, mostly 5½@8.
Persimmons: Lb., best, 10@15; others, 7@8.
Pomegranates: Lb., 5@8.

CITRUS FRUITS

Grapefruit: Market firm. Northern, per packed box, 3.25@3.75; Imperial Valley, 5.50@6.00. Arizonas, 4.50@5.25.
Lemons: Demand slow, market weak. Locals: Special pack, mostly 4.00; few 4.25; market pack, 3.00@3.25; loose boxes, 1.50@2.00; lugs, 75@1.25.
Oranges: Demand moderate, market steady. Navels, special brands, 216s to 126s, 4.75@5.75; market pack, 3.00@4.50, according to size and quality; culls, field boxes, 2.25@2.50.

GRAIN AND FEEDS

Grain Exch. price bid Nov. 29:
Barley: 100 ton lots, Dec. del., 1.38.
Milo: 100 ton lots, Dec. del., 1.33.

HAY

Alfalfa Growers of California report:
Market firm in all parts of state. Prices in local markets of districts where crop is mostly marketed showed moderate advance.
There were 1,150 tons of grain and tracks the week ending November 26, with 370 tons held over.

Prevailing prices last week, delivered in the vicinity of Los Angeles:

No. 1 Dairy Alfalfa	22.00
Standard Alfalfa	17.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats	20.00@26.00
Barley	16.00@24.00
Alfalfa, Rabbit	24.00@28.00
Alfalfa, No. 1 Dairy	19.00@21.00
Standard	16.00@18.00
Straw	12.00

San Francisco Markets

San Francisco, November 29, 1921.

BUTTER

Extras						40
Nov.	22	23	25	26	28	29
'21	51	50½	50	....	46	40

CHEESE

Dairy Exchange quotations:

Cal. Flats	24½
Cal. Y. A.	31½
Ore. Trips	31
Ore. Y. A.	35

EGGS

Dairy Exchange quotations:

Extra						61
Extra Firsts						60½
Extra Pullets						48½
Undersized No. 1						38
Nov.	22	23	25	26	28	29
'21	73½	71	70	....	67½	61

POULTRY

Wholesale prices are:
Poultry: Young chickens, Leghorns, 1 to 1½ lbs., 48@50 per lb.; above 1½ lbs., 40 per lb.; heavy breeds, 26@27 per lb.; staggy roosters, 20@25 per lb.; old roosters, Leghorns, 16 per lb.; heavy breeds, 18 per lb.; hens, Leghorns, large, 25@28 per lb.; small to medium, 24 per lb.; heavy breeds, 28@30 per lb.
Ducks: 22@25 per lb.
Geese: 30@33 per lb.
Squabs: Fancy, 50; do, common, per dozen, 3.50; old pigeons, 3.50 per dozen.
Belgian hares: Live, 16@18 per lb.; do, dressed, 25@28 per lb.

LIVESTOCK

Western Meat Co. quotes:
Weighed off cars at our yards in South San Francisco:
Cattle: No. 1 steers, 6@6½; do, second quality, 4¾@5¾; cows and heifers No. 1, 4¾@5¼; do, second quality, 4@4¾; bulls and stags, 3@3½.
Calves: Light weight, 7½@8½; heavy, 6@6½.
Sheep: Wethers, 4@4½; ewes, 2¾@3¼.
Lambs: 7@7¾.
Hogs—Hard, fat, grain fed, weighing 125 to 200 lbs., 9½; 200 to 250 lbs., 8½; 250 to 300 lbs., 7½; light sows, 7½; heavy, 6½.
California Farm Bureau Marketing Association reports:

No. Hogs	Av. Wt.	Dock	Price
Tulare, November 22			
78	172	.....	9.75
83	194	.....	9.55
89	179	.....	9.55
78	190	60	9.35
7 feeders	113	.....	9.35
23	144	.....	9.25
34	228	.....	7.75
10	322	.....	6.75
18	354	330	5.75
1	760	.....	4.00
5 cars, 41 consignors, $7,363.68.			
Visalia, November 23			
80	184	.....	10.05
96	173	.....	10.00
45	222	50	9.00
1	220	.....	9.00
3	307	.....	8.00
2	275	20	7.00
3 cars, 19 consignors, $4,186.48.			
McFarland, November 24			
95	155	50 Mud	9.50
94	176	.....	9.20
3 feeders	113	.....	9.20
49	196	.....	9.00
59	223	.....	8.80
1	290	.....	7.80
5	324	140	6.80
4 cars, 13 consignors, $5,134.25.			
Hanford, November 26			
91	154	.....	9.85
88	187	.....	9.50
23	196	.....	9.20
27	220	40	8.20
6	448	10	6.20
3 cars, 28 consignors, $4,307.96.			

Total for the week, 15 cars, 101 consignors, $20,992.37.
These prices are f. o. b. shipping point to the farmer, while the prices quoted by the newspapers are off cars at their packing houses.

POTATOES AND ONIONS

Street prices:
Potatoes: River, fancy, 2.25@2.50; choice, 2.00@2.25; Oregon Burbanks, 2.65@2.75; Salinas, 3.75; netted gems, 2.75@2.90; British Queens, 2.25@2.35. Sweets, 2.90@3.25.
Onions: New crop Yellow, 3.25; Brown, 3.75@4.00; few fancy, 4.50; Green, 1.50@2.00 per box.
Garlic: 2@5 per lb.

VEGETABLES

Wholesale selling price:
Artichokes: 15.00@18.00 cr.
Beans: String, 5@11 lb.; lima, 10@12½; wax, 5@11.
Brussels Sprouts: 7@9 per lb.
Carrots: Sk., 1.00@1.25.
Celery: 75@1.50 cr.; fy., 2.00; bunch, 10@18.
Cucumbers: Hothouse, 1.35@1.50; Southern, 60@85; some 1.00.
Eggplant: 1.00@1.25 lug; So., 4.00@5.00.
Lettuce: Crate, 90@1.25; Los Angeles, 1.00@1.50.
Mushrooms: Box 50@1.00.
Okra: 1.00@1.50 per box of about 10 lbs.
Peas: Lb., 5@12½.
Peppers: Bells, 3@4 lb.; 50@75 lug; Chili, 3@5.
Rhubarb: Southern, box, 1.75.
Tomatoes: 75@1.25 cr.; 1.75@2.00 lug.

FRESH FRUITS

Apples: California: Bellefleur, fancy, 1.50@1.65; Newtown Pippins, 3½ and 4 tier, 1.65@1.85; 4½ tier 1.25@1.50; B grade, 1.25@1.35; Spitzenburg, 4 tier, 1.50@1.75; 4½ tier, 1.15@1.50; Baldwin, 4 tier, 1.40@1.60; 4½ tier, 1.15@1.35. Northwestern: Spitzenburg, extra fancy, 2.50@2.75; fancy, 2.25@2.50; choice, 1.75@2.00; Rome Beauty, fancy, 3.00@3.25; choice, 2.50@2.75; banana, extra fancy, 3.25@3.50; fancy, 2.75@3.00; Delicious, 2.75@3.00; Jonathan, extra fancy, 2.00@2.50; fancy, 1.75@2.00.
Avocados: California, doz., large, 3.00@5.00; small, 1.00@2.00; Fla., 5.00@6.00; Tahiti, 2.50@3.50.
Bananas: Eastern, 6@7; Hawaiian, 6@7½.
Blackberries: 60@85.
Cranberries: Box, 5.50@6.00; Cape Cod, 21.00@23.00 bbl.
Figs: Black, double layer, 1.00@1.50.
Grapes: Black, 2.75@3.25; Tokay, 3.00@3.50; Muscat, 2.75@3.75; Malaga, 2.75@3.25; seedless, 4.00@4.25.
Huckleberries: 8@11 lb.; fy., 15@18.
Melons: Casabas, 75@1.00 per doz.
Olives: Large, 8; small, 5.
Pears: Winter Nellis, 2.50@3.25 box; Beurre Clairgeau, 2.00@2.50; De Anjou, 2.00@2.50; Beurre Hardy, 1.50@2.00; do, fancy, 2.50@3.00.
Persimmons: 1.50@2.25.
Pineapples: 4.00@5.00 doz.
Pomegranates: Box of ½ doz., 2.00@2.50.
Prunes: 1.00@1.25 cr.
Quinces: 1.25@1.50 lug.
Raspberries: 75@1.00 dr.
Strawberries: 75@1.25 dr.; case, 2.00@2.50.

CITRUS FRUITS

Oranges: Valencias, nominal. Lemons, 3.00@5.00 per box; lemonettes, 1.50@3.00 per box. Grapefruit, 3.00@4.25 per box for California and Arizona. New crop Navels, 5.25@5.75; choice, 4.25@4.75. Tangerines, cr., 2.50@3.00; Mandarins, box, 2.50@3.00.

BEANS

Below California Bean Growers Association shippers' prices choice recleaned:

Large Whites	5.05
Small Whites	4.90
Pinks	4.60
Mexican Reds	4.50
Red Kidney	6.65
Henderson Bush	6.50
Cranberries	6.65
Bayos	4.50
Blackeyes	4.75

NUTS

California Almond Growers Exchange's prices:

Languedoc	14½
Hard Shell	11

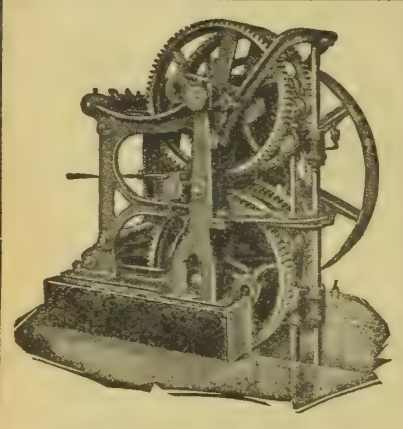
Manchurian walnuts, 17.
Chinese peanuts, fy., 9½.

HAY AND FEED

California Alfalfa Growers report:
Prevailing prices last week, f. o. b. San Francisco:

No. 1 Dairy Alfalfa	16.00
Standard	15.00

A. W. Scott Co. says:
Arrivals past week, 750 tons. Alfalfa is moving better than for some time and is in better demand as the colder weather increases the feeding. The bulk of the shipments is coming in from Nevada at



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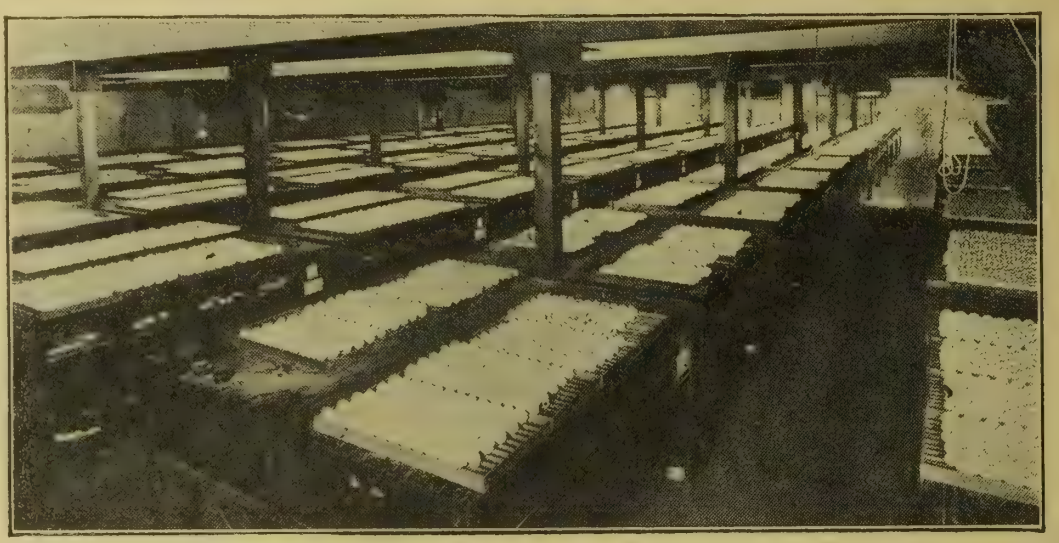

Seventy Thousand Eggs
In the incubator house of the Holly poultry ranch at Van Nuys.

prices lower than are entertained by California holders. Prices are stationary, however, on account of the uncertain factor of large California supplies not ready for release at present figures, but which may be put upon the market at any time as the minds of the holders may change.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the markets in San Francisco (for prices to consumers, charges of switching, cartage, commission and handling expenses must be added, according to conditions).

Wheat hay No. 1	17.00@19.00
Wheat hay, fair grade	14.00@17.00
Tame oat hay	15.00@18.00
Wild oat hay	11.00@13.00
Alfalfa hay	13.00@16.00
Stock hay	9.00@12.00
Straw	10.00@12.00
Rolled Barley	29.00@30.00
Ground Barley	31.00@33.00
Oats, Rolled Feed	34.00@36.00
Bran and Millrun	24.00@27.00
Middlings	40.00@44.00
Cocoanut Meal	23.00@26.00
Alfalfa Meal	21.00@23.00
Cottonsed Meal	40.00@42.00
Sugar Beet Pulp	27.00@29.00
Molasses Tanks	21.00 Barr. 25.00
Milo Maize, Corn Meal and Cracked Corn	36.00@40.00
Scratch Feed	40.00@43.00

GRAIN

Sales on Grain Exchange:

Barley: Feed, 1.25@1.32½; shipping, 1.32½@1.40.

Wheat: Mill, 1.85@1.95; feed, 1.85@1.95.

Red Feed Oats: 1.55@1.60; seed, 1.75@2.10.

Corn: California yellow, 1.45@1.50; eastern yellow No. 2, 1.37@1.40; No. 3, 1.36@1.38; No. 3 kaffir, in bulk, nominal; white Egyptian, 1.60@1.65; California red milo, 1.45@1.50.

Citrus Markets

Los Angeles, November 30, 1921.

Arizona Navels are arriving in the auctions and are commanding from $4.00 to about $6.30. Valencias are closing out strong, occasionally showing spectacular prices, one sale running to $10.90.

Lemons are quiet, holding around $3.00-$4.00.

Shipments

Shipments of citrus fruits to date since November 1, 1921. Southern California: Oranges, 404 cars; lemons, 353; total, 757. To same date last season: Oranges, 250; lemons, 340; total, 590. From Central California to date this season: Oranges, 765; lemons, 12; total, 777. To same date last season: Oranges, 983; lemons, 21; total, 1,004. From Northern California to date this season: Oranges, 91; lemons, 2; total, 93. To same date last season: Oranges, 89; lemons, 1; total, 90.

AT THE AUCTIONS

November 28

New York: 16 or., 5 lem. Val. 4.35@10.75, lem. 2.70@3.90.
Boston: 3 or., 2 lem. Val. 7.30@8.25, lem. 2.80@3.90.
Pittsburg: 6 or., 1 lem. Val. 3.00@5.80, Nav. 4.30@6.30, lem. 3.40@4.60.
Philadelphia: 2 Val., 1 Arizona Nav., 1 lem. Val. 3.45@6.85, Ariz. Nav. 4.85, lem. 3.20@3.75.
Cleveland: 3 or., 1 lem. Val. 4.55@6.45, Nav. 6.25@6.80, lem. 3.45@4.15.
St. Louis: 1 lem. 1.80@1.85.
Cincinnati: 1 lem. 2.20@2.95.

November 29

New York: 9 or., 3 lem. Val. 3.75@10.90, lem. 2.40@3.45.
Boston: 3 or., 1 lem. Val. 3.90@6.70, lem. 2.70@3.75.
Philadelphia: 1 Val. 4.10@5.00.
Pittsburg: 1 lem. 3.65@4.50.

OUR NATIONAL BIRD

(Continued from Page 593.)

limelight. California is quoted in the East as a model of protection to grower and justice to consumer. What the turkey producers demand, not singly, but unitedly, they will get. The caption in a recent issue of an Eastern agricultural publication, "United we stick; divided we are stuck," might well be taken as the slogan of California turkey producers.

Poultry Queries

Conducted by Jean A. Koethen

Cull the Broodies

I have what is considered a laying strain of White Leghorns and feed standard dry mash, scratch mixture, two-thirds wheat, one-third corn, sprouted oats daily; but April pullets are already ten per cent broody, although the flock from which they came had practically no sitters. Can you explain this and give remedy?—Subscriber, Napa.

When broodiness is greater among daughters than among their mothers the fault is evidently with their sires. Probably the breeder from whom you purchased your stock took no pains to make sure that his breeding males were sons of high producers. Many a flock has been spoiled by such carelessness. The ability to produce a large number of eggs without stopping to sit is a quality that is transmitted through the male line to a greater extent than through the female. If your breeding male is the son of a hen that went broody early and often, be sure his daughters will have the habit. Your only remedy is to cull out every hen that goes broody before next summer. Put these hens by themselves and try them out for a while before you send them to market. You may find some that go broody so rarely that they are worth keeping a while longer, but those that want to sit two or three times in a season are worthless on a commercial ranch.

MORE EGGS

One of the handiest things around the poultryman's house which we have seen is the P. C. A. calendar, the most striking feature of which is "More Eggs More Profit." It is issued by the Poultrymens Cooperative Milling Association. It not only has the usual sheet for each month but on the back are cash account and miscellaneous memorandum blanks. Instead of being perforated for tearing off, each monthly sheet is turned up under a cover and the new month appears with its possibilities for the complete poultry yard record. Thus all the sheets are retained until the end of the year, and at that time there will be the entire record of the poultry yard, including egg record for each day. This may be filed as an original entry journal and kept with other accounts of the ranch. Acting as a lock in the pocket which holds the months' records which have been completed, a pencil is inserted, thus always ready at hand for keeping the records.

POULTRY CENSUS

(Continued from Page 575.)

ens are marketed and slaughtered to a considerable extent throughout the year, and an enumeration in January of a given year would include a larger number of chickens than an enumeration made for April 15 of the same year. The production of eggs shows an increase of about five per cent, and it would seem reasonable to assume that the actual increase in the number of chickens on farms was approximately the same.

The chickens reported in 1920 were valued at $349,508,867, as compared with $140,193,129 in 1910.

The number of turkeys on farms in the United States on January 1, 1920, was 3,627,028, as compared with 3,688,708 on April 15, 1910; the number of ducks in 1920 was 2,817,624, as compared with 2,906,525 in 1910; and the number of geese in 1920 was 2,939,203, as compared with 4,431,980 in 1910. The figures for these fowls are probably less affected by the change in the census date than those for chickens.

In 1920 there were 2,410,421 guinea fowls on farms, as compared with 1,765,031 in 1910; and the number of pigeons reported in 1920 was 1,493,630, as compared with 2,730,994 in 1910. Only 231 ostriches were reported as on farms in the United States in 1920, as compared with 5,361 in 1910.

According to the table showing number of poultry in the various states, California had in 1920, 10,426,648 chickens as against 5,665,964 in 1910. Turkeys: 1920, 174,708; 1910, 116,602. Ducks: 1920, 64,762; 1910, 40,061. Geese: 1920, 14,914; 1910, 14,195. Guinea fowls: 1920, 8,987; 1910, 2,920. Pigeons: 1920, 120,986; 1910, 246,065.

Probably the two most surprising items in this report are the great, almost disastrous, decrease in number of ostriches, reducing from 5,361, which was the number in the United States in 1910, to 231, all there were left in 1920; and the other item has to do with the increase in guinea fowls from 2,000 to 8,000. The increase of nearly 100 per cent in chickens in this state is most gratifying.

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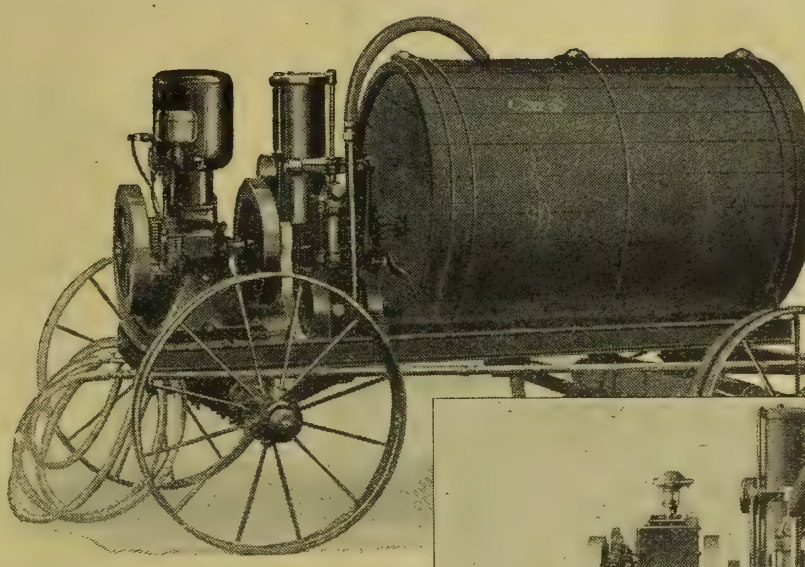

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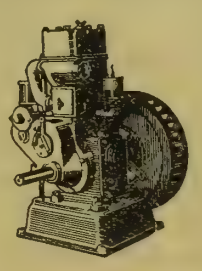

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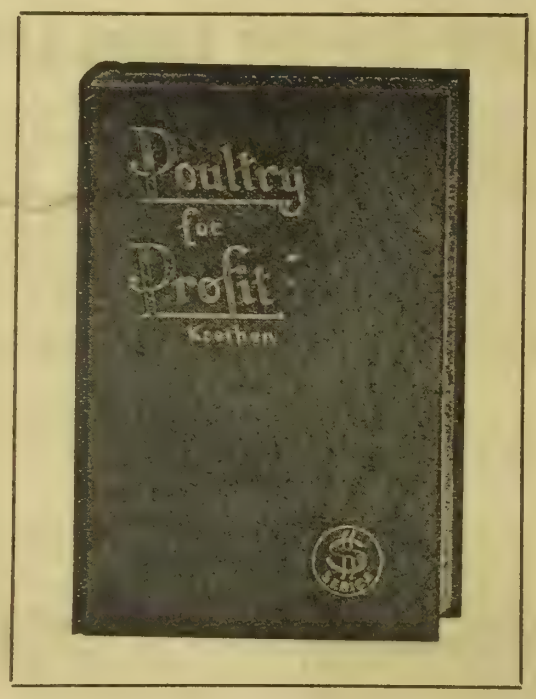

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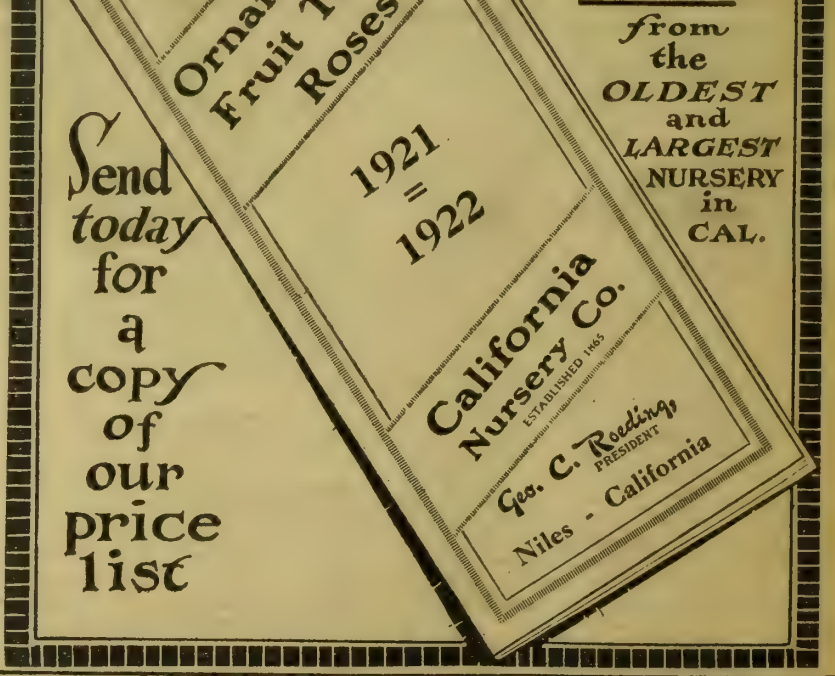

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LVII — December 10, 1921 — No. 24

Cocos Plumosa, One of Our Most Beautiful Palms

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Rural Californian, Established 1877

Combined with California Cultivator 1914 Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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Advertising rates furnished on application.

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The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

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Saturday, Dec. 10, 1921

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

If among the more than 40,000 Cultivator's weekly circulation any fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

EDITORIALETTES

One of our beautiful palms graces this week's cover. It may not add to our material wealth, but it is not alone material wealth which has made California great. Somewhere we have seen: "That which is purely practical, containing no element of idealism, may sustain existence and to that extent be valuable, but it does not civilize. I believe it is the idealism of pure knowledge, the idealism in applied knowledge, the idealism in industry and commerce, the idealism in literature and art, the idealism in personal religion, which leavens the life of the world and pushes forward the boundaries of civilization."

* * *

Speaking of the tariff, we may add that Cuban producers—with American importers—have been putting out some heavy editorial propaganda for free sugar. The propaganda has not come through the editorial rooms, however, but through "boiler-plate." Boiler-plate is ordinarily a harmless, innocuous lot of junk on the shelves of the workroom of the ordinary print shop. In case of shortage a few inches or a few feet of boiler-plate is sawed off and used in the columns of the paper, thus saving on the composition bill and often securing some very creditable material for the paper. Realizing the ease with which this matter gets entrance to the paper, the importers' propaganda secured entrance to the "boiler-plate" factories with special inducements to secure the delivery of the "copy" to sugar beet producing districts. Many a hurried country editor has passed it in and the beet producers have been educated by a low tariff propaganda. One of these pieces of copy was labeled: "Prepared by the National Geographical Society." Of course, the National Geographic never saw, nor in any way endorsed, the copy any more than did the other organizations which were used in effecting the disguise.

* * *

Limoneira Ranch has made a very tidy saving in fumigation expense. Formerly it cost some $76,000 annually to keep the scale pests reduced, but for a few years they have been trying the plan of "let the bug eat the bug," and this year's cost for fumigation for pest control is cut to $25,000.

* * *

Back in Kansas the other day they had a feast. The "covers" were $1.50. Something like 200 people gathered to partake of the feast. It consisted of napkins and toothpicks and the banqueters were told that the money which they had paid for their tickets was already spent for some 50 barrels of flour for starving Armenians. The banquet really ended as it had begun without any eats, but a jolly and even happy crowd went to their homes when it was ended.

* * *

If the builders are economical a real good battleship can be constructed for $38,500,000. That is, if the economy reaches to withholding the ammunition. But a battleship without ammunition is not especially effective so the call is made for $5,000,000 additional gold dollars to buy ammunition. This makes battleship building rather expensive. The only way of getting off cheaply in this armament affair is to build a submarine fleet. They only cost between $4,000,000 and $5,000,000, but a chaser to chase the other fellow's submarine costs around $6,000,000, and so on with millions and even billions and our taxes mount higher and higher.

* * *

Recently there was a great game of football between teams of two great institutions of the state. The crowd was so great that it was impossible for some who desired to attend. The enthusiasm was great, and in the main the inspiration to the two institutions and the spirit of friendly rivalry engendered was without question beneficial. But one feature can hardly receive fullest commendation though it seems to be endorsed very generally. This is indicated by the big type at head of first page spread in description of the game: "Before the game betting was three to one on (———) and two to one that the score would be better than 28 points in favor of (———)."

* * *

This state is spending more per capita on education than any other in the Union, and sometimes it almost appears that it is making gambling a part of the curriculum, and not kindergarten instruction by any means. Presumably the Teddy bear winnings made by the babies at the county and state fairs may be considered the first step. We have laws against it; why ignore them?

* * *

These long evenings afford opportunity for planning the coming season's orchard planting. He who would have his pick of the nurseries and secure selected trees to his liking is placing his order this month.

* * *

The state department of agriculture reports the beginnings of consolidation of two offices, which is now being effected in some of the counties. This is bringing together the offices of horticultural commissioner and sealer of weights and measures. The office of sealer of weights and measures, by the way, is responsible for a $500 fine on a Los Angeles County poultry buyer who manipulated his scales so as to defraud the raisers from whom he was buying. One of the worst short measure frauds we have heard of was in Kings County where nearly 15,000 quart milk bottles were found to be six ounces short.

* * *

As an example of American waste the U. S. geological survey mentions the fact that in the super-power zone, that is, the great industrial region between the cities of Washington and Boston, there is a waste of coal in the production of power by those industrial establishments, which amounted in 1919 to the equivalent of 13,500,000 tons. Steps are being taken to prevent some of this great waste. We Californians look with horror upon the spirit which has permitted this great loss—meantime our own hydro-electric is going to waste every year.

* * *

The great hog and corn belt is reporting more hog cholera than at any time since 1914. It has been so swift and deadly that many hog raisers think it some new and deadly disease, but specialists insist that it is the same old trouble and urge watchfulness and immediate reporting of any outbreak.

* * *

With tax paying, Christmas and federal income tax in the offing—and occasionally a pair of shoes to buy—there is some difficulty in getting a very exuberant kick out of the many appeals which are made at this time to help reduce the suffering in this and other lands, but there is so much honest to goodness need for bread, and a little milk to go with it, that all of us should increase our own happiness at this Christmas time by buying Christmas seals, aiding in Near East Relief, the Red Cross and even a thousand and one other causes—possibly a neighbor down the road would appreciate a side of bacon or pumpkin, or even a kind word.

CALIFORNIA WINS

Gordon True, Alex. McDonald and others of the state university who have bred, selected and fed the stock which made such great winnings at Chicago have cause to be proud of their work and of the conditions which made possible the great honors for this state at the Chicago International. This is not the first time, for four years ago we proved our abilities along this same line.

Besides our livestock, some of our boys of the agricultural high school clubs entered the judging contests, and the California team, while not winning all it could wish, made sixth place in the total score in competition with 11 other states. In the ranking of individuals Wilder McCollough tied for fourth place. In the free for all judging contest in which cattle were entered by agricultural club boys California took first and third, Wilder McCollough being first and Herman Darling third. While representing California, these boys were all from the southern end of the state, and it was understood that another year the north and south would split even in number of representatives.

THE WEATHER

We sure have had a streak of weather—rain and snow and sleet in the north; drying electrical winds of great force in the south. The citrus crop has been injured in many sections, in some of the very worst instances as much as 50 per cent loss being reported. In all the citrus districts, while the direct loss in wind injured fruit may be comparatively small, there will still be much fruit put in lower grade because of the storm. Some sections reported wind velocity of 75 miles an hour. In any case, speed limits were exceeded. Some trees were uprooted and buildings injured.

CROP INSURANCE

Abnormal weather conditions have renewed discussion as to crop insurance. Occasionally the discussion has to do with the organization of mutual companies, but as a rule in California it is felt that mutual or local insurance would not be safe. In states like Iowa mutual hail and cyclone insurance has proven wonderfully successful. But hail storms and cyclones usually visit only a small section of the state, and by keeping the mutual organizations strictly within state lines the loss has been borne by the many and the few have benefited. In a California citrus crop mutual insurance concern the loss would have to be paid by practically the same people who suffered the frost damage.

Presumably the same is true in Florida. In any case, we note in the Florida Grower that insurance brokers of Philadelphia are taking risks which are spread over a great number of companies. Commenting on the situation the Florida Grower says:

"As I understand it he will write policies on individual groves or an association may take out a blanket policy on the crop of all its members. No provision is made for insuring trees, though that may come another year; it is being considered. Insurance applies only to fruit actually on the trees at time of damage and does not include injury to bloom, the policy automatically expiring on March 15. No policy goes into effect until 72 hours after it has been written. I presume this latter is to forestall applications that might be made at a time when a freeze may have been predicted by the weather bureau. Insurance will be confined to the south of the northern borders of Volusia, Marion and Citrus Counties. Rates will be on a sliding scale, water protection having an influence in the rate making. The lowest rate will be 6 per cent and from that up to 8½ per cent, the insurance agent to be the judge as to the frost danger.

"Great interest will no doubt be aroused among the growers at this announcement. Florida should feel honored that the plan is to be tried out here first. California will probably be considered another year. The plan has infinite possibilities in the safeguarding of a citrus investment and no doubt in the future mortgagees will insist that a crop be insured and when the time comes that the companies will consider tree insurance citrus property will take its place as security along with other real estate securities, stabilizing the industry, possibly making government farm loan funds more available."

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California at Chicago

By R. P. Royce

ONCE again the attention of the livestock world has been focused on California through the sensational exploits of the division of animal husbandry of the University of California at the world's greatest livestock show—the International Livestock Exposition at Chicago. For the second time the most coveted award in the whole livestock field comes to California along with other winnings that alone would be regarded as high compensation by most states—and once again California's bid for livestock supremacy is proved to be no idle claim.

Before analyzing in detail the honors won by our state institution it will be well to set up the proper background in order to appreciate in full the true significance of the accomplishment.

Twenty-one years ago the International Livestock Exposition was brought into existence to serve as the court of last resort for all livestock activities. Since that time—save in the years of 1914 and 1915 when no shows were held because of the foot and mouth epidemic—the show has attained a stature overtopping any similar event in the world, and it has come to be accepted that to win at Chicago constitutes the highest of high honors—and by common consent the supreme award is the grand champion steer or heifer.

It should be understood that all the breeds of beef cattle, sheep, swine and horses are taken care of in standard classifications, and in addition special classes for steers and heifers, wethers and barrows are provided. These classes are open to the world. There are also separate classes for fat stuff shown by agricultural colleges.

For years the show expanded and functioned mainly for the country east of the Rocky Mountains. Until 1916 no exhibitor or institution from the Pacific Coast country felt justified in measuring strength with the East, consequently no thought was ever given this coast country. It was in 1916 that Gordon H. True, head of the animal husbandry division of the California institution, conceived the notion that the time had arrived to demonstrate to the world just what might be expected of California in a livestock way. At first he didn't get much encouragement, either from the institution or the livestock fraternity. The idea seemed to be that True and his staff were overenthusiastic. Finally a way was found and a small exhibit was slipped into Chicago. Nobody paid much attention to the fact that California was entered—but when the smoke cleared away California had the grand championship and the reserve grand championship tucked away. It is probable that no single thing has done more to shove California into the limelight of the livestock world than the 1916 exploit. Since that time the institution has added additional laurels to this state.

In 1918 we had the champion Shorthorn steer along with a fair share of winnings in the sheep and swine classes. In 1919 the grand championship was barely missed but we landed the reserve together with numerous sheep and swine entries. No appearance was made in 1920.

This year, at what is said to be the greatest International of all, California won as follows:

Beef Cattle

Lula Mayflower, a blue-gray, cross bred (Shorthorn-Angus) senior yearling heifer, was first in class, champion grade, champion yearling and grand champion of the show.

California Standard, a senior pure bred Aberdeen-Angus steer calf, first in class, champion Angus and reserve champion calf of the show.

California Bystander, a junior pure bred Aberdeen-Angus calf, was first in class.

California Perfect Lad, a junior yearling cross bred (Hereford-Angus) steer, was second in the Hereford specials.

First prize grade herd.

Champion steer herd.

In the college specials California won the group of five and the championship besides winning first, second and third on steer calves.

Fat Sheep

Cross bred wether, first, champion and reserve grand champion of the show.

Southdown wether, second, third and fifth and first prize pen.

Hampshire wethers, first, second and fifth and first prize pen.

Grade yearling wethers, third in class and first prize pen.

Rambouillet wethers, third and fifth in class and second prize pen.

Shropshire wethers, second in class and fourth prize pen.

In the college classes California sheep won first and second on wether lambs, third on yearling wether, champion wether, and best five wethers.

Fat Swine

Hampshire barrow, second in class. Poland China barrow, second in class. Berkshire barrow, fifth in class. Poland China pen of three, fourth. Poland China get of sire, third. The Poland China pen of five was sixth in the college classes.

The above showing appears even more remarkable when it is known that there were entered in the show 410 head of fat steers and heifers, 499 head of fat sheep and 766 head of barrows. Beside the individual exhibitors 13 of the leading colleges in America competed and California won over 50 per cent of the prizes offered for college stock.

Out of this most recent demonstration of California's livestock possibilities, while remembering former winnings at Chicago, California livestock owners should find plenty of inspiration. Such accomplishments demonstrate most conclusively that we can produce the equal of any section in the world. Every single animal in the university's showing this year and in former years was bred and developed at the university farm under conditions in no way out of reach of the average progressive stockman.

Practically speaking, the only feeds used in developing the winners have been barley, oats, bran and alfalfa. The sheep and cattle have had some roots.

An interesting sidelight on the grand champion lies in the fact that this is the first time in history that a heifer has won top rating at Chicago. In reference to Lula Mayflower the Chicago Daily Drovers' Journal has this to say:

"William Watson, Scotch judge of grades and cross breds at the International Livestock Exposition, broke precedent when he tied the grand champion honors in the fat steer show on a heifer at the close of the contest late yesterday.

"In so doing, however, the hard working Scotchman chose an entry which for her wonderful compactness, depth of flesh and quality was feared by her rivals from the time she was uncovered in her class. This heifer was the Shorthorn-Angus senior yearling, Lula Mayflower, which came to the front when she headed her class of 16 entries.

"When the heifer went into the contest for champion by ages, she vanquished her most formidable rival, Larchmont Stamp, a pure bred Shorthorn shown by Charles and Walter Denby of Carlinville, Illinois, as Mr. Watson beckoned her the winner.

"Her next and last contest came when she met the champion over all under year steer, a pure bred Hereford, Dauntler, shown by Jimmy Price of Onalaska, Wisconsin, veteran of many ring battles. For some moments the crowd studied tensely the Scotchman and the pair of steers, hardly any one feeling sure of which would win, so well matched they seemed. Then Mr. Watson indicated the blue-gray from the coast and the black cattle men went wild and nearly smothered the heifer and the reserve champion as well.

"'She's a grand one. She is right in her prime. And there's not a Hereford steer in all England like that one,' he said, nodding to the reserve.

"The grand champion heifer made her first bow to the public in the arena here this week, according to Prof. Gordon H. True of the university farm at Davis, where she was bred and fed. The heifer had run with the beef cattle herd all her life, getting the same ration—corn, silage, alfalfa hay and grass. This last August she was given some extra grain, mostly barley and bran, with a little oats and molasses. She was carried to a finish on this ration.

"The dam of Lula Mayflower is a pure bred Angus cow, which is also the dam of this year's champion pure bred Angus steer, California Standard, which proves again that 'blood will tell.'"

Credit for this splendid showing goes to Professor Gordon H. True of the animal husbandry division, the individual members of his staff and in a very large measure to Alex. McDonald, master fitter, who has fed and developed all of the cattle; George Philips Shepard of the university flocks and Ralph Dunham, herdsman of the swine division.

California Winners at Portland

University of California Dairy Products Judging Team winning first place in judging of all dairy products at Western Dairy Products Show, Portland, Oregon. Top row: H. J. van der Merwe, J. J. McNamara (alternate). Bottom row: Prof. G. D. Turnbow, coach; H. E. Paxton, M. A. Salis.

CALIFORNIA AGAIN LONG WINNER

California boys have made a record in judging at two great internationals. The Chicago International is touched upon elsewhere, and below is the record of California boys representing the University of California judging team, made at the International at Portland. The university announcement says: "The team made a total of 13,890 out of a possible 15,000 points, leading the nearest team, Oregon agricultural college, by 159 points. Washington State College and the University of Idaho also entered teams which placed third and fourth in the order named. H. J. van der Merwe was individual high man in all products, with H. E. Paxton a close second, both of the California team. Prof. G. D. Turnbow of the dairy industry division, University of California, coached this year's team as well as the team last fall, which won first place."

The winners are:

Milk

Wm. Waxmuth, Oregon; W. D. McClain, Idaho; A. B. Widby, Oregon.

Butter

W. T. Putnam, Washington; H. E. Paxton, California; H. J. van der Merwe, California.

Cheese

H. J. van der Merwe, H. E. Paxton, H. A. Sallis, California.

Contest

In this class, where greatest honor was obtained, it will be noted that the two highest were from the California team. H. J. van der Merwe, H. E. Paxton. Wm. Waxmuth of Oregon was third.

Agricultural News Notes of the Pacific Coast

Northern California

Effort is being made to organize a farm bureau in Lassen County.

The apple packing season in Sonoma County is practically over.

Miss Edna Black has been appointed home demonstrator in Tehama County.

A one day school in farm management will be held at Placerville, January 26, 1922.

Delegates from the National Grange Annual at Portland have been guests of the Santa Rosa Grange.

A special effort is now being made to organize home departments in the Butte County farm bureau.

Growing sentiment in favor of formation of a farm bureau exchange is reported from Shasta County.

Packing and curing of winter corn fed pork has begun at the Farmers' Exchange packing plant at El Dorado.

A two weeks' short course for beekeepers is now being given at Berkeley. The course ends December 17.

As soon as the wet weather sets in Horticultural Commissioner Stabler of Sutter County will start campaign against squirrels.

Many test plantings of purple vetch are being made by farmers of Butte County. They are also planning to try out hubam clover.

December meetings of local farm bureaus in Glenn County: Codora, 12; Orland, 14; Plaza, 16; Willows, 19; Capay, 21; Grapevine, 28.

Black grapes in the Lodi district of San Joaquin County returned to growers an average for the season of $125 per ton, Tokay strippings $72.50.

The Sutter Basin Company claims the best average rice crop per acre upon a big acreage, a little better than 35 sacks to the acre on 1506 acres.

Early Navels from northern district are running heavily to small sizes, ranging from 200's to 324's. Lack of early fall rains is held responsible.

The Pacific Coast Hereford Breeders' Association will hold its annual consignment sale at the university farm at Davis, the latter part of February.

The chamber of commerce of Anderson, Shasta County, has established a free farm employment bureau chiefly for the purpose of checking employment of Japanese.

Marston Campbell has been appointed branch manager of the Santa Rosa office and warehouse of the Sperry Flour Company. Mr. Campbell is an authority on poultry feeds.

Stockmen who have federal grazing permits in Lassen national forest will meet at Oroville some time in January to organize an association to more efficiently care for their collective interests.

The Elmira Agricultural Club of Solano County at its recent annual meeting elected Helen Thompson president, Don Hansen vice-president, Morris Daily secretary and Dorothy Schuman reporter.

A Gravenstein apple contest has been started in the Sebastopol district of Sonoma County to continue for five seasons to discover methods of securing maximum yield and to locate trees which may be used for propagating better yielding orchards.

Central California

Exeter, Tulare County, reports Emperor shipping season ended.

Don Pedro dam has now been completed to a height of 30 feet above stream bed.

Fig Brownies, the latest product of the California Peach and Fig Growers, has met instant popularity.

Visalia reports a pear tree known to be over 73 years of age still bearing commercially profitable crops.

Bankers of the San Joaquin Valley met in semi-annual convention at Lindsay, Tulare County, last week.

A new casein plant has been opened at Gustine, Merced County. This will afford increased market for skimmilk.

Paving has been completed on the Porterville-Springville highway and it will be ready for traffic December 24.

Peanut growers in the Shafter district of Kern County are threshing. They have formed a local marketing association.

Both the Sun-Maid Growers and the California Peach and Fig Growers are cutting down force employed in packing houses.

The "Land of Kerman," Fresno County, claims one-tenth of the season's total estimated raisin tonnage of 120,000 tons.

Poultrymen of Ceres, Stanislaus County, brought home a gratifying number of prizes from the Oakland poultry show.

Practically no damage to oranges from frost in Tulare County. Heavy carload shipments of Navels are going forward daily.

Vine pruning demonstrations will be given by Prof. Bioletti in Kern County at Arvin and Weed Patch, December 16; Shafter and Delano, 17.

Reedley, Fresno County, citizens held a meeting last week to discuss the proposed water and power initiative measure for the state.

During December and January Farm Adviser J. P. Benson of Fresno County will conduct vine and tree pruning demonstrations in different sections.

The Malaga plant of the California Peach and Fig Growers this season has handled over 400 tons of raisins, 450 tons of peaches and nearly 100 tons of figs.

Governor Stephens opened Valley Citrus Fair at Visalia today. Madera, Fresno, Kern, Kings and Tulare are uniting in effort to make the show a huge success.

Deputy County Horticultural Commissioner Androus of Kern is making inspection trip and a census of fruit trees and vines of the eastern portion of the county.

Tulare County will not this year mix lime-sulphur for spray and sell to growers at cost. This because of state law requiring the county as a seller of poisons to purchase state license.

The sixth annual fig institute will be held at Fresno, January 13 and 14. The dried fig contest held in connection with it will be judged by G. P. Rixford, Lester Eastin and Prof. Ralph E. Smith.

Proposal to enlarge Sequoia national park and change the name to Roosevelt national park will be brought up for hearing before the house public lands committee at Washington on December 13.

Southern California

Heavy lettuce shipments are now going out.

Cow Tester Soden of the Orange County Cow Testing Association has resigned his position.

The organization of a beet growers' department in the Orange County farm bureau is being considered by the directors.

Orange County is just cleaning up on Valencias. Several carloads of Navels are being shipped for the holiday market.

The state board of health has asked indictments against a number of Japanese for heavy spraying of celery with chemical solutions.

There is proposal that San Bernardino empty its sewage into Warm Creek to be diverted into irrigation conduits for Riverside.

Cotton growers of Blythe, Riverside County, have sent representatives to Coachella Valley to investigate possibilities of securing Acala seed.

Lettuce growers of the Imperial Valley have adopted by unanimous vote the U. S. tentative grades for head lettuce for the coming shipping season.

Members of the Santa Ana Walnut Growers' Association have received final payment on the first pool of the association. One of the features of the 1921 selling campaign is the quick cleanup.

After investigation of charges that Mexican children are discriminated against in schools of Calipatria, Imperial County, State Superintendent Wood officially denies that they have any justification.

An ordinance regulating dairies and sale of milk in Riverside County is being considered by the supervisors. This is the ordinance prepared by the state dairy bureau and already passed by several counties.

The Redlands-Highlands Fruit Exchange last year handled 2,660 carloads of citrus fruit, selling expense averaging less than 7 cents per box. L. M. Winston was chosen president and H. W. Seager manager.

Schools in farm accounting were held in Riverside County, December 5-9, at points where sufficient interest was manifested in them. They were given under university extension management, cooperating with the office of the farm adviser.

Cotton growers of the Arvin district of Kern County have sent 150 bales of long staple Egyptian cotton to mills at Prague, Czecho-Slovakia. On this shipment growers are advanced 14 cents per pound through the war finance board. The cotton was carried by trucks to San Pedro harbor.

Instruction in the computation of citrus production costs will be offered Orange County citrus growers when R. V. Wright, farm account specialist of the University of California, opens his one day class at 9:30 a. m., December 15, in the biology building of the Fullerton Union high school.

Secretary W. W. Van Pelt of the Southern California Fair Association announces a meeting of Southern California fair secretaries in Riverside at noon on December 14. There will be nine fairs of the Southland represented. The object of the meeting is to arrange dates of next year's fairs so that there will be no conflicts.

The Coast and General

The Idaho state land board has reduced grazing fees on state lands.

Membership in the United States Grain Growers has passed the 20,000 mark.

Farmers in the Salt River Valley of Arizona are plowing for wheat and seeding.

Alfalfa in the Salt River Valley of Arizona has been checked by the first heavy frosts.

Cattle growers of Grant County, Arizona, are shipping feeders to Colorado and California.

About half the olive crop of Arizona has been picked. The yield is larger than usual.

Mexico is sending a delegation to the water and power conference at Riverside, December 8-10.

Wenatchee, Washington, has shipped out over 8000 carloads of apples and has 2000 more to go.

Arizona beekepeers are selling light amber alfalfa and cotton honey at 5½ cents f.o.b.; light amber mesquite, 6¾ cents.

Continued dry weather in Northern Arizona is showing a diminished flow of springs and small streams through pasture land.

Conditions in the Fort Apache Indian reservation are reported as favorable, cattle good, range good, water sufficient.

Cotton and corn in the Salt River and Yuma Valleys of Arizona were killed by frost last week and slight damage was done to olives.

The Washington Jersey Cattle Club is carrying on an enthusiastic statewide membership campaign. "Over the top by January 1" is the slogan.

Farmers in the Hastings section of Florida who have been unable to sell sugar cane to factories are planning to grind for themselves and sell the syrup.

Shipping is over in the Pinto section of New Mexico, but large numbers of sheep and cattle have been shipped recently from Holbrook, Arizona, and vicinity.

The Oregon State Beekeepers' Association will hold a "beekeepers' roundup" at Pendleton, January 26 and 27. Disease control, inspection and cooperative marketing are under discussion.

The department of agriculture and development of Mexico is furthering the distribution of modern agricultural implements among the farmers of the country by means of commercial agencies established throughout the republic.

Eighty carloads of navel oranges were shipped from the Salt River Valley of Arizona up to the last of November, just about completing the navel harvest for the year; only about half the grapefruit has thus far been picked.

The United States bureau of markets reports: "Spray poisoning has proved a real menace in the northwestern states. Thousands of colonies were killed by feeding on alfalfa blooms in sprayed orchards, and many other colonies rendered partially unproductive. Bees not badly poisoned recuperated as a result of the late honey flow. Colonies in favorable unpoisoned district gave better crops."

Potato Growers Meet

By Ernest Braunton

AT THE annual fall session of the potato growers' department of the Los Angeles farm bureau, T. H. Lambert presiding, the opening address was made by W. S. Rosecrans, president of the bureau. His subject was "The American Farmer Is Waking Up," a strong endorsement of and plea for cooperation in all lines.

He asked all present to join the bureau, and that all could do so the annual dues were kept at the lowest figure, so far as known, of any county bureau in the country. The largest membership enjoyed was 2,000—"we should have 4,000." The legislative committee examined all bills put before the last state legislature that affected agriculture, 35 in number. Of these 20 were condemned and worked against. Not one of them passed. Of the 15 approved, 12 passed and became laws. A program was outlined for active work for the coming year, to include water conservation, flood control, land drainage, rural sanitation, and marketing. Farm bureaus are organized in 39 counties in California.

B. C. Bougher of the farm adviser's office outlined the field experiment program for the coming year. A better cover crop is needed than melilotus, for it does not grow well in cold weather. Purple vetch and Hubam will be given thorough trial. Berseem clover from the river Nile gives great promise. It thrives at a temperature of 28 degrees Fahrenheit, grows two crops of hay and then a crop for turning under. Such a cropper in this state would make it a universally used cover at once. Sulphur as a fertilizer and for scab control, the use of gypsum, fish meal and sulphate of ammonia for potatoes will be studied in plats with proper check control. The White Rose is at present the best variety, but some new varieties of unusual promise will be given trial. Several plats in various sectons will be planted to seed potatoes from Temecula and Yucaipa to test their reputed superiority. Fall crop experiments will be conducted and the yield and treatment of each plat recorded. At present our fall crop is but 50 to 60 per cent of what it should be. A potato show probably will be held some time during the year. The cost of potatoes per sack and per acre will be closely studied and determined. An attempt will be made to establish boys' and girls' potato clubs in several potato districts in the county.

Officers for 1922

A nominating committee was appointed to bring in a report submitting names for the official corps for 1922. The report as read was unanimously adopted and the following declared elected: President, E. D. McSweeny, El Monte; vice-president, W. V. Stahl, Zelzah. Executive committee: W. V. Stahl; H. L. Boyer, Van Nuys; M. H. Lambert, Owensmouth; E. D. McSweeny; J. H. Aulenbrock, Arcadia; Wm. Houghton, Norwalk; J. C. Craig, Owensmouth; T. H. Lambert, El Monte.

A resolution was adopted requesting the bureau of plant industry of the U. S. D. A. to detail special investigation of problems of Southern California growers, especially that of securing satisfactory fall stand.

In view of the seriousness of the nematode situation as it affects all field and truck crop growing, the president of the Los Angeles County farm bureau was requested to appoint a committee to undertake an educational campaign through publicity, meetings and demonstrations to acquaint the growers of Los Angeles and adjacent counties with the available information concerning the nematode and its damaging effects, this committee to meet at least once every two months and carry out a systematic campaign of education, also that this committee get in touch with presidents of the farm bureaus of the eight southern counties notifying them of this campaign and seeking their support.

A third resolution was passed suggesting the enlargement of the division of olericulture in the college of agriculture of the University of California to provide for more scientific and practical investigation work along potato lines.

Farm Adviser Hodgson next spoke on the necessity for special potato investigation work. He said potato growing was intensive farming which brought high returns per acre. Potatoes alone made Aroostook County, Maine, the third in agricultural wealth in the United States. Scientific investigation is much needed; our knowledge of the crop needs is crude and limited. For instance, in fertilization we do not know that potash is needed for potatoes, or what it does, yet we apply it. There are 200 varieties of potatoes grown in this country; the number should be materially reduced. Los Angeles County grows on a commercial scale 102 different crops. Some good agricultural states grow but one-fourth that number. We should have federal aid but we will not get it unless we ask for it. "The squeaky axle gets the grease." The potato department of the Los Angeles County farm bureau should have 300 members.

The afternoon program began with a very interesting, necessarily somewhat technical, talk on the "blackheart" of potatoes, by Dr. J. P. Bennett of the University of California. He said this trouble is a strange one, hardly a disease. It is not bacterial nor fungous nor due to mechanical injury, is not produced in the field, does not of itself spread or communicate. One potato may have it, the next may never, though favorable conditions should cause it in all potatoes alike. It is due primarily to a lack of oxygen in the interior of the potato when respiration is great, due to high temperature. On the other hand, while the conditions stated bring it about, the blackheart does not become manifest until oxygen does reach the interior. The trouble is one to be guarded against in storage, and the determining factors are oxygen supply, temperature and time of exposure to the necessary temperature. There is no danger in well ventilated storage except when above 86 degrees Fahrenheit. It may occur from freezing point up to 115 degrees, and a most elaborate set of tables was presented to show under what combinations of conditions blackheart would come. In storage a temperature of 41 gave greatest freedom from the trouble. The potatoes snown by Dr. Bennett, gathered from various sections of the state and all blackhearted, were subjected to 104 degrees for two days in an electric oven.

George P. Clements of the Los Angeles Chamber of Commerce next gave a talk, teeming with statistics, on the relation of the manufacturing interests to the disposal of the cull crop of potatoes. B. C. Bougher of the farm adviser's staff briefly described the nematodes and passed about specimens of the infested potatoes.

T. H. Lambert, El Monte, presented the best methods of growing a fall crop, from which we quote the following:

"I began growing fall potatoes about 20 years ago and watched them very closely from the time they were planted until they were harvested, as I had no other way to learn their needs. The following statements are based on that experience.

"There seem to be a good many ways and ideas of planting fall potatoes here in Southern California. While only about 25 per cent of the people get a good stand, it seems rather discouraging to grow fall potatoes, but I believe that it is really unnecessary to have a poor stand. I have found by experience that you can always get from 75 to 90 per cent stand in the fall, the same as you can in the spring. Of course there are a lot of things that are necessary to do to insure these stands. In the first place, we find it very much easier to get a stand on sandy soil than on the heavier soil. This is due to the sandy soil holding moisture better and lying close to the potato so as to keep the air away from the seed. On the heavier land there should be more precaution taken to get the land well pulverized and in a good state of cultivation; in other words, a first class seed bed, and the seed should be planted a little deeper in the heavier soil, but do not forget that in either kind of soil you must have plenty of moisture. I would say the soil should be wet not less than two feet deep, and more is better.

"In the spring it seems to be natural for potatoes to grow. They will even grow on top of the ground. Now in our fall crop let us create, as nearly as possible, the same conditions that we have in the spring. To do this we must plant our spring crop that we expect to save for fall seed very early, by the middle of February, and these potatoes will be ready to harvest by the first of June. Dig these as carefully as possible about the time the vines are turning yellow. Pile them up some place in the shade in bulk, not to exceed three feet in depth. Be sure not to bruise them. Cover them over with hay about 18 inches deep. It is unnecessary to do anything else until planting time, which is from the middle of July to the 10th of August.

"These potatoes should be cut in not less than two ounce pieces and planted just as soon as they are cut; in other words, the same day. If you should have a few sacks cut that have been left over at night, pile them together in as small a pile as possible and cover them with wet sacks. The reason is that if you cut your potatoes a day or two ahead in warm weather there seems to be a dried coat of starch which forms over the cut surface. When this piece is planted, before any moisture can go into it, this starch will have to decay, usually causing the piece to rot, whereas if the potato is planted while it is still moist on the cut surface the moisture from the soil immediately goes into it and will cause much quicker germination. This is one of the main reasons why you should have your soil very wet. If the soil has as much or more moisture than the potato, the moisture will go into the potato instead of the moisture going out of the potato into the soil. In my opinion this is what happens when green seed is planted in land that is not wet enough—the soil draws the moisture out of the potato, causing decay. These potatoes should be planted from three and a half to four and a half inches in depth after smoothing off the ridge to the surface.

"To plant these potatoes in the middle of February and have them come up it will be necessary for you to have seed that was planted as early as the 15th of July the summer before. Do not use seed potatoes that are planted the middle of August or after and then dig them in December or January and expect to plant them the middle of February and have them come up. They will not be ready to plant, really, until the first of April.

"We hear a good deal of complaint of spring crops in regard to the curly leaf. This curly leaf is due to what we have just talked about in planting the late fall grown crop for an early crop in the spring. If you plant in February or the first of March, if the spring happens to be backward and cold, the seed, not being old enough and out of the ground long enough, is not ready to germinate—what you try to do is to force germination. It is nothing more nor less than a premature germination, growing a weak, frail vine which is in most cases crinkly. We have, of course, a few other curly tops, due to inferior seed stock or what we call 'damping off' just before the sprout is out of the ground. Then another weak sprout starts out from this same sprout just below where it damped off. Ninety per cent of these will be curly tops. I have tried these same late grown seeds planted the first of May, and there would be no sign of curly top in the field."

Need for By-Products Plant

Dr. Geo. P. Clements of the Los Angeles chamber of commerce showed the necessity for saving the wastes through a by-products plant which would manufacture potato flour, starch, dextrine, alcohol, etc. He said in part:

The 1920 planting in California was 95,000 acres, 13,015,000 bushels, or three per cent of the United States crop. Actual shipments were 9,766 cars, or 4,883,000 bushels, showing a wastage of 8,132,000 bushels to California alone. Of 390,000,000 bushels in 1919 only 40 per cent reached the home (Hoover). In 1918 Los Angeles County only saved one-third of its crop; less than one-half, or 1,896 cars, were dug.

Our normal consumption is 4.50 bushels per capita. California consumes less potatoes than the rest of the United States due to our wonderful range of vegetable production, yet we consume about 12,000,000 bushels, and much of this comes from other states.

Our wastage may be divided under three heads: Field wastage is one-third in California, one-fifth in the United States; shipping and storage waste is one-fifth; culinary waste is two-fifths, according to Dr. Wiley. In all it amounts to from one-third to three-fifths of the entire crop, varying according to seasons. Our field waste in California, without the aid of the eel-worm, is enormous, some years terrific, and always senseless. No other country would tolerate these wastes.

An ordinance or ruling forbidding the sale of nematode potatoes will add to this waste unless we make some provision to care for the by-products. The by-products of the potato are chips, dehydrated potato, potato flour, starch, and dextrine. A by-product manufactory must be big enough to handle all these and other vegetables, besides an all year run, in order to pay.

What we are wasting may be summed up thus:

One ton of potatoes makes 425 pounds flour; 20,000 tons means 15,500,000 pounds at 8½ cents; total, $2,015,000. Or, one ton of potatoes makes 250 pounds starch; 20,000 tons means 5,000,000 pounds, at 5½ cents, a total of $275,000. Again, one ton of potatoes makes 250 pounds dextrine; or the 20,000 tons means 5,000,000 pounds, at 10 cents, which totals $500,000. One more: one ton of potatoes makes 16 gallons of alcohol; 20,000 tons means 320,000 gallons, which at $2 equals $640,000. California is losing this. The farmer would have saved four-fifths of his freight and the cost of sacks also by delivering in bulk at mill or factory. This would have kept a two unit mill consuming 3,000 pounds of potatoes and turning out 600 pounds of flour 1,250 days, or three and a half years. Such a mill would cost for machinery alone $35,000 and the cost of manufacturing 600 pounds of flour $9.50, about 1½ cents the pound.

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(Continued on Page 605.)

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The Year Ahead

By T. C. Tucker, Manager California Almond Growers Exchange

CALIFORNIA almond growers face 1922 with two major battles in the perspective.

The first battle, common heritage of all farmes' cooperative organizations, is that never-ending struggle against those who would wreck every agricultural cooperative by hook or crook for their own private, speculative profits, pretending in the doing of it that they are the farmers' friends.

The second is of specific concern to the almond growing industry in the state, the fight for a 5 and 15 cent tariff schedule, duties which will give our growers a chance to compete against the peasant growers of Southern Europe. It seems probable now that we will reach the crux of our tariff struggle about next February, according to advices from Washington which state that the senate finance committee hopes to have a permanent tariff bill framed by that time.

In making their tariff fight our growers feel that they have served the cause of all farmes' cooperative associations. The intelligent farmer or orchardist has only to ask himself, "Who else would make a tariff fight for him?"

Yet it is common knowledge among officers of California cooperative organizations that farmers in all branches of organized agriculture are prone to listen to the siren offers of speculators and in many cases to desert their fellow producers for the sake of a few dollars. It seems human nature to forget the sorrows of the past and, therefore, farmer nature to forget the days when the speculator named the price of the grower's product, many times below cost. Farmers' cooperative associations broke the speculators' power to name prices, but that power can only remain broken so long as the farmer pays unfaltering allegiance to his cooperative by refusing to sell outside his pool, no matter how attractive the inducement.

There seem to be no ends to which the speculator, bent on regaining his lost power, will not go. If his "cold cash" and offer of higher price does not induce the farmer to "sell out" his clan, our speculator does not hesitate to summon calumny to his aid. He is quite willing to whisper scandal, hoping to arouse distrust in his victim's mind, distrust of the particular cooperative to which the farmer belongs, distrust of its business methods and its officers.

The speculator knows the value of rumor. He knows the span of her wings and the speed with which she travels and how savage she becomes in flight. He knows, too, that it is hard to capture her and bring her home to roost. So he whispers "you know—they say." And rumor takes flight to blacken the names of honest men.

It is a wise farmer indeed who turns a deaf ear to that sort of thing. The brand of man who mixes scandal with his business is the wrong kind of a man to deal with. He ought to be anathema to every member of an agricultural cooperative association.

Now as to tariff, our almond growers are muddling along the best they can, confident that congress will sense the justness of their plea and the imperative necessity of adequate revision of the Fordney bill to a 5 and 15 basis if almond growing in California is to thrive. Our growers have presented their facts and figures showing that the schedule they ask will give them only a fighting chance in our own American markets against the foreign grower. We can only wait the issue. Meantime public opinion throughout the state must continue to make itself felt.

Recently through the efforts of Senator Johnson a group of 16 western senators agreed to make a fight for the 5 and 15 schedule before the senate finance committee and on the floor of the senate if necessary. These senators constitute a powerful group in the senate. All of them, save Senators Johnson and Shortridge, represent states where the almond tree is unknown. It is a significant thing that the plain fairness of the California almond growers' plea enlisted the unqualified support of these senators.

Improvement of Plants

Realizing the need for improvement and higher average production in sugar cane Hawaiian planters made appeal to Mr. Shamel of the U. S. department of agriculture to investigate as to the various types of producing canes in the islands. Mr. Shamel spent several months in the Hawaiian sugar fields. He made an address before the Social Science Association of Honolulu and its members consented to publication of the address by the experiment station of the American Planters' Association. This address, "Improvement of Plants Through Bud Selection," has to do with plant improvement, definition of terms, origin of varieties from bud mutations, elimination of undesirable strains, selection of superior parent plants, progeny tests, and other phases of plant improvement. In addition to the most complete text there are over 40 full page plates.

From the text we quote:

"The overshadowing interest amongst scientists in the study of the phenomenon of sexual variations in plants and the behavior of seedlings grown from these variations during the past century has resulted in the partial neglect of the equally interesting and important field of the investigation of bud mutations and the characteristics of plants originating from them.

"As the writer sees it, the scientific problems in this connection include a study of the extent and frequency of bad mutations in all of the agricultural varieties, an investigation of the fundamental causes of the phenomenon of bud mutation, and the development of improved methods of propagation. This investigational work should precede and lay the foundation for the commercial work. While this arrangement may apparently delay the utilization of bud selection, it may, as a matter of fact, hasten the time when economic results can be obtained. The scientific studies of bad mutations, their origin and development, will probably result in the discovery of simplified methods of bud selection and insure protection from disappointments due to operations founded upon defective plans based upon incomplete knowledge leading to premature and oftentimes erroneous conclusions. In some instances it may be found feasible to carry on the investigational and commercial work simultaneously. The writer believes that such is the case in the work for the improvement of sugar cane through bud selection. As the result of an experience covering more than 20 years in both the investigational and commercial work of plant breeding the writer wishes to emphasize the necessity for scientific studies in this connection in order to discover the underlying principles of bud mutation and bud selection as a means for establishing this work in every instance upon a sound and lasting foundation."

SPRAY THE GRAPES

Of special interest to grape growers is Farmers Bulletin 1220 which may be had by request to Division of Publications, U. S. D. A., Washington, D. C. The bulletin is of 76 pages and filled with illustrations and text upon "Insect and Fungous Enemies of the Grape." Its preface says:

"The present paper treats of important insect and fungous enemies of the grape in the United States, and gives for each the methods of control at present known to be most effective. There is also given at the close of the bulletin a schedule of applications of combined insecticides and fungicides which, if carried out according to directions, will insure a high degree of protection from the various insect and fungous troubles of the grape. Commercial vineyardists, for the most part, follow some schedule of applications, though in many instances sufficient attention is not given to thor-

oughness or timeliness in treatments.

"In the case of grapes grown principally for home use, or on a small commercial scale, there is each year a large loss in the aggregate from failure of owners properly to spray their vines. The spray schedule should be especially useful to these indivduals, and if carefully followed will materially increase the quantity of fruit obtained.

"Vineyards, however, should not be sprayed so near ripening time of fruit that there will be left on the berries at harvest a noticeable amount of spray residue. Thorough applications early in the season as indicated in the schedule of treatment will obviate the necessity of later treatments with consequent discoloration of the fruit with the spray mixture.

FRUIT PRODUCTS CONVENTION IS SUCCESS

The recent Canners and Fruit Products Manufacturers convention held at the University of California was a great success, according to W. V. Cruess, associate professor of fruit products and in charge of the fruit products laboratory.

E. W. Moorhead of the California Fig Growers Association gave an interesting report on the development of new fig products. The kadota fig is used in their canning and preserving and makes an excellent product.

C. H. McCharles, assistant director of the pure food and drug laboratory of California, spoke upon the methods of determining solids in tomato products. He stated that several published tables giving the relation between tomato solids and the specific gravity are in need of revision.

The spoiling of canned foods was quite thoroughly discussed by Dr. F. K. Meyer, Dr. I. C. Hall of the University of California, and Dr. E. C. Dickson of Stanford University. The need of further work on bacillus botulinus was emphasized by all the speakers.

E. L. Overholser, assistant professor of pomology, described several varieties of pears which would fit into the canning season in California and supplement the canning of Bartlett pears. Among these he mentioned the Klapp favorite, an early ripener, and the Bosc, a late ripener.

PLANT DISEASE AND PEST CONTROL

"Plant Disease and Pest Control" is the title of a new publication just issued by the University of California. It is the work of W. T. Horne and E. O. Essig. It gives in brief form descriptions of pests and diseases most commonly found attacking and injuring plants of California and contains suggestions for their control. Formulae for preparations used to protect plants against fungi and insects are given with brief instructions for use. Technical material has been omitted and only brief descriptions and directions given. This publication, No. 277, will be sent without charge upon request to the University of California, College of Agriculture, Berkeley, California.

WALNUT GROWING IN CALIFORNIA

"Walnut Growing in California" is the title of a new bulletin, No. 332, just issued by the University of California agricultural experiment station. This bulletin is intended to answer many of the general inquiries of the walnut growers of California. It may be considered a handbook for the walnut grower.

The climatic, soil and water requirements are treated in detail and the commercial varieties of walnuts described and illustrated. There is discussion of the choice of root stocks and nursery trees, together with detailed directions for starting the young walnut orchard.

General directions are given for the control of such insect and disease pests as codling moth, aphis, red spider, melaxuma and winter injury. Directions are also given for the harvesting and curing of the crop, as well as the packing house requirements for the successful marketing of walnuts.

An estimate is given of the cost of production and the income which may be derived from walnuts in California. This bulletin may be obtained by request to College of Agriculture, Berkeley, California.

Interplants

By James G. Forsyth

TO prospective growers of orchard trees late in attaining full bearing a few pertinent facts on interplanted trees may be helpful. Much depends on the locality and available markets when deciding what kind and variety of fruits to use as interplants. If fruit trees are chosen they must have two qualifications — abundant, early bearing and small size. Size is always a factor but need not be so strongly emphasized when the permanent trees are set at 50 or 60 feet, as is sometimes the case with figs and other large trees.

Marketing the crop is fully as important as producing it. The fruit selected for the interplant must be one which will find an easy market. Where the grower is close enough to large city markets the logical fruit is one early ripening and suitable for shipping fresh. For example, any of the commercial plums or peaches. On the other hand, for more remote situations a type of fruit should be selected which is less perishable and may be canned or dried. The establishment of canneries in the outlying orchard districts provides an excellent market for the fruits which are suitable for interplanting. Occasionally a planting is made with both the permanent and temporary trees of the same variety. This arrangement is valuable when the trees are of a small sized and early bearing variety.

With judicious handling an interplanted orchard will not suffer in comparison with one not interplanted, but there is one very important factor which will indicate the advisability of interplanting, namely, the human element. The plan, when the orchard is first set out, is to remove the interplanted trees as fast as they show signs of crowding the permanent trees. But when the trees are nearing the age at which they should be pulled out it seems very difficult. Until the trees have irreparably injured each other in the struggle for existence the grower is prone to let himself believe that the trees will stand "just one more year" without great injury, and, of course, it must be admitted that they are bringing in additional revenue.

If the interplants are not removed at first signs of crowding the time will be surprisingly short before the monetary returns are no greater than the orchard would be producing if it had not been interplanted. While the actual tonnage of fruit may still be larger the fruit of the interplanted orchard will have deteriorated in both size and quality. Small, inferior fruit finds a less ready market and will add nothing to the reputation of a grower who possesses a name for producing the best.

To sum it up, the advantage of early returns offered by interplanting, valuable as it may be to a striving fruit grower, is to a greater or less degree, depending on the wisdom of the management, offset by the danger of lasting injury to the trees by being left in the ground until the interplants have dwarfed and sapped the vitality of the permanent trees, which are the reasons for the existence of the orchard.

A safer and better plan, at least for the owner who isn't actually on the ground, is intercropping with annual crops: Grain, beans, garden truck, etc., or alfalfa. Figures prepared by farm management experts prove conclusively that the costs of bringing an orchard into bearing (meaning leveling land, setting out trees, cultivation, pruning, and spraying) may be easily borne by the returns from crops grown between the trees.

There are many eloquent examples of California orchards stunted or ruined from inexpert handling of an interplant system, and it is in the hope that fewer such mistakes will occur that this article is written.

Interplanting is a good practice if the grower realizes that no matter how it tears his heart to drag out beautiful, healthy interplant trees, when the time has come their removal is the only possible way of making a success of the permanent orchard.

WALNUT GROWERS INSTITUTE ANNOUNCED

At a recent meeting of the executive committee of the walnut growers department of the Los Angeles County farm bureau plans were laid for the fifth annual walnut growers institute which will be held sometime in January. The committee which is to have this activity in charge is composed of E. G. Hotchkiss of Covina, J. S. Killian of El Monte, W. H. Howell of Walnut, Lester Cole of Whittier and Alfred Brant of Owensmouth and representatives to be appointed by the farm bureau presidents from San Bernardino, Ventura and Santa Barbara counties.

EARLY FRUIT TREES AS WINDBREAKS

In the Antelope Valley pear growing districts orchardists are planting early apricots, peaches or crabapples along roadsides and fence lines six or eight feet apart. Such early varieties, leafing out before the pears, are good windbreaks and do not unduly rob the soil.

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750	18	5 9	4 11	580	30.75	12,000	285	13 10½	11 11	5,370	258.75
1,000	24	6 6	4 11	655	35.25	15,000	357	15 6	11 11	6,080	303.75
1,500	36	7 1	5 11	830	45.00	20,000	476	17 10	11 11	7,280	352.50
2,000	48	8 1½	5 11	975	52.50	25,000	593	18 4	13 11	8,510	412.50
2,500	60	8 4	6 11	1,145	60.75	30,000	714	20 2½	13 11	9,800	465.00
3,000	71	9 1½	6 11	1,270	69.00	40,000	952	23 0	13 11	11,300	557.25
3,000	71	8 5	7 11	1,290	69.00	50,000	1190	24 0	15 11	13,400	675.00
4,000	95	9 10½	7 11	1,555	87.00	60,000	1428	26 3	15 11	15,100	742.50
4,000	95	9 2½	8 11	1,580	87.00	70,000	1666	28 4	15 11	16,700	843.75
5,000	119	10 11	7 11	1,745	98.25	80,000	1904	30 3	15 11	18,000	922.50
5,000	119	10 3½	8 11	1,790	98.25	90,000	2142	30 2	17 11	19,800	1005.00
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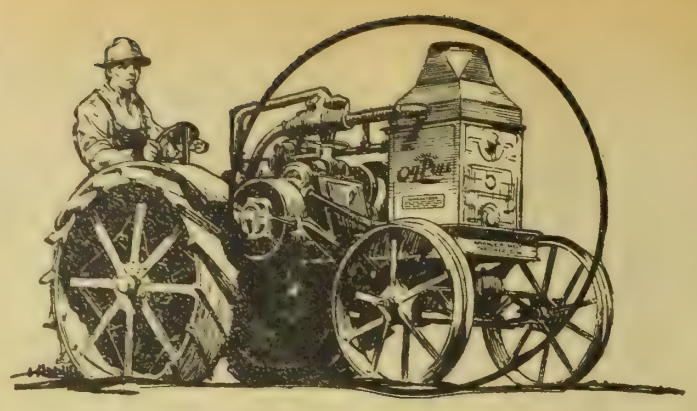

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This Month in the Ornamental Garden

Southern California

By Ernest Braunton

THE "dying year" should witness the living garden; the "closing year," the opening of the active graden season. Our early rains did not continue as promised and gardening operations have suffered thereby, so that with many gardens it means a new start. The first operation in all gardens, old or new, should be soil stirring, and in general the older the garden the more it is needed. Such work is never carried out too thoroughly or too deeply; it cannot be done. Nor can fertilizer be too well mixed wtih the soil.

Air is needed in the soil at all seasons and at all stages of plant growth. A heavily compacted soil is usually a "sour" or acid soil. At all depths within the root zone it needs stirring. Dig it up deeply and allow it to weather before smoothing it down. The writer believes, in the interest of economy, that a soil should never be turned up unless some fertilizer is turned down. And none should be turned down that is not soon stirred again to insure more complete incorporation with the soil, so that each operation should have a double purpose—aeration and fertilization.

Investigation discloses a lighter planting of bulbs than in November of last year, but it is now a prime time to put them in the soil. Good bulbs direct from Holland are in ample supply in local markets and the quality is generally high. Even those left in the soil from last year are unusually tardy in appearance and suggest late or December planting a part of nature's program. It is safe to plant any of the hardy class now, and if dahlias and other tubers are in the way, take them up and store in a cool, dry, dark place until late spring.

This is a time for rose planting, and the best sort to plant are dormant bare roots. These are at their best in December. Budded roses are preferable in the weaker sorts but own root plants are equally good, or better, in the strong growing varieties. No special pruning should be done now but it is best, at all times, to take out spindly or weak canes or abnormal growths, or even to thin. We must abandon the old "pruning season" ideas brought from more severe climes. The rose is an evergreen, more or less active throughout the year. Treat it as such and train it whenever training is needed. Even deciduous fruit trees are summer pruned. As a rule roses need most attention during the rainy season, particularly at the beginning and ending of the annual precipitation.

Seed sowing of all hardy annuals and perennials may be indulged in or the plants may be set out. Sweet peas sown now will give an early spring crop of flowers. Pansies are best put in now, the younger the plants the better results will be. If in bloom when reset pinch off all, even the buds, and keep off all that show for a week. The plants need all their vigor to establish a root system in their new home. Many purchase old plants, in full flower, wadded into hard balls of soil and expect them to continue flowering as before. They will never be so good again. Pansies need a loose rich soil. A wad of heavy, sticky black soil about the roots much impairs their vigor. Get small unflowered plants if possible and transplant with a little loose soil clinging to roots. Old chrysanthemum plants may be taken up and set aside in any old place. Even if left on top of soil they will not deteriorate unless they get too dry. During January they may be revived to obtain cuttings for next season's plants. Do not fertilize lawns yet; the heavy rains are to come and nearly all the nitrogen of fertilizers will be washed away as surface runoff or carried down in light soils below the grass root zone.

County Agent Jungerman of Stanislaus in his yearly report emphasizes dangerous height of water table and increasing alkali and urges lining of irrigation canals and care in use of irrigation water.

Southern Arizona

By M. E. Bemis

IT IS a pretty safe statement that there is no expenditure of time or money—or both—that adds so much in proportion to the amount expended as does the growing of flowers. Not every farm home can be beautified because there are undoubtedly some that cannot afford the time or small amount of money, but it is fortunate that such homes are few. Many, very many, farm homes, and city homes too, for that matter, could be made far more attractive at such a small cost as to be negligible, if the owners or tenants would but make the effort.

December plantings of flowers include the following: African daisy, calendula, candytuft, carnation, centaurea, clarkia, coropsis, daisy, Globe amaranth, gaillardia, hollyhock, larkspur, mignonette, nicotiana, nigella, pansy, petunia, phlox, poppy, scabiosa, stock, sweet pea.

African daisy, known also as Cape marigold, has come into much deserved popularity in Arizona. It grows about one foot high and is well adapted to sunny locations. The flowers are orange to deep yellow. Calendula or pot marigold grows about the same height as African daisy, with yellow flowers both single and double. Candytuft, the old fashioned favorite, is splendid for edging beds. There are several varieties, some rich in perfume, and a variety of colors. Carnations require a rich soil. Flowers from seed are not the equal usually of flowers from propagated plants. It is better to transplant once or twice. Centaurea is the "alias" of the bachelors button and is also known as cornflower. These are very hardy and may be grown with so little trouble that the wonder is that the waysides are not sown thickly. The blossoms are blue, white, or rose colored.

Clarkia is a plant that is native to the Far West and therefore is very much at home here. This is one of the taller growing plants like the bachelors button. It blooms freely with white, salmon or scarlet flowers. Coreopsis, or calliopsis, makes good border or bedding plant. The flowers are single, borne on long stems. The principal color is yellow, varying to a rich maroon and sometimes brown. Plants from seed sown now should have some protection, as they are tenderer than most of the flowers mentioned above. The double daisy and the Shasta daisy, in addition to the African daisy mentioned before, are hardy and may be planted for early spring flowers. Globe amaranth is one of the everlasting flowers, useful for bedding plants.

Gaillardias grow to a height of about two feet, have beautiful double blossoms of orange and crimson, that usually bloom through the summer here. Hollyhocks, the old fashioned flowers that grandmother loved, bloom here the season following planting. Larkspurs are grown easily and make a good background for some of the shorter, lower growing plants. Mignonette grows 6 to 12 inches high and is extremely hardy. Sown now it will blossom in the spring. Nicotiana grows three feet high, with slender tubular flowers. Nigella grows about one foot high, has fine foliage and peculiar flowers of blue and white. Pansies should for best results have been planted earlier, but may still be planted and with care will produce a profusion of flowers. Petunias should be sown on an even surface and the seed barely covered. The flowers come early, the colors ranging from white through rose to almost purple. Phlox are hardy and easily grown. The blossoms are rich in reds with some approaching buff and lilac. Poppies from the California to the tall growing double poppy are so easily grown that the wonder is that there are not acres where there are instead single plants. Scabiosa, sometimes called "mourning bride" and "pin cushion flower," is old fashioned, half hardy and easily grown. The flowers are borne on long stems and vary from white through crimson and blue to almost black. The plants grow about two and a half feet high. Stocks may be had in a considerable variety. They are popular in southern Arizona. They

may be had in mixed colors or pink, crimson and white. Sweet peas are being grown more and more each year. A succession of blossoms may be had almost continuously from November to July by planting the Christmas flowering early and the late varieties in succession—the late plantings in shaded places.

The flower garden requires rich soil and careful preparation. Most seeds should be planted very carefully and covered with very little earth, and that preferably fine sand or mulch. It seems hardly necessary to say that the seed bed should be made fine and well pulverized.

EAST PAYS HOMAGE TO WESTERN STANDARDIZATION!

The live interest of farsighted men in the standardization of fruits and vegetables is adequately covered in a short, pithy, article by Prof. W. J. Wright, published in an October number of the National Stockman and Farmer. Referring to the growing competition between eastern and western fruit growers, Prof. Wright says:

"The reported action of the interstate commerce commission in reducing the freight rates on apples from the Northwest has met with some objection from eastern growers. Generally speaking such objection looks like pretty small business. If western growers can raise fruit on their high priced land, ship it 4,000 miles and drive the eastern grower off the market, then something is wrong. Either the western apple is better or the packing and selling methods of the western growers are better.

"We have little sympathy for the eastern grower who complains of western competition. When we have learned to care for our fruit a little better, and above all when we have learned to grade and pack it better, so that he who buys it can tell exactly what he is getting instead of having to expect inferior, half rotten fruit in the center of the barrel, then we will have no occasion to complain of the fickle public we now accuse of buying by eye only.

"The facts are we shall always have western fruit in our eastern markets. But if we can regain the confidence of buyers in the barrel pack we need not fear serious competition from orchards on the Pacific Coast, even though freight rates are still farther reduced."

SELLING HONEY

By G. W. Bercaw

At this time of the year the uppermost question confronting beekeepers is the disposing of the season's crop. In California alone the crop to be marketed aggregates approximately 4,000,000 pounds, exact figures not yet available, this state ranking first in production, Texas coming next with nearly the same amount, though honey is produced in more or less quantity in every state in the Union. Climatic conditions have some influence in the demand for honey; in colder climates more honey is consumed than in warm climates, and our heaviest demand comes during the winter season, 50 per cent more being used and handled during colder weather.

Advertise strictly pure, edible honey, then supply it when the demand comes. Put it up in packages adapted to trade you are serving. Put up only the best, of light color, good body, good weight, it is not really necessary for it to be "water white," but a light orange color will sell just as well and as readily. Either glass or tin containers should be used, glass for small quantities, tin for larger amounts is a good rule. Do not mix comb honey in glass jars for sale. The size of the containers will depend upon the trade served. Do not advertise "strained" honey, and as far as possible discourage the use of the word "strained"; call it extracted honey.

POTATO GROWERS MEET

(Continued from Page 601.)

or buy into one. A complete by-products plant which can take care of other agricultural wastes just as appalling as that of potatoes is what you need.

Of starch factories in the United States there are 26 in Maine, 6 in Minnesota, 4 in Illinois, 4 in Iowa, 3 in Indiana, 2 in Michigan, 2 in New Jersey, 1 each in Connecticut, Florida, Kentucky, Massachusetts, Mississippi, Nebraska, New York, Ohio, and Oregon. In 1914 we had 85 starch factories—23,540,000 pounds; in 1920 we have 59 starch factories — 16,477,000 pounds.

There is no producer's waste through the by-products factory; all peelings and the little ones go to starch. Thus three-fifths of the potato crop is saved to the grower; also the general public from shipping and storage waste and culinary waste. Have you any idea of this latter? It is estimated at one-third of the actual year's crop.

And again, if No. 1 potatoes are eelworm proof, all the danger is eliminated. The by-products plant does for the nematode.

FIGHT REPEAL OF EXCESS PROFITS TAX

The National Board of Farm Organizations is making an exceptionally strong fight against the efforts to repeal the excess profits tax. At a meeting of directors recently held in Washington a committee was appointed to go immediately to the senate with an appeal that the senate should not repeal the excess profits tax, reduce the surtaxes or by other means, such as "by the proposed sales tax, shift the burdens of taxation from those best able to pay to those least able to pay." A basis for future action has been properly laid in case the present congress shall decide upon the unwise step of shifting the burdens of taxation from quarters that can afford to pay it to those that cannot.

The board also adopted the plan of taking steps to counteract the harmful effects of a certain kind of publicity which has been stating that the congressional departmental reorganization committee would most likely recommend limiting the jurisdiction of the department of agriculture solely to production matters and might also either suggest the abolition of the federal trade commission or else place it within the jurisdiction of some cabinet officer where its independence and effectiveness would be destroyed.

APHYCUS IN TEHAMA OLIVE GROVES

The excellent results that followed the introduction of the South African parasite, Aphycus Lounsburyi, into the black scale infested citrus groves of Southern California, reducing the annual fumigation expense from $46,000 to $25,000 in a single season, has suggested the liberation of some 10,000 live specimens in the olive orchards of Tehama County. It is hoped they will have as beneficial results on the black scale on olives.

SPRAY NOW FOR PEACH BLIGHT

Special attention is being called to the necessity of spraying at this season for the control of peach blight which frequently destroys many twigs and buds in peach and apricot orchards. In the spring this fungus also works on the leaves and the fruit of the apricot, rendering the latter undesirable for the market. It is of value to note that the only practical chance of controlling this disease, which may not show up much until next spring, is to spray the trees thoroughly within the next two weeks before the disease enters the tissue of the twigs. Winter strength of Bordeaux mixture (copper sulphate and lime) is recommended for this spray.

Members of the San Diego County farm bureau are discussing opening public markets in San Diego and other centers; also retail meat markets.

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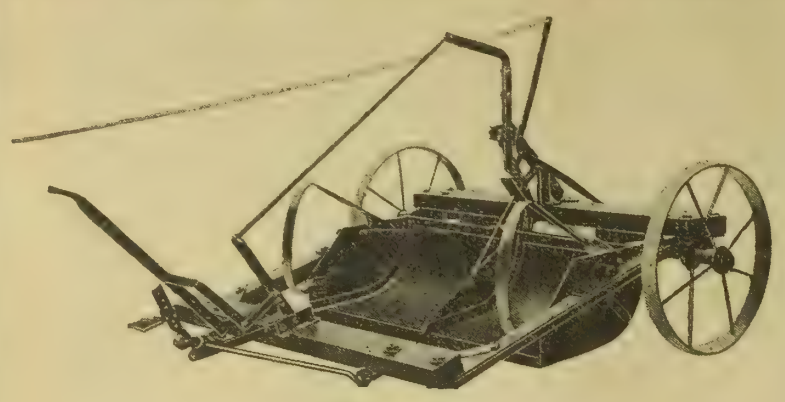

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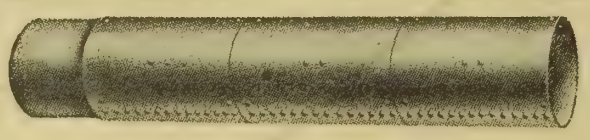

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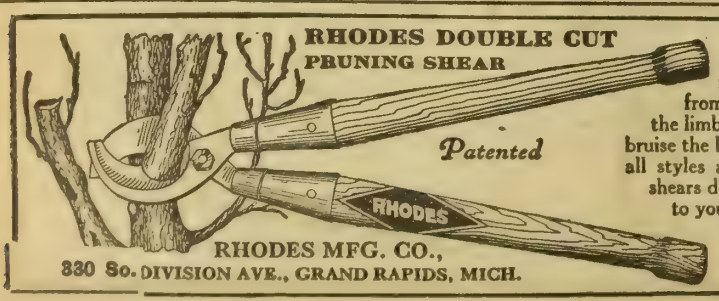

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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Bitter Milk

We have a cow which has had second calf, been fresh three months. For the past three weeks the milk, though very sweet and good while fresh, is very bitter when about 12 hours old and has an awful taste at 24 hours. Had been feeding alfalfa hay and dairy feed, but since the milk got so bitter have fed different combinations of oat hay, bean straw and alfalfa, and bran in place of the dairy feed. With first calf and first two months of second had no sign of this bitter milk. Also has an indescribable rancid after taste even at 12 hours. Corral, vessels, milk closet all are clean. Can you give cause and remedy?—Subscriber, Santa Paula.

This trouble is common at this period of the year. It is probably not the fault of the cow or the feed but may be corrected by thorough sterilization of all utensils with which the milk comes in contact. First, thoroughly wash with warm soap suds, being sure to reach every portion of the utensil outside and in. Then boil lime water in the utensil for a short time. When setting the milk protect so far as possible from dust or any other contamination.

Foul Milk

What is wrong with our cow? The milk smells foul and gets worse the longer it stands. The cow seems to be in fine condition, looks well and eats well. We have been feeding Suremilk, bean straw and pumpkins. The milk is rich in fat and the cream is even stronger than the milk. Since the milk is sometimes good when first milked and gets bad on standing, we thought that it might be the containers. But we take special pains to sterilize them thoroughly each time and yet the milk gets no better. We do not expect the cow to be fresh for two months yet.—Subscriber, Carpinteria.

See "Bitter Milk" above and in addition note temperature at which milk is kept. It is often thought that milk can hardly be kept at too low a temperature, but the development of healthful, acid-forming bacteria must be encouraged, or other bacteria proceed to grow and flourish, and ropy or foul smelling or other milk conditions are created which make for anything but an edible product. To prevent this some go so far as to boil or hold milk at a temperature of 140 degrees for, say, 20 minutes, which destroys the bacteria which revel in exceptionally low temperature. The best temperature for development of acid forming bacteria is around 59 degrees. Try the thermometer on the milk and in addition fill all utensils with boiling lime water and hold at boiling point for several minutes.

Pruning Young Trees

We have some fruit trees, peaches, figs, apricots and plums, one and two years old, and we would like to know best time to prune and if there is any special way of doing it.—Subscriber, San Gabriel.

Several volumes would not be sufficient to give all the details of the various systems of pruning. The one more commonly followed today is the long pruning system taught by Dr. Whitten of the state university. This has been touched upon in several articles in former Cultivators. Some of the recent articles are in the issues of January 22, June 11, and November 19, 1921.

Pumpkins and Squash for Feed

We have a supply of pumpkins and crookneck squash and would like to know if they could be fed to milk cows. —Subscriber, Lathrop.

Pumpkins are valuable additions to the ration for the milk cow, although their nutrient content is low. Regarding crookneck squash we have no analysis but imagine its value would be somewhat less than that of pumpkins. However, would surely utilize such a feed.

Selling Bulk Olives

Is it lawful to sell pickled olives in bulk (kegs)? I have been told it wasn't necessary to cook them unless they were canned.—Subscriber, Corning.

The ruling of the state board of health has been that only olives which have been subjected to a temperature of 240 degrees for 40 minutes may be sold in California. There are, however, tons of ordinary cured olives offered and sold both by producers and grocers. The packers are, however, calling upon the board of health to either rescind the ruling or enforce it and confiscate the olives now being offered which have never been subjected to more than ordinary temperature, or, in other words, the olive as ordinarily cured on the farm in the bath of lye followed by rinsing and later by the regular brine. If the board does take action then confiscation of the olives and possibly imposing of fines may result. This, of course, is providing the ruling of the board will "stick." So far as known there has never been a case of poisoning from eating olives as ordinarily cured and left exposed to the air. The botulinus germ is destroyed by the atmosphere though the board of health has stated, "It is possible that the germ might exist in olives cured and left in open barrels."

Spraying Trees

We have an orchard of 100 trees three years old, all different kinds of fruit, also different kinds of grape plants two and three years old. Can all the trees be sprayed with lime sulphur 1-10 strength when dormant, including cherry trees, orange trees and English walnuts? The trees were not diseased last year, except that there was a little curl leaf on the peach tree and lice on the plum leaves. Should the grapes be sprayed too when dormant this winter? They never had any disease. I intend to spray with lime-sulphur 1-10 or 1-15 strength before December 15 on peach trees to prevent blight, although they had no blight last year.—Subscriber, Lincoln.

The procedure outlined is doubtless desirable excepting as to spraying the orange tree with the lime-sulphur of the strength mentioned. Lime-sulphur on oranges or other evergreen trees or deciduous trees in leaf should not be of a strength greater than 1-33. After the leaves have dropped from deciduous trees the 1-10, or even the 1-9, strength is desirable. The peach trees should be sprayed as suggested before December 15. Then to prevent the curl another spray with the lime-sulphur 1-10, or possibly preferably Bordeaux 5-5-50, this just before buds swell in spring.

Home Storage for Apples

Mrs. Joe Scheiber of Lincoln, Placer County, sends the following in answer to former inquiry in the Cultivator as to method of keeping apples through the winter:

Take fresh sound apples, not bruised nor wormy. Put them in layers in large boxes so they will not touch each other, putting clean, dry sand in box and around the apples. Set in cool, dry place in cellar. I have kept apples in this way from October to the next July.

Unsterilized Olives

Under existing laws will I be allowed to give to the Christmas cheer of the Camp Kearny boys a quantity of olives fresh from the pickle, cold lye method of processing?—Interested, Fallbrook.

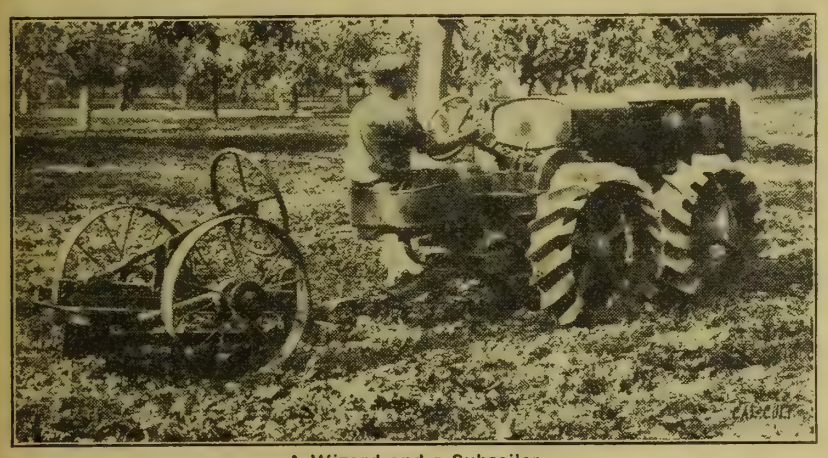
We don't know. At one time the health board made a ruling that every olive offered for sale should be sterilized at 240 degrees for 40 minutes. This regulation is not being enforced, for peddlers are continually selling from house to house and many groceries are offering to the trade. So far as known there has never been a case of poisoning from these home processed olives kept in barrels in the open and never at any other temperature than that of the water in which the lye or salt was dissolved. The ruling has worked great injustice to olive growers who have feared to process while it was standing. Appeal is being made to the health board to

rescind or enforce. In matter of sterilization, however, we may add that the steam pressure cooker or sterilizer for home canning has been made so cheap and practical that if it proves to be necessary growers can do their own sterilizing. We believe these may be had from $20 to $50, which are very satisfactory.

Carolina Strawberries

Is the Carolina a large strawberry? Is it medium mild or is it tart? How late does it produce, in other words, is it an all season berry? Will it thrive on other than sandy soil? Is it a strong grower? Is a strawberry vine that is a single cropper, bringing three or four baskets at once, profitable? How many baskets is a good average vine supposed to produce in a season?—Subscriber, Newman.

The Carolina is a large berry, mild in flavor, is a long season cropper, appears to thrive in all soils as well as other standard varieties. A variety that is a "single cropper" would be valued according to season of cropping. Ordinarily it would not be profitable but if producing at a season when berries are scarce it should be. We have no data as to performance of individual vines. In the Carolinas the record of the berry of that name on good soil is about 5,000 quarts an acre. This would be about 7,500 boxes such as are used in California.



A Wizard and a Subsoiler
Wizard tractor pulling Killefer subsoiler 21 inches in walnut orchard of Chas. S. Sanderson, Whittier.

Vegetables Under Lath

Can vegetables be successfully raised in and under lath houses where the nights are cold and hardly five months in the year frostless? What rules and design govern construction of lath houses in Southern California?—Subscriber, San Jacinto.

Such vegetables as grow in the open fields of the Los Angeles section during the colder months would grow under conditions such as you describe, but as they need all available sunshine for best development and lath houses are expensive, we would not advise such procedure if produce is to be marketed. No special rules are observed in construction of lath houses except the laths are generally placed their width, or 1½ inches apart. A few space them but an inch apart. Protection against frost is greater, but sunshine is reduced. A firm at Sierra Madre has a double roof, four inches between the two, but it is an experiment and designed for Kentia palms, which thrive best in partial shade. Various shapes of roofs have been tried but the more common and most economic of labor and material is the flat or level one.

Feed for Milk Cow

Can you please tell me if there is any truth in the idea that pumpkin seeds are bad for milk cows and chickens, drying up the former and swelling the crops of the latter? Does barley hay tend to dry up milk cows? Which would be the better additional feed for milk cows fed alfalfa hay and running on alfalfa pasturage, cotton seed cake or bran? — Subscriber, Arizona.

Pumpkin seeds are valuable. At least Henry and Morrison say: "The tradition among farmers that pumpkin seeds increase the kidney excretions, tend to dry up cows, and hence should be removed before feeding, has no good foundation. The seeds contain much nutriment and should not be wasted. Pigs relish them, and they act as a vermifuge, freeing the animals of worms and putting the digestive organs in good condition. As the seeds are rich in protein and oil, eating an excess may cause digestive disturbance. Squashes and melons, especially pie melons, or citrons, are sometimes fed to stock." Barley hay may be considered an excellent addition to the ration of the milk cow, but it must be borne in mind that it is deficient in protein and should be supplemented by alfalfa, bran, cottonseed meal or other protein containing feed. The authority above quoted says: "Barley is fed to dairy cows to a considerable extent in Europe and has a reputation for producing milk and butter of excellent quality. The Danes regard ground barley and oats as one of the best concentrate mixtures for dairy cows." The protein content in the barley hay is similar to that in the grain. The barley feed with the pumpkins would give sufficient protein though the succulent pumpkins would made a valuable addition to a ration largely composed of barley. If the alfalfa pasture is rich enough it would doubtless supply sufficient protein. A cow fed alfalfa or one on good alfalfa pasture should not need either cottonseed meal or bran.

Weaning Calf

Kindly advise me how to wean a calf three months old and how to feed it.—Subscriber, Bridgeville.

If calf is receiving skim milk and hay reduce the amount of milk gradually until no milk is fed, and substitute the following grain mixture, feeding two pounds to three pounds daily to a well grown out three months old calf: 3 parts corn meal, 3 parts rolled barley, 3 parts wheat bran, 1 part linseed meal. Keep a good quality of alfalfa hay before calf at all times. If the calf is to be used as a breeding animal it will pay to carry it up to the sixth month on at least a half ration of milk.—R. A. C.

Feed for Milk Production

I will appreciate some suggestions as a dairyman. Why are my cows decreasing in their production of both milk and butterfat? Am feeding 30 pounds dry alfalfa, 4 pounds dried beet pulp, 2 pounds bran, 2 pounds ground barley, 1 pound coconut meal. I mix the concentrates, adding about a pound of salt for the entire 18 cows, then enough water to thoroughly moisten. This feed I soak in redwood box.—Subscriber, Artesia.

Your ration is fairly well balanced for a dairy cow. Many other causes may enter into your decreasing production. You do not state the length of time your cows have been milking, whether they have pasture or other succulent feed, or under what conditions they are housed. We would not "soak" the entire grain mixture. The beet pulp may be "soaked" and the grain mixture added at feeding time. Your cows are eating rather more than the average amount of dry alfalfa hay, 20 pounds daily per cow being about the average. Change your ration by feeding three pounds of bran instead of two and add one pound of cottonseed meal. Try feeding one pound of your concentrates to about four pounds of milk produced. If possible, feed succulent feed in some form; green alfalfa, corn fodder or silage are best.—R. A. C.

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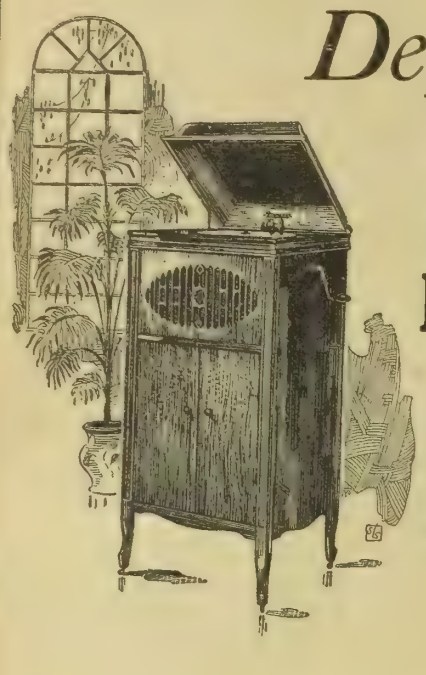

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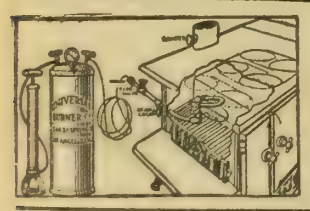

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Your appreciation of the California Cultivator can be shown best by writing to and buying from Cultivator advertisers.

Household Department

The Secret

God sometimes shuts the door and shuts us in,
That He may speak, perchance through grief or pain,
And softly, heart to heart, above the din
May tell some precious thought to us again.

God sometimes shuts the door and keeps us still
That so our feverish haste or deep unrest
Beneath His gentle touch may quiet till
He whispers what our weary hearts love best.

God sometimes shuts the door, and though shut in,
If 'tis His hand shall we not wait and see?
If worry lies without, and toil and sin,
God's Word may wait within for you and me.—Author Unknown.

EASILY MADE CHRISTMAS CANDIES

By Annette Squire

ARE you going to make Christmas candies this year? For the delight of giving something "a little bit different," for added gaiety on the Christmas table, or for the kiddies' stomachs' sake? Certainly home made candy is safer for the children, and you can make the delicious, wholesome gelatin candies to look as gay as any store candy, and shining fudge and puffy marshmallows to look as appetizing. The gelatin candies are the most easily made, requiring no skill, and have the advantage of keeping fresh longer. You may make them even two weeks before Christmas. The outside will harden, but the center will remain soft. They are really not at their best until they are several days old. If you have saved any ordinary candy boxes, cover the candy maker's name with a Christmas card, pasted on, and you have a Christmas box. For the Christmas tree or for favors for the table the farmer's wife can make good looking bags from butter paper and tie them like a Christmas package with red or green baby ribbon, wool or twine. Fold the sheet and stitch it into a bag on the sewing machine—if you use red thread they'll be gayer—fill only two-thirds full, turn over the top flat and tie with your gay colors.

Ordinary cake coloring can be used to tint the pastille candies, or the tablet of coloring that comes with the gelatin. If you have no green coloring, but have spinach, crush out some juice with a potato masher and use that. Children like especially the Raisin-Nut-Jels.

Raisin-Nut-Jels

Soften two tablespoons gelatin in one-half cup cold water and add juice of one lemon, juice and grated rind of one orange. Heat one cup sugar in one-half cup water, and when it boils add the gelatin and juices. Boil ten minutes, add cup raisins and boil ten minutes more, stirring. Take from the fire and add one cup nut meats and pour into a shallow greased pan; square, if you have a square pan. Stand over night, cut in squares and roll in powdered sugar.

Apricot-Jels

Make like the Raisin-Nut-Jels, only substitute for the raisins ground dried apricots. Use or omit the nuts.

Pastilles

For these cook your syrup for the three kinds all together, then pour in three bowls. For the syrup use three tablespoons gelatin soaked for five minutes in three-fourths cup cold water. Dissolve this with one cup boiling water, add three cups sugar and boil 15 minutes. Pour in three bowls. To one add grated rind of one orange and three tablespoons juice. To the second add three tablespoons lemon juice and pink or lavender coloring. To the third add green color and peppermint flavor. Pour an inch deep in shallow pans which have been dipped in cold water. Next morning cut in squares and roll in powdered sugar. If the candy does not leave the pan well, put under the pan a dish cloth wrung out of hot water.

These candies are effective topping a cold dessert or pressed into the cake icing for decoration.

Angel Marshmallows

Put one tablespoon gelatin to soak in four tablespoons cold water. Boil one cup sugar and one-half cup water till it spins a thread when tipped from a spoon. Take from fire, add gelatin, cool a little; and then beat fast with a good double wheel egg beater till the candy is thick and creamy. If your beating is slow the delicate sponginess is lost and the candy will be tough. When thick and creamy add one teaspoon vanilla, pinch of salt, and pour to depth of one inch into buttered pans. Stand over night, cut in cubes with knife dipped in powdered sugar, and roll in powdered sugar. These are plain marshmallows. To make angel marshmallows sprinkle with coconut and ground walnuts before setting away for the night and roll in coconut or ground nuts when you cut the cubes.

Cocoa Fudge (without syrup)

To make good fudge you need only to know when to take it off the fire and how long to beat it before pouring into the buttered pan. When your fudge has boiled four minutes, begin to test it; put a quarter of a spoonful in a cup of cold water, try to pick it up in a ball, and if it will roll about in your fingers and keep pliable like putty yet hold together in "a soft ball" it is ready to take off the fire. Now tip your kettle and beat it until it is cooled enough to begin to feel heavier to your spoon and to look grainy. It is at this moment that you must quickly add the walnuts or raisins and hurriedly pour out into the buttered pan. If you are too slow in pouring it out at the proper moment of thickening and graining your candy will be as good to the taste perhaps, but you will have lost the chance for the smooth, shining surface of fudge that is just right.

Boil together two cups sugar, two-thirds cup milk, two heaping teaspoons cocoa and butter the size of a walnut. Just before pouring into the buttered pan, add one cup chopped walnuts or one-half cup walnuts and one-half cup raisins. In measuring your butter, make it the size of a small walnut, for too much butter can spoil fudge. Cut in squares.

Cocoa Fudge (with syrup)

Boil together four cups sugar, two cups syrup, one cup milk, four level tablespoons butter and two tablespoons cocoa, until a little will form a soft ball in cold water. Remove from the fire and beat until it is turning like heavy cream and beginning to grain. Add two cups broken walnuts and pour quickly into buttered pans. As soon as cool enough cut in squares.

Peanut Butter Fudge

Boil together one-half cup peanut-butter, one-half cup milk, two and one-half cups sugar and one-half of a level tablespoon butter. When it forms a soft ball beat till creamy and turning heavy, and pour in buttered pans. As soon as cool enough cut in squares.

Raisin and Peanut Fudge

Two cups sugar, one cup milk, two heaping tablespoons peanut butter. Cook and beat as for any fudge, and add one cup seedless raisins just before pouring into the buttered pan.

Old-Fashioned Butterscotch

Boil without stirring until it hardens when dropped in cold water 2 cups sugar, 2 tablespoons water and butter the size of an egg. Pour into shallow buttered pan and cut in squares.

HOUSEHOLD QUERIES

Almond Paste

In further answer to request for directions for making almond paste at home we have the following from T. C. Tucker, manager of the California Almond Growers' Exchange:

"We do not have available a recipe for making almond paste in small quantities. Almond paste is made commercially by formulas that are considered more or less secret. In any event almond paste can be purchased in small tins at a much lower price than a consumer could afford to make the home-made article. Finely ground almonds will keep indefinitely, but

almond paste is not ground almonds alone, but the nuts are blanched, then pulverized, sugar is added and a certain amount of flavoring either with bitter almonds or apricot kernels."

Head Cheese and Liver Sausage

Please print in the household department recipe for head cheese and liver sausage.—Subscriber, Santa Rosa.

The head is generally used for making head cheese, but odds and ends also can be used. The head should be shaved clean, the snout skinned and nostrils cut off just in front of the eyes. Cut out the eyes and the ear drums. The fattest part of the head is generally used for lard. When the head is cleaned soak it in water for some time to extract the blood and dirt. After the head is thoroughly cleaned cover it with water and boil until the meat separates from the bones. Tongues and hearts may be cooked with the head. When this is thoroughly cooked take out the meat, saving the liquor for future use. Chop the meat up finely. Season with 1½ pounds salt, 3 ounces black pepper, 4 ounces allspice, and 4 ounces ground cloves, together with 2 gallons of the liquor for every 50 pounds of meat. This should all be mixed thoroughly so that proper seasoning is secured. If casings can be obtained, stuff the mixture into large beef casings. A hog stomach, after it is thoroughly cleaned, can be used. If the meat is stuffed into casings it should be boiled again in the same liquor in which the meat was previously boiled. The meat in the casings should be boiled until it floats on the top, then placed in cold water for a short time. Store it away in a clean, cool place on a shelf or table. Place a board over the meat in the casings with a weight on top in order to hold the shape and to prevent the moisture from collecting in one spot. If there are no casings available in which to stuff the meat it can be kept in shallow pans.

Liver Sausage

All the odds and ends resulting from cutting up the hog carcass can be used in making liver sausage. The head, if used, should be cleaned as previously described under "head cheese." The jowl may be cut off and salted down. The head, liver cut into slices, and some beef or veal, if any is at hand, should all be put into a kettle and boiled. The skin cut from the fat can also be boiled with this meat. The skin will be cooked before the meat, so it should be put into a cloth sack and removed when thoroughly cooked. Livers also cook in a very short time, and should be removed. The meat should cook until it falls from the bones. All the meat should be ground, using the small grinder plate. Add 1½ pounds salt, 3 ounces sweet marjoram, 1 ounce allspice, 1 ounce black pepper, and about 1 gallon soup (the broth the meat was cooked in). Garlic or onions can be added if desired. This recipe is for every 40 pounds of meat. The seasoning should be worked into the meat. This finished product can be put into jars covered with paraffin or stuffed into beef rounds. When stuffed into casings it should be cooked in the same water the meat was cooked in until the sausage floats. Then place in cold water until the sausage is thoroughly cooled.

Apple Stain

Please tell me how to remove the stain caused from the juice of raw apples in white lawn goods.—Subscriber, Riverdale.

Stretch stained material over deep bowl or pan, holding in place by string or elastic band around rim of vessel, and pour boiling water upon it from teakettle held at height of three or four feet so the water strikes stain with force. Continue, alternating with gentle rubbing if lawn is not too delicate, until stain disappears. Frequently if slight discoloration remains it will be bleached by hanging wet material in strong sunshine.

Canning Chickens

Would like to get a recipe for canning chickens, so am asking the Cultivator household department for help. —Subscriber, Winnemucca, Nevada.

Boil in slightly salted water till meat is tender. Strip meat from bones and pack into jars wtih a highly seasonde tomato or other sauce. The addition of the sauce not only flavors the meat but facilitates penetration of heat. Several ripe olives added to each jar will improve the flavor. Sterilize in pressure cooker at 250 degrees, 1 pound cans, 55 minutes; 2 pound cans, 65 minutes. If pressure cooker is not available sterilize in boiling water in ordinary hot water sterilizer (wash boiler, large kettle) for at least one hour three times at intervals of 24 hours. First day place filled jars in boiler with covers loosely fastened. After one hour's boiling seal tight. On following day repeat boiling without loosening tops. Repeat third day and invert jars while cooling. Time of heating should be counted after water is boiling vigorously.

We give also directions for roasted chicken and jellied chicken canned in pressure cooker. If ordinary wash boiler sterilizer is used follow directions given above.

Roasted Chicken — Draw, singe, clean and truss the chickens. Clean the giblets, place in kettle, cover with cold water, bring to a boil and simmer while chickens are roasting. For each chicken put two thin slices of bacon and place chicken thereon; if to be canned, in halves split lengthwise, or in quarters (breasts), cut before roasting. Cover the bottom of pans with water in which salt has been dissolved (½ pound for 50 pounds of chicken), and put pans in oven and cook one to one and a half hours; when done, take chickens and bacon out of pan and make sauce. To each pint of grease add 1 pound butter and 1 pint flour, mix smoothly and add 2 gallons water in which giblets were cooked, put on fire and stir constantly until it boils; chop the giblets fine and mix them in the gravy with ¾ pound salt, 1½ ounces ground white pepper and enough caramel to make a brown color. Place chicken in can and fill can one-third full of the sauce; process at 250 degrees: ¼ chicken size, 55 minutes; ½ chicken size, 65 minutes; whole chicken size, 80 minutes.

Chicken Jelly—50 pounds chicken, 1½ pounds onions, chopped, ½ ounce bay leaves, ½ ounce whole mace, 1½ pounds salt, 6 ounces gelatine. Draw and clean the chickens, cut each in 11 pieces, place in kettle and cover with meat jelly, adding the salt and onions and spices in a bag; bring to a boil and simmer until tender; remove the chicken and carefully skin and bone; add the gelatine which has been soaked in cold water for an hour, to the liquor in the kettle and stir until dissolved, then strain; if the liquid is not clear, clarify with white of egg. Place the chicken in cans, cover with the liquid. Process at 250 degrees: 1 pound cans, 55 minutes; 2 pound cans, 65 minutes.

THE USEFUL LEMON

A teaspoon of lemon juice added to boiling rice or sago will make the kernels whiter and give them a more delicate flavor.

Tough meat is made less tough by adding a teaspoon of lemon juice to the water in which the meat is boiled.

Use slices of lemon to garnish fish and game of all descriptions.

Lemon juice with olive oil instead of vinegar is preferred by many for salad dressings.

After the pulp has been removed the skins of lemons may be used as receptacles for serving salads or lemon rice.

Lemonade should be made the national drink and is greatly improved when the well beaten white of an egg is added.

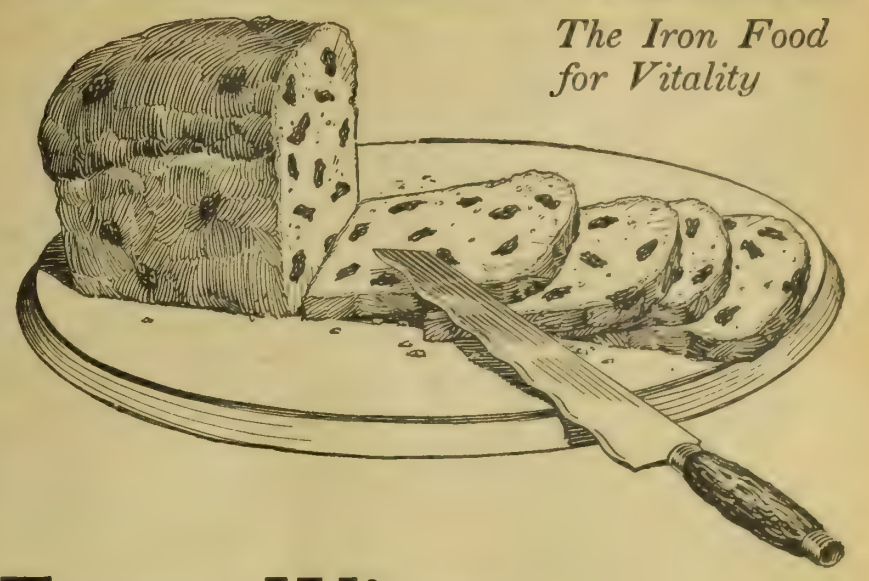
Iced tea is improved in flavor and made less constipating by the use of lemons.

After the juice has been extracted, the rind dipped in salt will clean tarnished brass.

Salt and lemon juice will remove rust, ink or fruit stains from white goods.

If you are not able to give as many or as pretty gifts this year as last, do not let that cast a shadow over you. Just add a bit more of love to it.

Christmas! The day we all go home —in thought and spirit, if it is impossible to actually go in the flesh.



The Iron Food for Vitality

Farm Wives Save Two Ways

TRY this for the next two weeks:—Let every other loaf of bread you bake be *raisin* bread. Note how your men take to raisin bread. Note that they eat *more* bread and less of the more expensive foods. You'll save more expensive foods and save left-over bread.

The Christms Pudding made with "Christmas Bread"

And Note This Too

See also how you can use the left-over raisin bread—when there is any—in delicious raisin-bread pudding.

No matter if your men have frowned on bread pudding. This is raisin-bread pudding! The luscious fruit-meats make it a *new dish* with new appetite appeal. Use plain bread in the same way—simply add the raisins when you make the pudding.

Do this and you'll have no further waste of left-over bread.

Raisins add nutrition as well as flavor to scores of foods — 1,560 calories of energizing nutriment per pound. So they're ideal food for men who work hard all day.

Bread Pudding

¾ cup Sun-Ma'd seeded raisins, 2 eggs, ½ teaspoon salt, butter size of an egg, ½ cup sugar, cinnamon to taste, ½ large loaf stale bread, 2 bananas or apples.

Soak the stale bread over night in water. When time to make the pudding press as much water as possible from the bread so the bread is about the same consistency as dough, then take a fork and get all lumps out. Do not leave the crust if it cannot be mashed to the same consistency as the bread. Add well beaten eggs, salt and stir. Add raisins mixed with the butter. Put into dish in layers, covering each layer with sliced bananas, sugar and cinnamon. Bake in slow oven until brown. Serve wtih whipped cream.

SUN-MAID RAISINS

Sun-Maid Raisins are made from California's choicest table grapes. Cured in the sun. Packed in sanitary packages in a great, glass-walled, sun-lighted plant.

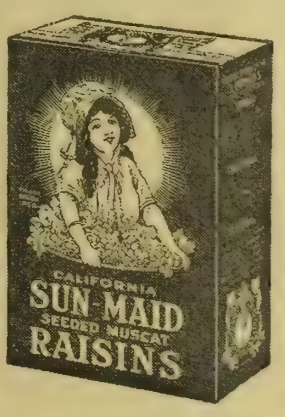
They are clean, sweet, wholesome American raisins—the kind you know are good. All dealers sell them. Insist on Sun-Maid brand.

Three varieties: Sun-Maid Seeded (*seeds removed*); Sun-Maid Seedless (*grown without seeds*); Sun-Maid Clusters (*on the stem*).

Raisins are 30% cheaper than formerly —see that you get plenty in your foods.

Big Recipe Book FREE

We've put our "hundred best recipes" into a valuable book that every farm wife should have. They make nutritious foods, for raisins furnish 1,560 calories of energizing nutriment per pound. All the recipes are practical. And the book is FREE. So simply mail the coupon for it now.



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Dept. B-512, Fresno, California.

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The Cultivator Patterns

3436. Boys' Blouse and Knickerbocker Trousers.—Cut in five sizes: 6, 8, 10, 12 and 14 years. A 10 year size will require 1⅞ yards of 36 inch material for the blouse and 1⅞ yards for the knickerbockers. Price 10 cents.

3767. Ladies' Coat.—Cut in four sizes: Small, 34-36; medium, 38-40; large, 42-44; extra large, 46-48 inches, bust measure. A medium size requires 4¼ yards of 54 inch material. The width at lower edge is 2¼ yards. Price 10 cents.

3473. A Good School Costume.—Cut in four sizes: 8, 10, 12 and 14 years. A 10 year size will require 2⅛ yards of 42 inch material for the skirt, and 2⅝ yards of 42 inch for the blouse. Price 10 cents.

3788. Ladies' Apron.—Cut in four sizes: Small, 34-36; medium, 38-40; large, 42-44; extra large, 46-48 inches, bust measure. A medium size requires 5¼ yards of 36 inch material. Price 10 cents.

3803. Girls' Dress.—Cut in four sizes: 4, 6, 8 and 10 years. An 8 year size will reuire 3 yards of 27 inch material. Price 10 cents.

3489-3251-3475. A Smart Costume.—Waist, 3489, cut in seven sizes: 34, 36, 38, 40, 42, 44 and 46 inches, bust measure. Vest, 3251, cut in four sizes: Small, medium, large and extra large. Skirt, 3475, cut in seven sizes: 24, 26, 28, 30, 32, 34 and 36 inches, waist measure. To make the costume as illustrated will require 4¾ yards of checked material 38 inches wide and 2¼ yards of plain material. The width of the skirt at the foot is about two yards. THREE separate patterns. 10 cents FOR EACH pattern.

3785. Juniors' Dress.—Cut in three sizes: 12, 14 and 16 years. A 14 year size will require 3¼ yards of 38 inch material. Price 10 cents.

3469. Dress for Breakfast or Service.—Cut in four sizes: Small, 32-34; medium, 36-38; large, 40-42, and extra large, 44-46 inches, bust measure. The width of the skirt at the foot is two yards. It will require 7⅜ yards of 27 inch material for a medium size. Price 10 cents.

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Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cents) stamps for each number. In order to furnish our readers with the very best **NEW YORK** styles, all patterns ordered are filled in **NEW YORK.** Do not expect patterns under **Two Weeks** from date of order.

CATALOGUE NOTICE

Send 15c in silver or stamps for or Up To Date Fall and Winter 1921 Catalogue, containing over 500 designs of Ladies', Misses' and Children's Patterns, a concise and comprehensive article on dressmaking, also some points for the needle (illustrating 30 of the various simple stitches) all valuable to the home dressmaker.

PATTERN DEPARTMENT

California Cultivator Los Angeles

WAYS OF ECONOMIZING

By Martha

A large amount of the average family's income goes toward replenishing the wardrobe, and this expense can be considerably lightened if garments are properly taken care of. Plenty of coat hangers help out wonderfully in keeping clothes in good condition. Frequent pressing spoils the looks of cloth and injures the fabric, and the necessity for this can be avoided to a large extent if garments are placed on hangers as soon as they are taken off.

When stockings look too bad to wear with tan shoes, save up several pairs and use one package of brown dye for cotton, and recolor them. New feet quite reasonable in price can be purchased to sew on stocking legs after the feet are beyond darning.

To freshen up velvet, first clean it well, then hold it over steam with the right side up and brush the nap with a whisk broom, but do not allow the velvet to become too damp. You can have nice cuff links by using four pretty buttons, running a cord through the shanks of two of them and working over this with thread.

By watching the sales, picking up remnants, making over, and always getting a good quality of material, there can be a wonderful saving in the matter of clothing, not only for the children, but also for the adults, and many bargains in the way of household supplies may also be found there.

Many woolen fabrics will wash as easily and as well as cotton goods and by washing the best parts of old garments through warm suds softened with a little powdered borax, they come out soft, clean and of good color, and by using a good pattern they can be fashioned into stylish garments for the young boy or girl.

Fine white waists, collars, handkerchiefs and all dainty sheer materials last two or three times as long if they are never rubbed in washing, and by putting them to soak in warm borax soap suds, then lifting up and down and pounding with a wooden potato masher they come out perfectly clean without any rubbing. The fabric is softened and whitened after the soaking and you will find no better way than this to clean the pretty embroidered and crocheted things used for the bureaus and tables.

To prevent chairs and rockers from marking hardwood flors and wearing rugs and mattings, cut pieces of thick felt the exact size of the tips of the chairs and fasten on with good glue, and a long strip of felt can be glued on rockers. Old felt hats can be used for this purpose.

SEASONINGS HELP

You may argue that seasonings add practically nothing to the nutritive value of a dish and for that reason, when the cook suggests getting more of this flavoring or that, you may feel that there is wise thrift in doing without it and spending what you save that way in buying more food that is actually nourishing. But remember that the cheaper cuts of meat, the cheaper vegetables and thrift dishes need more flavoring to make them palatable. Without fresh butter and with a cheaper cut of meat, you need all the help that good flavoring gives.

It is well to vary your seasonings as much as possible. Here are the flavors that are good in puddings and other sweet dishes: vanilla, almond, orange extract, grated orange peel, lemon extract, grated lemon peel, cinnamon, cloves, nutmeg, allspice, ginger and juices from various berries and fruits as they come in season.

For savory dishes you have these flavors: pepper, black and white, ground pepper freshly ground pepper berries, which have a richer flavor than the ground article, cayenne pepper, curry, sage, summer savory, sweet majoram, thyme, bay, Worcestershire sauce, parsley, grated onion, celery seed, celery leaves, dried peppers, and mint. There are many others that will suggest themselves. Soybean sauce, that imparts such a delicious flavor to much Chinese cooking, is good when it is used with certain meat dishes. It can be bought at well equipped groceries. There are several proprietary meat sauces that will help out a lot in cooking cheaper cuts of meat. To be sure they may seem expensive, but remember that you will use but a few cents worth in each dish and that the difference between expensive cuts and cheap cuts is many, many times greater than this expense.

HOME DEMONSTRATION WORK

Home demonstration work carried on by representatives of the United States department of agriculture, cooperating with the state agricultural colleges, through an organization composed of the people of the community, was undoubtedly much better understood at the end of 1920 than it was the year previous. The relation of food to human efficiency, of clothing to health and economy, of improved household conditions and conveniences to living standards appears to have been more clearly appreciated. An increasing number of women are acting as local leaders of demonstrations and lending their support, encouragement and personal interest to home demonstration work. Membership in the county extension organization increased in practicaly every state, in several states as much as 50 per cent. All states in the North and West report work in 1920 in some phase of clothing, nutrition and home management. Food preservation was a project in every state but one, health in all but two, and food production by women, especially poultry improvement, was carried on in practically all the Western and Middle states.

SAUSAGE FOR COLD MORNINGS

Larded

Make balls of fresh pork sausage. Wrap each with a strip of bacon and fasten it with a skewer or toothpick. Fry slowly until a golden brown color.

Breaded

Dip links in egg mixture, then in fine bread crumbs and fry in deep fat. Serve with macaroni and cheese, buttered carrots and apple pie.

With Coddled Apples

Slice tart cooking apples about one-half inch thick after coring them. Cover with a plain sugar syrup and cook slowly until apples are transparent. Fry pork sausage links until a delicious brown. Serve with buttered lima beans, celery and apricot shortcake.

TO ACCOMPANY THE GIFT

With a Phonograph Record

Because the very thought of you,
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Pray let me share the music true,
The sweetest I could find.

With a Book

I cannot make new worlds for you
Yet these closed covers truly frame
A wondrous world of rapture true—
Be pleased to enter in my name!

REASON ENOUGH

Susie: "Papa what makes a man always give a woman a diamond engagement ring?"

Her Father: "The woman."

—Chesapeake & Ohio Railway Magazine.

DECIDEDLY IN FAVOR OF IT

"I dunno what dis relativity is," said Uncle Eben; "but if it's what keeps dis earth from rollin' around loose in space an' bumpin' into somethin', I'm strictly in favor of it."

It has been said that every step saved the housewife in the kitchen means one more minute of happiness for her. If such is the case, some women must be leading miserable lives.

For weeks after a community picnic, more work and less grouching is done, asserts R. R. Thomasson of the Missouri College of Agriculture. Less profanity is inflicted upon the mules and heartier greetings are bestowed upon the neighbors.

To remove iron rust from a deliacte fabric, spread it with cream of tartar. Twist cloth to keep cream of tartar in place; put in a pan of cold water, and heat gradually to boiling point. It may be necessary to repeat treatment.

When over a group of callers polite
A wordless pause descends,
I think how terrible it will be
If this silence never ends..

R. McCann.

Oil Light Beats Electric or Gas

Burns 94% Air

A new oil lamp that gives an amazingly brilliant, soft, white light, even better than gas or electricity, has been tested by the U. S. Government and 35 leading universities and found to be superior to 10 ordinary oil lamps. It burns without odor, smoke or noise—no pumping up, is simple, clean, safe. Burns 94% air and 6% common kerosene (coal-oil).

The inventor, W. V. Johnson, 31 N. Fifth St., Portland, Ore., is offering to send a lamp on 10 day's FREE trial, or even to give one FREE to the first user in each locality who will help him introduce it. Write him today for full particulars. Also ask him to explain how you can get the agency, and without experience or money make $250 to $500 per month.

Wonderful, Full Tone, Baby Grand

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Beautiful black-enameled steel box, black fibre horn and turn-table that will play all sizes of disc records. Not a toy—but a REAL PHONOGRAPH that will bring into your home all songs, dance music, bands and orchestras. Light weight, can be taken on motor trips; excellent for dancing. WE DO NOT WANT YOUR MONEY IN ADVANCE. Fill out and mail coupon NOW while this

SPECIAL CHRISTMAS PRICE OF $9.75

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Send me a Baby Grand Phonograph, a free record and package of needles. I will pay postman on arrival. If I am not satisfied I will return Phonograph and you will refund my money.

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The Sievert Oil Burner burns either distillate or kerosene oil in cook stoves, heaters, furnaces, pasteurizers, boilers, prune dippers, dairy sterilizers, etc. Absolutely safe, odorless, very convenient and low priced. MAKES HEAT AT HALF WHAT WOOD AND COAL COSTS. Install it yourself. Write for circular and prices on different sizes. Address Sievert Oil Burner Co., 710 North Main St., Los Angeles.

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SAVE OVER 10c PER POUND
ONLY HIGHEST GRADE COFFEE

Send $1.50 for 5 lbs.—Our best quality. Valuable Coffee Book Free With Each Order.

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To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

Livestock News Notes

H. C. Witherow of the Greenwood Stock Farm, breeder of Durocs, reports that he has been enjoying a satisfactory trade the past fall and that he is finding the hog business just about the most profitable of any of his farm operations. Dollar barley and nine and ten cent hogs make a combination that is hard to beat. It is more than probable that Mr. Witherow will announce a sale for the latter part of January.

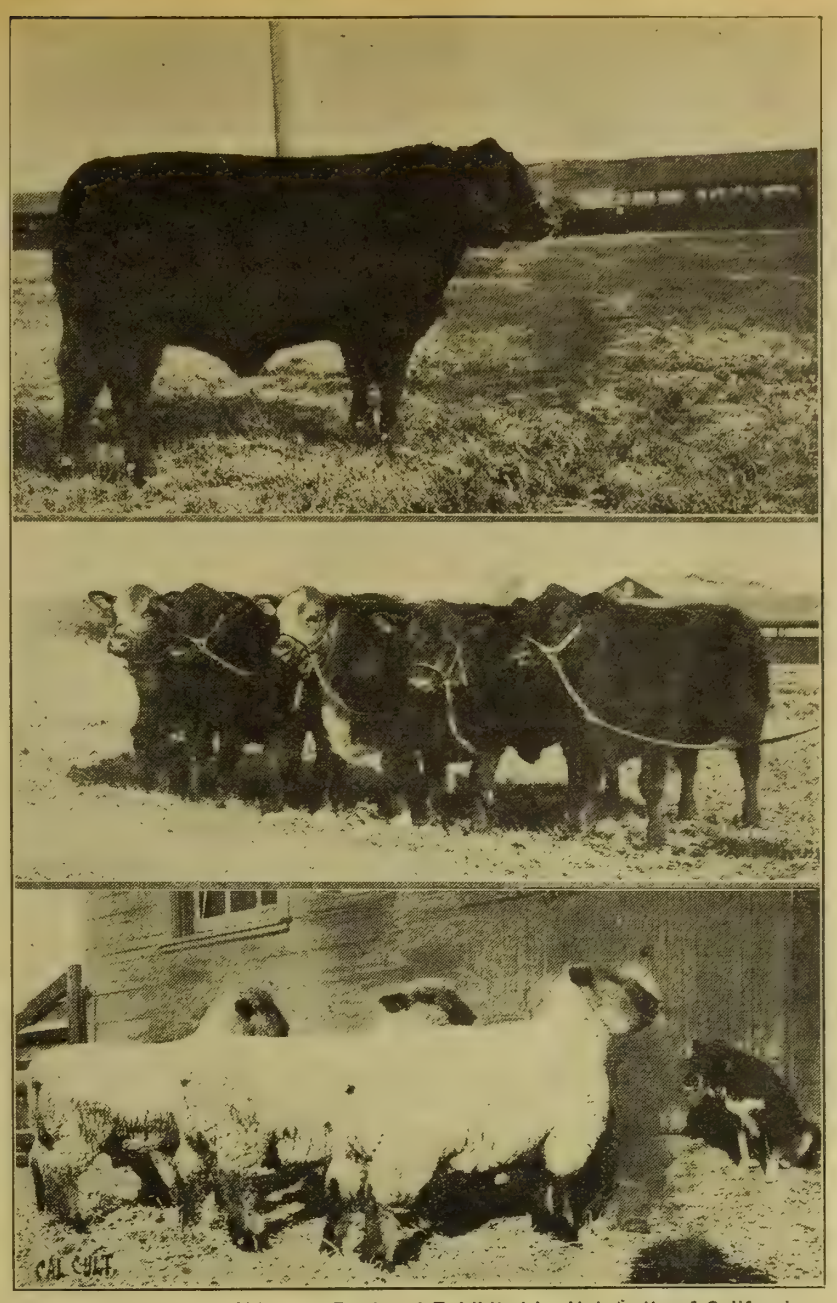
Mrs. Ruth Hardy, manager of Anchorage Farms, Orland, has sold 15 Berkshire gilts and a boar to the Weed Lumber Company, Weed. The same herd furnished two bred gilts to G. F. Lee of Oroville.

Three carloads of horses have been sold by a rancher near Gold Circle, Nevada, to a San Francisco dealer. The purchaser announced that the horses were for city users who are supplanting part of their light truck equipment with horse power.

Harlequin, the aged Hereford bull owned by the Pickering Farm of Missouri, was grand champion at the recent Royal show at Kansas City, and Lily Stanwat, owned by Cassidy & Son of Iowa, was the female champion. More than 300 head were shown in the various breeding classes and the show was declared to have been the best ever held at Kansas City.

Forty-eight head of senior and junior calves, sold without any warranty, made a general average of $280 at the Royal sale.

The attention of California Holstein breeders is now being centered on the activities of the McCloud River Lumber Company's herd, where some exceptional records have been made this fall, with others promised. Since October 1 four 30 pound records have been announced. McCloud Hengerveld Geertje came through with 30.29 pounds butter from 597 pounds milk six months after calving. McCloud Korndyke De Kol registered 31.54 pounds butter from 653.3 pounds milk at the age of seven years. McCloud Korndyke De Kol Mecthilde, a senior four year old daughter of the last named cow, produced 31.02 pounds butter from 643.1 pounds milk, and Buffalo Helio Bon Champ, eight years old, checked out with 30.39 pounds butter from 602.7 pounds milk. McCloud Princess Homestead, five years old, made 26.54 pounds butter from 640.2 pounds milk in seven days, and 107.24 pounds from 2,485.8 pounds milk.



Some Champions at Chicago. Bred and Exhibited by University of California
Upper: California Standard, pure bred Aberdeen-Angus steer, dropped October 15, 1920. Center: Group of five steers. Lower: Pen of pure bred Hampshire wether lambs bred and exhibited by University of California.

At the annual meeting of the American Hereford Association held at Kansas City during the Royal Livestock Show, John E. Painter of Roggen, Colorado, was elected president. Mr. Painter visited this state last spring and attended the annual Stockmen's Week at the university farm, Davis.

Following the plan of the Hereford breeders to offer bulls in carload lots at the spring sale to be held at Davis, the Shorthorn breeders are considering the possibility of including in their sale to be held at the same time bulls in sufficient numbers to attract range buyers. If both breed associations inaugurate this plan it will be possible for California range operators to fill their needs without scouting the state over.

A. W. Morris & Sons Corporation, Woodland, has made an arrangement whereby the university's Holstein herd will have the service of a richly bred son of Sir Aaggie De Kol Acme. This youngster is a brother in blood to the $12,000 Sir Aaggie Mead De Kol.

Rosamaines Dora Netherland, a two year old Holstein heifer owned by the Maxwell Farms, has broken the state record for butter in seven days in the eight months after calving division. When fresh this heifer made 21.66 pounds butter from 448 pounds milk. Eight months later she made 20.46 pounds butter from 441.6 pounds milk, showing a consistency in production that is wonderful. On semi-official test during the eight months she has called for a retest every month but one. She has been tested 14 times in the eight months and her butterfat in two days in her eighth month was one-tenth pound more than in her first month on semi-official test.

At a meeting of the delegates of 30 cooperative agricultural societies in Argentina, held at Rosario de Santa Fe, it was voted to organize offices in Buenos Aires, Rosario and Bahia Blanca for the sale of their products and for the purchase of agricultural supplies and machinery.

California Breeders

have sold more than $500,000 worth of registered cattle in our sales, under the most stringent requirements laid down by any sales organization in America. Satisfied buyers have been the rule in all our sales.

California Breeders Sales & Pedigree Company

C. L. Hughes, Sales Mgr. Sacramento, Ca

Santa Anita Rancho

Pure Bred Registered Percheron, Arabian and Thoroughbred Horses, Holstein-Friesian Cattle, Southdown Sheep, Big Type Poland China Swine, Mammoth Jacks and Jennets.
Young Breeding Stock of All Kinds
Every Animal Guaranteed

Santa Anita Rancho and Anoakia Breeding Farm

SANTA ANITA Anita M. Baldwin, Owner CALIFORNIA

O.U.R. Hampshire Swine

Ortega-Underhill-Rancho

Thos. T. Dinsmore, Mgr., Santa Barbara, Cal.

Prevents Hog Cholera—Cresy-lol

A standardized Disinfectant. Dilute 1 part with 50 parts of water and use as spray or dip. Manufactured by

ARTHUR R. MAAS, Chemist

308 E. 8th St., Los Angeles, Calif. Write for circular

Warranted to Give Satisfaction.

Gombault's Caustic Balsam

Has Imitators But No Competitors

A Safe, Speedy and Positive Remedy for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, Skin Diseases, Parasites and Thrush, and Lameness from Spavin, Ringbone and other Bony Tumors.

Removes Bunches from Horses or Cattle.

For Human Use Caustic Balsam has no equal as a Liniment and Counter-irritant for Inflamatory and Muscular Rheumatism, Sore Throat and Chest Colds, Growths and Stiff Joints.

A Perfect Antiseptic—Soothing and Healing if applied immediately to Burns, Bruises or Cuts.

Every bottle will give satisfaction. Sold by Druggists or sent by parcel post on receipt of price $1.50 per bottle. Send for descriptive circulars and testimonials.

The Lawrence-Williams Co., Cleveland, O.

DISPERSAL SALE

65 Registered Holsteins

T. B. MINGS HERD

EL MONTE, CALIF.

Thursday, January 5, 1922

An offering of young, well bred Holsteins, in excellent physical condition, and including members of some of the breed's greatest producing families, among them

FOUR DAUGHTERS OF KING KORNDYKE PONTIAC 20TH, the $12,000.00 son of Miss Valley Mead De Kol Walker.

FOUR GRANDDAUGHTERS OF KING SEGIS ALCARTRA PRILLY, the four times Grand Champion Bridgford bull.

A GRANDDAUGHTER OF ADIRONDAC WIETSKE DAIRY MAID, the highest record cow on the Pacific Coast. (This heifer is sired by her $5,000.00 son, King Abbekerk Johanna Segis.)

FIVE GRANDDAUGHTERS OF MAID TUEBIE SEGIS, the great cow that made 1140 lbs. butter from 28,383 lbs. butter in one year.

SEVERAL DAUGHTERS OF KING SEGIS PONTIAC JANNEK, Grand Champion at the Southern California shows this year.

TWENTY A. R. O. cows and heifers with records up to over 30 lbs. butter in 7 days.

A BEAUTIFUL 30 POUND DAUGHTER OF MUTUAL FOBES LONGFIELD DE KOL, backed by four generations of high record dams, and selling heavy with calf to a richly bred son of Sir Pietertje Ormsby Mercedes.

GUARANTEED BREEDERS, TUBERCULIN TESTED AND SOLD SUBJECT TO RETEST

TERMS OF SALE: Responsible parties make arrangements before sale for terms of one-third cash, balance in three, six and nine months with sale managers.

Write for catalog now

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

Auctioneers:
Rhoades & Rhoades, Los Angeles

Sale will be held under cover at T. B. Mings' farm, 2 miles south of El Monte, rain or shine.

USE SHIRE HORSES

Breed your mares to Shire Stallions, good Shire Geldings are in demand. Get some registered Shire Mares.

Shire owners, record colts young, fees are double after one year old. Prepare Shires for fall shows, premiums are very liberal this year. For information on Shires write

W. G. Lynch, Secretary, American Shire Horse Association, Tonica, Illinois.

Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.

The California Plan of Livestock Auctions

By R. P. ROYCE

IN THE last issue of the Cultivator was pointed out that in the expansion of the auction plan of selling registered livestock in the older sections of this country a number of admitted abuses had developed and that some one or another of these abuses cropped out in sales from time to time. The more flagrant practices referred to were:

1. Wash sales.
2. Extensive use of personal credit.
3. Domination of breeders by fieldmen, auctioneers and livestock journals.
4. Lack of a uniform plan of selling.
5. Lack of satisfactory machinery for adjustments of disputes between buyer and seller.

It was also made plain that no general indictment against breeders of the pure bred industry was to be inferred. Rather it was sought to convey the idea that the practices mentioned occurred but occasionally, but the fact that they occurred at all tended to discredit, unfairly, the industry and caused the public to view the industry with skepticism.

The auction method of selling livestock in this state is of comparatively recent origin. Prior to 1917 but few sales of registered livestock were held during any one year. The reason for that situation obtaining was due to the fact that the pure bred industry in the state was of small proportions and that the marked development was due to appear from 1917 on.

Now it so happened that the Holstein business was the first to make substantial progress in California, and it also happened that, to a marked degree, the men becoming interested in that breed at the inception of the business were men of progressive notions and many were men of large business interests. These men, convinced of the soundness of the pure bred idea and the absolute necessity for fostering better livestock of all kinds in California, invested heavily in foundation material and during the course of assembling their herds they gained considerable insight into the general situation. In not a few instances they encountered experiences that left a bad impression. It was but natural then that when the point had been reached where surplus material had accumulated and was ready for sale these pioneer breeders found themselves facing a situation wherein the problem of selling loomed large. They could follow the common practice of selling by auction with the possibility of the introduction of such attendant abuses as have been mentioned, or they could evolve a new plan or so modify the old way as to eliminate as far as possible such evils as was felt were detrimental to the business. The latter course seemed to offer the most and the fact that no long standing practices existed in California, and further, the progressive temper of California ranchers, created a situation entirely favorable to an attempt to work out a plan of selling that would be an advance over eastern methods.

Starting with the idea that the production and sale of pure bred livestock was simply a business proposition, it followed that a sound selling system should be based on sound business practices. It was, then, following careful study of the whole scheme of producing and selling pure bred livestock that the California plan was evolved. Finally the machinery was perfected and an organization now known as the California Breeders' Sales and Pedigree Company, with headquarters at Sacramento, was launched and put under its own power in the fall of 1916.

So well has the story of this organization been told in a booklet issued in January of this year, that the following extracts are quoted to familiarize the reader with the general plan of operations:

"The idea of this organization originated in the mind of J. M. Henderson, Sacramento, California, at the time when he was becoming interested personally in registered livestock, and while he was looking ahead to the conditions surrounding the future market and marketing of registered breeding animals.

"Out of this study of conditions surrounding the production and marketing of registered livestock throughout America, came the conviction that the public sale was the most important factor in the selling end of the breeding business, and his investigations also indicated that in some of the older livestock centers of the country a great many abuses had crept into the public sale business, to the detriment of the best interests of the breeders.

"At that time California was just fairly at the beginning of public sales of registered livestock, and, in the interests of sound business for the breeder, the time seemed opportune to inaugurate a plan of selling at public sale that would accomplish several purposes, among them to head off the harmful practices that had grown up in other sections, to give California breeders a real sale service that would also be a potent factor in the advancement of pure bred livestock interests at all times, and to provide a reliable public market for the smaller breeders that would place them upon equal advantages of selling with owners of larger herds.

"At the time of organization it was unanimously agreed among the directors that the operations of the company would be directed strictly to the best service possible to render the breeders in its field, that no one of them would expect profit, salary or any other remuneration from the operations of the company, and that if any surplus should accrue it would be so handled as to benefit all breeders in its field.

"Later on, after the soundness of the plan of the company had been demonstrated, and there seemed no danger that stockholders would ever have to make up possible financial losses, a considerable number of representative California breeders were invited to buy one share each, on the same terms as the original issue of seven shares. In response to this invitation a meeting of the invited breeders was held, at which the sentiment developed that the present management and operation of the company was fully approved, and it was decided by them that no betterment of service would be likely to result with an increased list of stockholders and directors.

"The next step was to determine upon what terms registered cattle should be sold in the sales of the company, and a rough draft of a sales contract, including the guarantees, selling commission, and other features of a sale transaction, was submitted to a large number of the leading breeders of California for their approval or suggestion, and out of this was evolved a standard sale contract which has now been in force for four years, practically in its original form.

"It is worthy of note here that the contract of this company was the first in effect by any sale organization in this country which required every animal sold unqualifiedly guaranteed to be a breeder, a measure that has been of inestimable benefit to the hundreds of buyers of foundation animals in California sales, and a measure that has since been widely copied in the better sales throughout the country. For the information of any who have not seen a copy of this contract it is here reproduced in full:

CONDITIONS OF SALE

The following terms and conditions constitute the contract between California Breeders' Sales and Pedigree Company and the party whose signature appears as a consignor on the reverse side of this sheet:

1—None but registered animals will be offered to or received by the company.

2—Registry certificates must accompany all entries, together with application for transfer, signed in blank.

3—Tuberculin test certificates, signed by a veterinarian approved by California Breeders' Sales and Pedigree Company, must accompany the entry of all cattle over six months of age, and tests must have been made not more than sixty (60) days nor less than forty (40) days before date of sale.

4—The consignor agrees to permit the buyer to tuberculin test all animals sold, the test to be made by a graduate licensed veterinarian, such test to be made before cattle leave the sales grounds and in the presence of the seller or his representative if the seller so desires, and the consignor agrees to receive back at the purchase price any animals that react to this test. The seller to have no responsibility for any subsequent reactions.

5—The consignor guarantees every animal sold to be a breeder. If a female sold as bred proves not to be with calf, or an open female fails to conceive at first service, the buyer must report the fact within ten days after the female comes in heat, to both the seller and president of the California Breeders' Sales and Pedigree Company, in writing. If the buyer elects to breed to his own bull he will be given four months to try the cow. If she fails to conceive within that time she must be shipped back to the seller's ranch, and notice in writing given the seller at least four days in advance of shipment. If the cow fails to conceive within four months in the hands of the seller, he must refund immediately the full purchase price to the buyer. Expense of shipping back to the seller's ranch, and expense of shipping back to buyer in case cow is returned safe in calf, is to be shared equally by seller and buyer.

6—Cattle must be delivered at the place of sale, in good salable condition, forty-eight (48) hours in ad-

Profit From Your Cows

—that's what counts, doesn't it?

YOU keep cows for one reason only—for profit. But not all cows are profitable; some constitute an actual deficit at the end of the year. Many a cow that has every reason to produce profitably joins the ranks of the "poor milkers" just because her milk-making organs are below par.

Make no mistake about this—there are scarcely any so-called "poor milkers" that cannot be made to yield normally and profitably by the medicinal aid furnished by Kow-Kare, the great cow medicine. Every dollar spent for Kow-Kare will put itself, and something besides, back in the milk pail.

Kow-Kare is a cow medicine—not a stock food. It has positive medicinal qualities that act vigorously on the genital and digestive organs and make them function naturally. For a quarter century this famous medicine has been widely used as a preventive and unfailing treatment in such cow diseases as Barrenness, Abortion, Retained Afterbirth, Scouring, Bunches, Milk Fever, Loss of Appetite, etc.

Keep close watch on every one of your cows; at the first sign of failing milk-yield, use Kow-Kare according to directions and watch the result. Write us today for free copy of our valuable book, "The Home Cow Doctor."

Kow-Kare is sold by general stores, feed dealers, and druggists at the new reduced prices—65c and $1.25.

DAIRY ASSOCIATION CO., INC.
Lyndonville, Vt.

"Penny-a-Day Prevention."

Thousands of successful dairymen use Kow-Kare regularly a part of every week during the winter to keep the assimilation and digestion in good order and throw off disease. Many of the most serious disorders that arise during the calving period can be prevented by using Kow-Kare for a couple of weeks before and after. Don't overlook this suggestion.

vance of opening of sale, accompanied by owner or his representative; and must be fed and cared for by the owner until close of sale, and owner must attend to shipping after the sale.

7—Hay, grain and bedding must be furnished by consignor.

8—Owners or their representatives will not be permitted in the sale ring unless the occasion should make it necessary.

9—Consignments of bulls will be limited to one bull to every five females, unless otherwise arranged in advance.

10—A fee of ten ($10) dollars will be charged for each animal cataloged and not offered owing to sickness or injury; or offered and passed without a bid; or upon animals selling for less than $100 in lieu of commission.

11—A commission of 10 per cent upon the highest bid will be the entire charge for selling except as elsewhere stated, and as follows: On an animal selling for $500 and up to $750 the commission will be 10 per cent on $500 and 7½ per cent on the balance; on animals selling for over $750 the commission will be 10 per cent on $500 and 5 per cent on the balance. Full page pedigree charts of reference sires will be inserted in the catalog at an extra charge of $3.75 each.

11a—All photographs used in advertising or catalogs must be furnished by the consignor. If engravings are used in sale catalog a charge of $3.75 for each catalog page occupied by engravings will be made in addition to actual cost price of engravings.

12—All entries must be for absolute sale. There shall be no by-bidding directly or indirectly, nor any reserve. The consignor agrees to pay to California Breeders' Sales and Pedigree Company twenty-five (25) per cent of the price at which an animal is struck off if it is proven that the bid was a direct or indirect by-bid.

13—All defects or blemishes or unsoundness of any nature known to the seller must be stated at time of entry and upon the entry.

14—The consignor positively agrees that after having consigned stock to the sale mentioned on the reverse side of this sheet, he will not dispose of it by private sale, either prior to or during the progress of the sale, and he hereby contracts to pay a penalty of 25 per cent of the actual selling price as an agreed forfeit for a violation of this condition.

15—The consignor further agrees to the several conditions mentioned below: That no animal will be withdrawn from the sale, except in case of sickness or injury subsequent to the time of entry sufficient in its nature to prevent the realizing of a fair price; in which case the before mentioned fee of $10 will be paid.

16—That the consignor is the responsible party; the company simply an agent.

17—That the title of the property is guaranteed by the consignor to the buyer; and the consignor hereby represents that there are neither claims against, nor liens upon, nor ownership, in the whole or part, of any animal entered by him that can in any way interfere with its rightful sale or delivery, or that can hereafter deprive the purchaser of full, complete and peaceful ownership.

18—That the consignor will furnish a halter with each animal he sells; and that all defects and unsoundness of any nature known to the consignor will be stated; that no animal suffering from contagious disease; or that is vicious, will be sent by him to the sale; and that he will not consign a cow that has been bred without giving name and number of bull and date of service; that no animal that has aborted with or since last calf will be consigned unless so stated.

19—That the company is authorized to decline any bid made by intoxicated or disorderly parties, or by those who have defaulted on former purchases; or by any who, in its judgment, is not a reliable, responsible bidder.

20—That in case any purchaser fails to pay for and receive an animal struck down to him, said company is authorized to accept the same amount from another person; or to accept the next highest bid; or, if in its judgment it be to the best interests of all concerned, to put the animal up for sale the second time. But in any case where an animal is not paid for fully in cash, the consignor agrees to receive it back as unsold, without attaching any liability to said company, and this condition includes in its obligation the stoppage of payment of check or draft or any action of that nature.

21—The consignor agrees to defend any suit at law brought by a purchaser by reason and on account of sale of his animal or animals.

22—That in disputed cases, involving the accuracy of statements made by the consignor, the president of California Breeders' Sales and Pedigree Company is authorized to appoint a committee of three persons, and the decision of this committee shall be binding upon both seller and buyer, and if the consignor is in the wrong he agrees to pay the expense of adjustment; and the buyer agrees that if the above mentioned committee disallows his claim he will pay the expense of investigation.

23—That in case an animal is refused by a bidder on account of misrepresentation of the consignor, and that refusal is sustained by the committee, he, the consignor, will pay the full commission and receive back the animal.

24—That all settlements for animals sold must be made through California Breeders' Sales and Pedigree Company.

25—That California Breeders' Sales and Pedigree Company is authorized to withhold entire settlement on each and every animal for which registration certificate, and application for transfer signed in blank, has not been delivered to said company prior to settlement, until such time as said certificate and application have been delivered to said company.

26—That in case of an animal or animals sold subject to tuberculin test by the buyer, California Breeders' Sales and Pedigree Company is authorized to withhold settlement for such animal or animals until such time as said tuberculin test has been completed and the buyer has notified said company of his acceptance of said animal or animals.

The only variations from this standard contract in any sales have been as follows:

"In sales where the cattle were sold without tuberculin test certificates, clauses 3 and 3A were omitted.

"In sales of the beef breeds clause 10 was rearranged to meet special conditions present, and a minimum charge of $20 per head is made for animals selling for $250 or under. Also a special provision is made in sales of beef breeds that a female selling with calf at foot requires no further guarantee that she is a breeder.

"With no incentive for profit, the line of our operations was clearly defined, and in addition to the actual conduct of public sales it was decided to carry out a form of promotion work in connection with our regular sale publicity, that would be of direct benefit to the particular breed involved. The carrying out of this idea involved a larger expenditure for display advertising space in the various publications used, than would have been the case had profit been the result in mind, a more careful preparatoin of advertising copy, and the mass of detail work that precedes the actual preparation of advertising copy on registered cattle, and the maintenance of a very large and complete mailing list that would effectively cover the livestock field of the whole west.

"It was recognized at the beginning that two of the important contacts the breeder of registered livestock has in the public sale are with the auctioneer and with the publications which carry the advertising of the sale, both of which contacts have been sources of many of the public sale abuses. This company determined to solve this problem by the very simple expedient of placing value of service rendered on the part of any auctioneer or publication as the sole standard of judging usefulness to its public sales, and this policy has been strictly adhered to, without fear or favor.

"Again, its sale contract, which had actually been made by a large group of representative breeders, incorporated a number of advanced ideas in requirements made of the seller for the protection of the buyer, and yet were recognized by the most substantial breeders as necessary for the conduct of the breeding business upon a sound basis. It was determined at the beginning to enforce this feature, also without fear or favor, and this has always been strictly adhered to, and with a very few breeders unwilling to toe the mark.

"By adopting one big, comprehensive selling plan for the entire state, California breeders have made possible a greater certainty in the successful conduct of their sales than would have been possible had the sales been conducted in smaller units, or by agencies that were more local in character, scope and knowledge.

"In proof of the effectiveness of this plan of selling, every sale ever handled by this organization has gone through as scheduled, with two minor exceptions. In 1917 we conducted a consignment sale of Jerseys and after selling 40 head stopped the sale as the buyers present appeared to have filled their needs. In 1920 in a mixed sale of cattle, hogs and sheep, after selling the sheep and hogs satisfactorily, and part of the cattle, we stopped the sale owing to lack of interest in the balance of the cattle.

"In accomplishing its purpose to eliminate by-bidding, reserves or other protection to the buyer from California sales, which practices have always proved detrimental to the breeding business wherever practiced, our efforts have been highly successful. In only a few isolated cases has a suspicion of these practices arisen, and after investigation in each case the suspicion proved to be not well founded.

"In our total sales of 4,180 head of registered cattle only two buyers have ever defaulted in payment of their

(Continued on Page 615.)

"Cut the Price" Says Melotte

MELOTTE, the Edison of Europe, manufacturer of the greatest Cream Separator the world has ever known, announces a sweeping reduction in prices.

Labor conditions in general together with tremendous re-building and re-organizing efforts put forth by this big man of Belgium has resulted in cutting production costs to the bone.

And right now *at this particular time*, exchange rates are extremely favorable. Take advantage of this condition while it lasts. Get the most for your American dollar. Buy now and save money!

Belgium Imported MELOTTE Reduced 22%

Before buying any separator find out how the Melotte has won 264 Grand and International prizes and how, for Efficiency of Skimming, Ease of Turning, Convenience of Operation and Durability—the Great Belgium Melotte has won every important European Contest.

$7.50 after 30 Days Free Trial

This is the offer. NO MONEY DOWN—FREE TRIAL—SMALL MONTHLY PAYMENTS—DUTY FREE.

We will send an Imported Melotte Cream Separator direct to your farm on a 30 days absolutely Free Trial—no deposits—no papers to sign—use it as if it were your own separator. Compare it—test it in every way.

When you are convinced the Melotte skims cleaner, turns easier, washes quicker, lasts longer than all others, then pay $7.50 as first payment and the balance in small monthly payments until the separator is paid for.

Self-Balancing Bowl The Belgium Melotte is the only single-bearing-bowl separator ever made. This patented bowl hangs from one frictionless ball bearing and spins like a top. It is *self-balancing*. It skims as perfectly after 15 years' use as when new. Positively cannot ever get out of balance—cannot vibrate and thus cause cross currents which waste cream by remixing with the milk. The 600-lb. Melotte turns as easily as the 300-lb. machine of other makes. Spins for 25 minutes unless brake is applied. No other separator has or needs a brake. The Melotte bowl has solved the problem of perfect skimming.

Send This Coupon!

Fill out and mail the coupon for New Melotte catalog containing full description of this wonderful cream separator.

Don't buy any separator until you have found out all about the Melotte, its 15-year guarantee and our 30 Day Free Trial Offer.

Send coupon for full information and also revised price list showing 22% reductions.

The Melotte Separator H. B. BABSON, U. S. Manager
Dept. 3029, 2843 W. 19th St., Chicago, Ill.

The Melotte Separator, *H. B. Babson, U. S. Mgr.*
Dept. 3029, 2843 W. 19th St., Chicago, Ill.

Without cost to me or obligation in any way, please send me the Melotte Catalog which tells the full story of this wonderful separator and M. Jules Melotte, its inventor.

Name.....

Address.....

Post Office.....*State*.....

We are offering California Holstein breeders a chance to buy a real herd header in

Tritomia Panzie Ormsby 352078

Born May 11, 1921

Sired by Tritomia Pietertje Ormsby

The great three year old son of Sir Pietertje Ormsby Mercedes and Grand Champion of the 1921 National Dairy Show. The dam is a granddaughter of Sir Ormsby Skylark and has a record of 1042.7 pounds of butter from 21024.9 pounds of milk as a senior three year old.

This calf was a show ring winner in four shows this year. He was first junior calf at San Francisco. Here is TYPE combined with PRODUCTION. Tuberculin tested and guaranteed a breeder.

The price is right. Terms to responsible parties.

Do not delay on this one as several Eastern breeders have inquired about him and some one will snap him up at the price.

MAXWELL FARMS

Jack Klein, Mgr. Hollywood, Cal.

MR. FARMER:—

You are contemplating the purchase of a service bull next year. Why not save 50 per cent of the purchase price by buying a registered Holstein bull calf now. Pay for him next year when he is ready for service.

Sons of SIR VEEMAN KORNDYKE PONTIAC, who has 27 A. R. O. daughters, and of BURR WALKER SADIE VALE, whose seven nearest dams average 29 lbs. of butter in 7 days, included in this offer. Call or write at once.

BURR FARM 26th and Downey Road, Los Angeles
RFD 2 Box 120

Tosantos Walker Mead

Born December 9, 1919
Exceptional Yearly Record Backing

His five nearest dams average over 1,000 lbs. butter in a year. He is out of a wonderful daughter of Prince Gelsche Walker and Sir Aaggie Mead De Kol. He is a show bull and is priced for immediate sale.

E. D. BARRY, JR. Workman and Azusa Ave., Covina, Cal.

HOLSTEIN *Fred Hartsook* RANCH **CATTLE**

We have assembled an excellent foundation herd of females and will be glad to have breeders call. Fred Hartsook, Lankershim, California.

RHOADES & RHOADES

Expert Livestock Auctioneers
1505 So. Main St.
Los Angeles, Cal.
Sales Pavilion
Stock Yards at
Hynes, Cal.

¶ ¶ ¶

WE CONDUCT SALES OF REG. DAIRY CATTLE GRADE CATTLE GEN. FARM SALES in all parts of Calif. and adjoining States. Satisfaction guaranteed. Write for dates and terms.

For Profitable Durocs

As we have sold out of bred sows and gilts, we are now offering big growthy fall pigs, either sex, at attractive prices.

D. G. Cummins & Son
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Book your order with us now for early Spring Chix—from our own selected flock of 4000 birds. Order now and be sure of your chix. WHITE LEGHORNS ONLY—the Laying Strain.
STEELES' EGG RANCH,
Phone Gardena Exchange 692.
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Day Old Pullets—Here is your chance to get day old White Leghorn and Ancona chicks, guaranteed at least 90 per cent pullets. We are taking orders fast for spring delivery. We also have R. I. Red and Barred Rock chicks but do not separate the sex. All chicks are from strictly thoroughbred laying stock and are hatched right and shipped by Special Delivery Parcel Post. Send for prices and get your orders in at once. Orange County Hatchery, Santa Ana, California.

Walter Hogan Stock White Leghorn Chicks. December and January chicks come from Winter layers. The cockerels are in the market for early broilers. You can have the chicks out of the brooder house in time to put in a Spring brood. We are hatching the chicks and ship by Parcel Post, safe arrival guaranteed. You can do what others do—make money with poultry. Lyon Hatchery, Gardena, California.

We Are Now Booking Orders for S. C. White Leghorn Baby Chicks, from strong, healthy, vigorous stock. Bred especially for heavy egg production, from two hundred to two hundred and eighty egg strain. If you want strong, healthy baby chicks, place your orders with the Vineburg Hatchery. All baby chicks guaranteed safe delivery. Vineburg Hatchery, Vineburg, California.

White Leghorn Baby Chicks from heaviest laying stock for Spring, 1922, delivery. January prices $5.00 per 25, $9.50 per 50, $18.00 per 100. Special prices 500 and 1,000 lots. Safe delivery live vigorous chicks guaranteed. No money in advance, pay on delivery. Order early chicks now and realize big broiler profits. Established 1898. Must Hatch Incubator Co., 438 Seventh St., Petaluma, Cal.

Penn's Quality Barred Ply. Rocks, and Ferris Heavy-egg type White Leghorns. If we knew of better fowls we would have them. Our Rocks led again at Fresno, 9 out of a possible 14 places. They lay. Stock for sale. Booking orders for chix and hatching eggs for 1922 delivery. **Golden Rule Poultry Farm,** Porterville, California.

Profitable Poultry. For 20 years these strains of 180-290 egg Leghorns, Anconas, Reds, Rocks, Minorcas, Wyandottes, Ducks have made foundation flocks for hundreds. Reasons: Superior vigor, size, winter egg production, reasonably priced chicks, profit. Address, Profitable Poultry, 13 North Fair Oaks, Pasadena.

Baby Chicks hatched in Petaluma Incubators are a superior class. Strong, vigorous, sturdy, grow rapidly, lay early. Buy chicks from hatcheries using Petaluma Incubators. You will find one near you, if not, write us. Catalog free. Petaluma Electric Incubator Co., Petaluma, California.

Baby Chicks—From the best 200 egg strain of White Leghorns in the valley. Please book your order early if you want chicks on a certain date. Established 10 years. Send for price list. Visitors welcome. The White Leghorn Hatchery, Pomona, California.

Success in business is attained by experience and knowledge. The poultry business can be made to pay by following the teachings and information contained in POULTRY FOR PROFIT, $1.00 postpaid. Cultivator Publishing Company, Los Angeles, California.

Baby Chicks from my carefully selected flock of pure-bred S. C. White Leghorns. I am accepting orders now for spring delivery. Make your arrangements early and write for prices and particulars now. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

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White Leghorn Baby Chix from Petaluma's heaviest producing stock. We guarantee safe arrival. Literature on request. Pioneer Hatchery, 409 Sixth St., Petaluma, California.

Barred Plymouth Rocks — "Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Vodden, Los Gatos, California.

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Choice Barred Rock Cockerels for sale at $5.00 each, f. o. b. Campo. F. J. Ferguson-Davies Ranch, Campo, San Diego Co., California.

POULTRY

Baby Chicks—Barred Rocks, R. I. Reds, and White Leghorns. All our chicks are from Hoganized stock. Prices: Rocks and Reds, $20 per 100; Leghorns, $17; delivered to you by parcel post, prepaid. Safe arrival guaranteed. Write for circular. Established 1915. Hargett & Son, Route 2, Box C, Compton, California.

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Baby Chicks, Hatching Eggs, from Hoganized hens, well mated. White and Brown Leghorns, R. I. Reds, Barred Rocks. Safe arrival guaranteed. Order early. Write for circular. Stubbe Poultry Ranch & Hatchery, Box 67-E, Palo Alto, California.

Chicks, Eggs — Hoganized White Leghorns, Brown Leghorns, Black Minorcas, Rhode Island Reds, Barred Rocks, Anconas, Blue Andalusians. Free circular. Order early. McDonald Poultry Ranch, King Road, San Jose, California.

Finest Hatchery in the World at Pebbleside Poultry Farm. Baby chicks and hatching eggs from our own selected heavy layers. Visit our farm and have a look. Pebbleside Poultry Farm, Sunnyvale, California.

Watch Us Grow—Baby Chicks. We are now booking orders for the season of 1922. Brown and White Leghorns, Rhode Island Reds, Barred Rocks and Anconas. Safe arrival and satisfaction guaranteed. E. W. Ohlen, Campbell, California.

Buy Electric Hatched Chicks. They are stronger and easier to raise. We are now booking orders for 1922 delivery. Satisfaction guaranteed. Order early. Lightning Hatchery, 383 Alhambra Ave., Seabright, California.

Pure-Bred Buff Leghorn Cockerels, sired by a F. S. Smith cockerel. Range raised, healthy, vigorous birds. Mrs. Wm. Mullen, Kneeland, Humboldt County, California.

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Wanted — Commercial orchard pruning. Work guaranteed. For rates address W. I. SCIBIRD, 2212 Nicholson Avenue, Monterey Park, California. Phone Alhambra 656W.

Wanted—Position as manager or working foreman on live stock or general farming ranch. Pure bred stock preferred. Can handle any proposition no matter how large. Best of references. Married. Address Wm. Cox, Box 546, Dixon, Calif.

Tree Planting—Experienced in staking for Orchard planting and setting all kinds of trees, especially hill side contouring. Work either by contract or by the day. Satisfaction guaranteed. Box 52, Santa Ana, California.

Wanted—Established California concern wants men, with rigs preferred, to represent it. Good pay. Can use local agents working during spare time also. Address J. H. Yetter, 317 Central Ave., Los Angeles.

Wanted—A competent party to take charge of a 50 acre Walnut and Peach Orchard to be planted during this winter on shares. Apply A. Grunauer, Tracy, California.

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Cash Buyers want Western farms. Will deal with owners only. Write R. A. McNown, 370 Wilkinson Bldg., Omaha, Neb.

We Will Buy your Calla Lily roots. If you have 100 or more, write us. Sevin-Vincent Co., 512 Washington St., San Francisco, California.

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For Sale—My ranch at Minneola Station on main Santa Fe Rd., near Daggett, California—320 acres valley land, fenced, ditched to every quarter, 16 inch well 220 ft. deep, Layne & Bowler pump, Western gas engine, pumping 100 to 120 inches excellent water, 15 acres in alfalfa and orchard, 40 acres more leveled and checked, good house, barn, corrals. Soil, sandy loam, good for alfalfa, milo, melons, fruit. Excellent for turkeys, hogs, etc. Price $100 per acre, easy terms. Will sell 80 or 160 acres with improvements at $150 per acre. Take some exchange near Los Angeles. Might give lease, long time. S. W. Odell, 524 Van Nuys Building, Los Angeles.

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Sutter Basin is ready for "Go-Getters." It is a practical farming project in crops today. Deep, rich soil with irrigation and drainage system, river and rail transportation. In the heart of the Sacramento Valley. Very liberal terms to men who know how and will work. Write today. Sutter Basin Company, California Fruit Building, Sacramento.

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DUROC-JERSEYS

Weanling Boars and Gilts by Pathfinder Wonder (Great Wonder I Am ex an 800 lb. Pathfinder sow) for $10 each. Bred sows and gilts. Derryfield Farm, Capital National Bank Bldg., Sacramento, California.

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Boyana Big Type Durocs — Breeding stock, priced right for sale. Inquiries invited. Satisfaction guaranteed. J. Boyd Harrold, Dixon, California.

Big Type Durocs—Better Durocs at right prices. Harvey M. Berglund, Dixon, California.

Winsor Ranch Durocs—The best of stock at reasonable prices. BONITA, CALIFORNIA.

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Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Calac Orchards, Martinez, California.

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Big Type Poland China open and bred gilts, young and service boars and young pigs. Your letter expressing your wants will bring a quick reply. California Swine Corporation, H. A. Patten, Manager, Route 2, Box 38, Escalon, California.

Big Boned Poland Chinas—Bred gilts and young boars priced to sell at once. Young stock, either sex, for sale at all times. Bassett Bros., Hanford, California.

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For Sale — Rebuilt windmills, tanks, pumps, cylinders. Why pay more? Make galvanized tanks, 400 gal., $16.25; 600, $26.25; 1,000, $36.25; 2,000, $48.25. New irrigating pipe, all sizes, for less. Why pay more? Demmitt Co., office 120 N. Main, L. A. Phone 15191.

For Sale or Trade—Model W Cletrac with practically new manganese tracks, motor lately overhauled, and tractor in good running order. What have you to offer? Also have for sale or trade Ann Arbor Hay baler. Address Box 427, Hemet, California.

For Sale Reasonable—1 Holt 75—Schmeiser Leveler—2 Heavy Davis Disc Plows—Trap Wagon—Holt 18—8 ft. Double Disc Harrow—1 Five Disc Plow—Case Thresher 18x36. All in good condition. Clarence E. Newman, Chowchilla.

For Sale—Pumping Equipment. New and complete No. 38 Pomona Pump Head, 320 feet column pipe, rods and cylinder, 70 feet 14 inch 6 ply belt, 40 h. p. G. E. motor. Address J. & R. Well Company, San Dimas, Calif.

For Sale at Bargain Prices—One 750 gal. heavy steel oil tank and wagon; one six foot land leveler; one International feed grinder; one four-gang Stockton plow. Drew Carriage Co., Ontario, Cal.

For Sale—One C. L. Best 12-25 Tractor, in fine shape. Might take as part pay span of good mules or horses. Terms to responsible party. Address Box 279, Sawtelle, California.

For Sale—Pomona pump, 28 head; 30 Holt Tractor, Sanders Plow, Disk Cultivator. Clarence Wagner, Terra Bella, California.

RABBITS

Pedigreed Flemish Giants — No fancy prices. Maud Beeching, 1578 W. 46th St., Los Angeles.

SEEDS AND PLANTS

Nixon's Mountain Grown Plants Are Better. Altitude 3500 feet. Free from disease; strong, hardy plants for late November and December delivery. Progressive everbearing crop this year May to late October and the Banner great California market strawberry $1.75 per hundred, $15.00 per thousand; supply limited. Address John Nixon Fruit Farm, Sisson, California.

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For Sale — Alicante-Bouchet, Malaga, Thompson Seedless, Zinfandel and Emperor rooted vines. These vines are guaranteed A No. 1, true to name; certified and from clean producing vines. We are also booking orders for cuttings. CHAPMAN & SON, Modesto, Calif. P. O. Box 906; phone 663.

Sweet Clover Seed for Sale—Buy direct from the producer and save money. Fine clean seed 15c per lb., cheaper rates on 100 lb. lots. Order early for fall seeding. Write for samples. Address George Forest, Standish, California.

Raspberry Snell Has It. The wonderful Giant everbearing Red Raspberry La-France. Many of the berries are one inch in diameter, delicious flavor. Order your plants now from Ralph L. Snell, Mountain View, California.

500,000 No. 1 Rootings—Thompson, Malaga, Emperor, Muscat, Sultana and Carnichon (Wine Grapes) and cuttings—also wine grape cuttings. Get our prices before buying. Box 501, Fowler, California.

McNeely's Hulless Barley — Propagated and grown at Alpaugh, Cal. The kind that brings you big returns. Any amount you want. Chas. McNeely. Alpaugh, California.

D. Lotus Good Seed, direct from the Methodist Missions in China. MANCHURIAN STOCK for Japanese persimmons. Fred. W. Kelsey, Route 1, Box 491, El Monte, California.

Strawberries Six Months in the year. Plant Everbearers, Superb, Progressive; $2.00 hundred. EVERBEARING RASPBERRIES six $1.00. Inspected. Fred Leissler, Route 6, Seattle, Washington.

Wagner's Giant Winter Rhubarb, 1 year old, per dozen 50 cents; 1 year old, per hundred $3.00; 2 year old, per dozen $1.00; 2 year old, per hundred $7.00. Currier Bulb Co., Santa Cruz, California.

Cory Thornless Blackberry—Extra large, well rooted plants now ready. You get the genuine from the Pioneer Grower. Wm. Mortenson, Route 1, Lodi, California.

Grape Vines—20,000 Thompson's only, 10,000 Cory's Thornless Blackberry. Write or call. We can interest you. Sylvan Nurseries, Lincoln Highway, Roseville, Calif.

Cory's Thornless Blackberry Tips, extra fancy, 15c each or rates by the thousand. Corner Inglewood Ave. and Arborvitae, Inglewood, California. C. C. Bryson.

For Sale—Brandywine Strawberry Plants, fifty cents per hundred; Banner, one dollar, here. E. A. King, West Fourth St., Riverside, Calif.

Cory Thornless Blackberry — Earliest, largest and best. Illustrated circular. Write Chas. E. Mortenson, Lodi, California.

Cory Thornless Blackberry Plants, shipped from Cory Mountain Pass Ranch. 10, $2.00; 25, $4.00. G. S. Wills, Jamestown, California.

Alfalfa Seed — Certified Hairy Peruvian, Smooth Peruvian, Common. Write for samples and prices. Delta Seed & Feed Co., Yuma, Arizona.

Certified Strawberry Plants — Improved New Oregon, Gold Dollar and Progressive Everbearng. G. H. Mitchell, Canby, Oregon.

Chrysanthemum Plants. Orders booked for April delivery. One dozen, assorted large exhibition varieties, all different, $1.50. Edward Bowers, Rialto, California.

Plants for Sale—Cabbage, pansy and rhubarb plants. Write or call. Spanish-American Institute, Gardena, California.

ROOFING MATERIAL

Save Your Roof for 15c a gallon with Asphaltoid. Direct from producer to consumer permits this low price of 15c a gallon. The finest roofing and preservative paint under sun. This is a natural product—why pay more for acid treated asphalt that eats your roof? Mail orders, barrel lots promptly shipped. Equally good for shingle, paper or metal roofs. Woolner Oil Co., 4th and Commonwealth, Los Angeles.

Roofing Paper—
Firsts, complete with nails and cement.
1-Ply $1.25; 2-Ply $1.60; 3-Ply $2.20.
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Prompt Deliveries on Mail Orders.
ANGELUS ROOFING & PAPER CO.
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Sheep—Improve Your Flock with a Reg. Shropshire Ram. This stock was blue ribbon winners in Southern California and Eastern State Fairs. Willis A. Barber, Station T, Rose Hill, Los Angeles.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

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Powerene—County Rights Free. It equals gasoline at 5c. Adds power, prevents carbon, saves repairs. Guaranteed safe and harmless. To introduce, the equivalent of 20 gallons prepaid $1, if ordered now. P. Barnes, E Street, Cazadero, California.

Hemstitching and Picoting Attachment; fits all sewing machines. Price $2.00. Checks 10c extra. Light's Mail Order House, Box 127, Birmingham, Ala.

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GIANT BRONZE TURKEYS

Large turkeys can be raised at practically same cost as small ones. It is in the strain. One of our toms will give you 5 more pounds of meat to market in all his get the first year, besides vitality and beauty.

GOLD NUGGET STRAIN
J. Will Blackman, Originator

Won at California's two greatest shows, Gold Special Sweepstakes for best turkeys, California State Fair, 1920, against 66 of the State's best turkeys, also every 1st, 2nd and 3rd prize and Gold Special Sweepstakes at Los Angeles Livestock Show of 1920.

AN UNEQUALED RECORD

Toms and hens for sale; a few high class exhibition toms to win in any show or head any flock. Book orders early for December and January shipment, as each year we are sold out.
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BLACKMAN & MUMFORD
607 East Third St., Los Angeles, Cal.

Turkeys — Purebred Giant Bronze, male and female stock, sired by our two famous toms, "Goldbank Boy," champion Giant Bronze first prize winning cockerel at Madison Square Garden Show, New York, January, 1921, and "Copper King Jr.," a 36-lb. yearling son of "Copper King V.," the 38-lb. yearling that was grand champion at Madison Square Garden Show, January, 1919, both bred to choice 20-lb. hens. Eggs in season. Address Bronze King Mountain Farm, Calistoga, Cal.

The Wonder Turkey (Copper King V Strain) Giant Bronze. Do not buy inferior stock—it doesn't pay. Fertility of our eggs this season something wonderful—100 poults from 101 eggs—CAN YOU BEAT THAT? April hens and toms for sale—going fast. If you wish to be one of the lucky ones ORDER NOW. Livermore Turkey Farm, Box 627, Livermore, California. K. A. Flynn, Mgr.

It's no wonder so many poultry raisers make a failure of the business. Without any knowledge of raising poultry people will branch out expecting to make a success. By putting in practice the valuable contents of POULTRY FOR PROFIT, $1.00 postpaid, success is assured in the poultry business. Cultivator Publishing Company, Los Angeles, California.

Mammoth White Holland Turkeys—Choice hens and toms from our famous breed of large vigorous turkeys, improved by Eastern stock. Earl V. Smith, Loma Vista Ranch, Willows, California.

Pure Bred Bronze Young Toms, $15.00; young hens, $10.00. Pure bred S. C. Buff Orpington cocks, $5.00 each. Mrs. M. L. Trewhitt, Route B, Box 47, Hanford, California.

For Sale—Wild Turkeys—Best, cheapest, most certain and indispensable producers. Cash deposit secures stock or eggs. Blanche Dresser, Tulare, California. Route C, Box 194.

Mammoth Bronze Turkeys—Choice toms for sale. Prizes taken at Riverside Fair, 1921. E. H. Varley, Hemet, California.

Bourbon Red Turkeys, Buff Orpingtons. The Ferris Ranch, Reservoir Street, Pomona, California.

Mammoth Bronze Turkeys—Toms, $15; hens, $10. Mrs. Ida Philbrick, Route C, Box 289, Modesto, California.

Thoroughbred White Holland Turkey Toms $12. Hens three for $20. Pause Pheasantry, Fairoaks, California.

CATTLE

Bargain in a Four Months Ayrshire Bull Calf out of "Steybrae Lily" No. 60267 who is by "Lessnessock Golden Love" No. 20053. First prize winning bull Canada, 1918, and brother to sire of $8100 heifer at 2nd annual sale. Sire is "Tam o' Shanter" No. 24635, 1st in his class L. A. Stock Show, 1920, and out of an eight gallon cow. This animal is well grown and an excellent individual. Price $100. Papers furnished. Come see him. R. M. Cartwright, Gardena, California.

For Sale—Registered Guernseys, $100 each. Bull 5 years old, three young cows, all milking, two from imported parents. Free from Tuberculosis but not free from abortion. First check takes them. Address R. B., 2206 21st Avenue, Oakland, California. Ernest L. Bishop.

Guernseys — Grape Wild Farms — Berkshires—Young bulls, from calf age up to 16 months old, of May Rose breeding and out of A. R. cows. Bred sows and gilts, service boars and pigs of both sexes for sale. Grape Wild Farms, Escalon, California. A. B. Humphrey, Proprietor.

Berylwood Stock Farm—Breeders of registered Holstein cattle and Duroc-Jersey swine. Every cow an A. R. O. and T. B. tested. Bulls and females for sale. J. W. Snodgrass, Hueneme, California.

Shorthorns bred for range purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome; information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Polled Herefords and Durocs — Diablo Stock Farm, G. W. Emmons, Prop., Danville, California.

Some Choice Registered Holstein heifers and bulls of serviceable age for sale. J. W. Scudder, Escalon, California.

Winsor Ranch Jerseys—Bull calves with production behind them, at reasonable prices. BONITA, CALIFORNIA.

TREES

For Sale—Placentia Perfection and Eureka grafted walnut trees. Prices 1-3 off from last season. Our stock is grafted from choice grafted orchards. See our stock before buying. The Walnut Nursery, Whittier, California. Phone 6294.

For Sale — Walnut Trees — Erhardt and Placentia grafted on Northern Black Root—4 to 6 feet high, $1.00; 6 to 8, $1.25; 8 to 10, $1.50; 12-14, $2.00; Erhardt, 8-10, $2.25; 10-12, $2.50. Borley and Wilkins, Puente, California. Phone 162.

For Sale—Grafted walnut trees, also citrus and deciduous trees. Order now for 1922 delivery. Get my prices. Ketscher's Nursery, 1101 E. 4th Street, Santa Ana, California. Phone 572-W

Hachiya Persimmon Trees—Best of all persimmons. Also rhubarb plants for home and field. Fred. W. Kelsey, S. Rosemead Avenue, El Monte, California.

Reliable Trees and grapevines at a fair price. Write us for price list. We ship on approval. J. F. Miller & Sons, Healdsburg, Cal.

Trees—Tuscan Kling peaches, Sugar and French prunes, five to eight foot trees $35.00 per hundred. Johnson's Nurseries. Almaden Road, Los Gatos, California.

For Sale—Grafted Walnut Trees, Placentia Perfection and Eureka. These are well rooted and first class in every way. Rivera, California, C. E. Bullock.

For Sale — ATHEL OR EVERGREEN TAMARIX. Best tree for immediate windbreak and shade in hot dry localities. Leonhardt Swingle, Indio, Cal.

For Sale—Walnut Trees. Placentia Perfection and Eureka, grafted on black root. La Puente Walnut Nursery, Puente, California. Phone 103.

Florida Sour Orange Seedlings. Nursery, 100 Ventura Street, Altadena. Address, Paul B. Magee, Mecca, California.

For Sale—Fruit Trees, grapevines, unrooted grape cuttings, etc. Write for price list. Burke's Nursery, Lodi, Cal.

For Sale—One and two year old Wonderful Pomegranate trees. fine stock. J. W. Irwin, Lindsay, California.

For Sale—California Black Walnut seedlings, 1-3 feet. Ripon Nursery Company, French Camp, California.

Bishop's Nursery, Highland, California, will be pleased to figure on your order for trees, plants, or seeds.

Citrus Nurseries, Murphy Oil Company, East Whittier California. Selected stock for sale; inspection invited.

Quality Trees, grape vines, camelia, etc. Cash Nursery, Sebastopol, California.

PHEASANTS

Beautiful Chinese Ringnecked Pheasants $12 per pair. Pause Pheasantry, Fairoaks, California.

GEESE

Geese—Now is the time to order McNeely's Mammoth Geese, $5.00 each, as many as you want Chas. McNeely, Alpaugh, California.

GOATS

For Sale—Highest class pure bred and grade Toggenbergs. Milk goats. La Corona Goatery, El Monte, California.

THE CALIFORNIA PLAN

(Continued from Page 613.)

purchases, and decisive steps were taken in both cases to prevent a repetition on the part of the same buyers.

"In our sales of registered cattle it has been necessary to appoint a committee, as provided in clause 21 of our sale contract, on only two occasions. In one case the decision was accepted by both buyer and seller, and in the other was accepted by the buyer and rejected by the seller. The case was then taken to court where a decision was rendered upholding the decision made by the committee appointed under the terms of our sale contract.

"There has never in a single sale, or on a single animal, been a price that was not an actual cash transaction, with the exception of two defaulting buyers whose purchases were below the general average.

"In reviewing four years of sales it is with a great deal of satisfaction that we note that despite the very extensive promotion work carried on in connection with our sales, and despite the fact that real service and not parsimonious handling of sales has been our constant objective, this plan has provided for the breeders of California the lowest selling costs in effect anywhere in America.

"We find that the average commissions paid by breeders, including all charges for withdrawal of animals cataloged but not offered owing to sickness or injury, has been as follows: Holsteins, 8.87 per cent; Herefords, 8.5 per cent; Shorthorns, 9.1 per cent; Jerseys, 11.7 per cent. The relatively high percentages in the case of both Jerseys and Shorthorns represent an abnormal average that would not be present covering a longer period of time, as in both breeds we sold one large herd at a low average."

Next week an attempt will be made to show how far the practical operation of the California plan has succeeded in solving the problem of selling registered livestock at public auction.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Feeding Hogs Acorns

Is there any danger of brood sows aborting if turned out on acorns? Would acorns and grass pasture be sufficient for mature sows after breeding?—Subscriber, Ojai.

We see no reason why they should abort while eating acorns. We would not advise making the change abruptly. It is always best in making a change of feed to decrease what they have been getting gradually while increasing the new feed until they get used to it. If there are plenty of acorns, that with grass will surely be enough. In many places that is all that is given to fatten hogs.

Frost Nipped Alfalfa

Have been cutting green alfalfa for hogs. Not long ago a calf got some that had been frost nipped and died. Is there any danger in giving hogs alfalfa that has been touched by frost before cutting or alfalfa that has pretty well gone to seed? Would it be better to cure such alfalfa or all right to feed it green?—Subscriber, Ojai.

Frosted alfalfa is dangerous for feed while the frost is on because taken into the stomach ice cold will cause indigestion. Fresh cut green alfalfa is good but if allowed to wilt or partly cure will be more thoroughly masticated and less liable to cause indigestion. Hogs will probably like it better fresh and green but if you expect them to grow and fatten they should have grain with it. The ripe alfalfa would be better fed soon after cutting.

Injured Udder

Our cow seems in good health and eats well but has a lump in each of two teats. We turned her loose with a long chain with a block attached to keep her from going through the fence, and after that we noticed the lumps. She gives bloody milk from one of the teats. Is the milk from the others good to use?—Subscriber, Lathrop.

She probably injured the udder. Bathe it with warm water and when through bathing wipe it dry. The milk in the other quarters is probably all right. See "Congested Udder" in answer to another question in this department.

Worms in Hogs

Will you kindly tell me the formula for the use of concentrated lye in destroying intestinal and stomach worms in hogs?—Subscriber, Ensenada, Mexico.

We would not advise using concentrated lye for stomach and intestinal worms in hogs. If you wish to use something along that line give a dessertspoon of wood ashes in the feed once a day for a short time. A still better remedy would be a teaspoon of powdered areca nut mixed in a pint or more of sweet milk every morning for a week to each animal.

Congested Udder

What is wrong with our cow? The milk is stringy and mixed with blood. We feed both dry and green alfalfa hay and about three quarts of rolled barley per day. About two weeks ago she was off her feed but eats all right now. She has been fresh about six months.—Subscriber, Terra Bella.

It may be due to an injury, but probably to rich feed or exposure to the cold weather. Bathe the udder with warm water and wipe it dry. Also give a handful of epsom salts in the feed once a day for a week or ten days.

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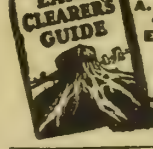

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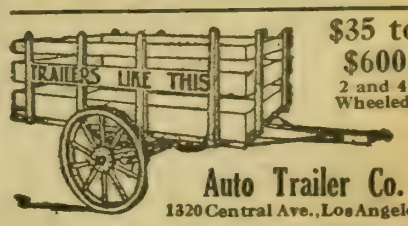

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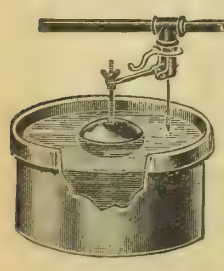

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Edible Fish Meal vs. Fertilizer

IN LOOKING over a number of European publications dealing with poultry and hog feeding, we find evidence of an increased interest in the feeding value of fish meal. The feeders over there have evidently passed through an experience similar to that confronting the poultry and swine feeders in the United States. We find a marked distinction made between fish fertilizer and fish meal for poultry and animal nutrition. During the war period so called "organics," that is, protein derived from animal sources, was so scarce and high priced that manufacturers seemed to consider there was not going to be any hereafter. As a result much of the product made the last few years, owing to high moisture content and improper curing, was not suited for poultry and livestock feeding. Unfortunately this has resulted in a degree of unpopularity surrounding the use of fish meal which is not justified in so far as a high grade product is concerned.

Much has been written by scientists, and men who think themselves such, as to effect of vitamines in feeding material. Possibly the one of greatest importance is known as "Fat Soluble A." As might be surmised it is found in certain fats, not in every animal and vegetable fat, but only in a few, and one of the peculiar characteristics is the fact that these necessary fats, wherever found, are usually of an unstable nature, that is, they tend to lose their freshness readily. This vitamine under discussion controls the normal growth and development of the young. It abounds in butter, yolk of egg, the internal fat of fish and animals, and to some extent in the fat of the rice kernel. It is reported that thousands of children in the famine stricken district of Europe had their eyesight saved by small doses of cod liver oil which was furnished from the United States by the relief organizations financed in this country.

From these facts it will readily be seen that a supply of fish meal properly prepared is of great importance. The wonderful improvement made by stunted pigs when fed the proper kind of fish meal fully justifies all the claims made by investigators experimenting with smaller animals. It goes without saying that butter and eggs are too expensive for ordinary feeding purposes. However, there is no reason why a high grade fish meal should not be available to complete a properly balanced ration. Fats deposited on the outer portion of animals appear not to contain any "Fat Soluble A." It is only the internal fat.

Fish meal suitable for feeding purposes must first of all be prepared from raw fish which is perfectly fresh and free from taint. It should be dried without the use of excessive heat. In fact, light color is one of the characteristics which usually indicates a good grade of fish meal. However, the presence of acid or salt is not indicated by the color. A very dark fish meal is usually either overheated in drying or has been made from spoiled fish and as a result contains a very high fatty acid content. Properly prepared fish meal is unsurpassed for the feeding of swine, especially growing pigs. It is also very valuable as a poultry feed, and fed in the proper proportion will not taint eggs or flesh of the chickens.

Under ordinary circumstances California has a large supply of raw material at her back door, and it would therefore be to the advantage of consumers to encourage the production of high grade fish meal as a means of reducing the cost of securing the proper percentage of animal protein.

Dehydrating Plant at Los Angeles Harbor Where Tons of Waste Fish Are Converted Into Poultry and Stock Feed

The California Way

By Jean A. Koethen

WHICH is best, the California method of feeding, or the northern method, or the eastern method, or is each one best in its place? To how great an extent should climate influence method? How far should the amount of labor involved in a certain method be allowed to determine its efficiency? Is it possible that we of the great Southwest are too willing to save ourselves labor and bother? These and other questions are suggested by the following letter from a San Diego County subscriber:

"We have recently moved here from western Washington and find quite a difference in feeding methods. Therefore I would be very glad if you would discuss to whatever extent your space permits the advantages of the California system. Our ration and method of feeding are as follows:

"5:30 a. m.; sprouted barley, 1/16 to 1/4 inch sprouts, 20 pounds dry weight to 300 pullets and 50 hens.

"3 p. m.; 25 pounds wheat and cracked corn, 2 parts wheat to 1 of corn.

"5 p. m.; all the wet mash they will eat—sour milk used for mixing when available, which is about two-thirds of the time.

"5:15 to 5:30; cut green alfalfa, all they will eat.

"Surelay, oyster shell, grit and charcoal before them all the time.

"About twice a week I feed feterita in head for 3 p. m. feeding. Prefer oats to barley, but it is too expensive.

"It is my observation that most California chicken men do not feed wet or crumbly mash, neither do they bother to sprout grain. Some keep grain before chickens all the time in hoppers. Do you approve of this?

"From 150 seven months pullets and 150 six months pullets and 50 old hens we are now getting 96 to 100 eggs daily. This seems too low production. We fed no Surelay till pullets were six months old. Do you approve of that?"

Any suggestions or comments I may make must be taken with a grain of salt in view of the fact that the things we are accustomed to are nine times out of ten the things we approve. Let us consider first the debatable points in the above schedule:

The Philosophy of Greens

The place of green feed in a bill of fare is to supply not egg material, but vitamines which are essential to health and vitality. The hen on range, which is the natural condition of all hens, picks a little green, then a seed or a bug, then another bit of green. The more nearly the artificial feeding of greens can approximate the natural feeding the better for the hen, and so California poultrymen, acting on the advice of the poultry division of our own college of agriculture, feed their greens, when they can conveniently, about the middle of the forenoon, some at 9 o'clock, some at 10, in such quantity and containers that the birds may have some green before them in fairly fresh condition the rest of the day. The Southern California contest houses at Pomona are equipped with wire containers which are placed under the droppings boards and in the draft from the windows near the floor, so that they may be as fresh as possible all day, and a similar plan is followed by experienced poultry people.

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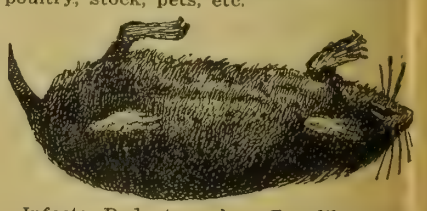

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Here's how! Send $1.00 today (currency, M. O., Check, etc.) and we will ship you by return mail, postpaid, two regular, full sized (double strength) $1.00 bottles of Imperial Virus. Use one to rid your place of these pests, and sell the other to a neighbor, thus getting yours free. Special inducements to represent us.

If more convenient, send no money, just your name and address to Imperial Laboratories, Dept. 723, 2110 Grand Ave., Kansas City, Mo. Pay postman $1.00 and few cents postage when package containing two bottles arrive. Guaranteed to do the work to your entire satisfaction within 30 days, or your $1.00 will be cheerfully refunded.

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The hen is then free to nibble at mash or greens or shell or grit as she pleases.

Just what could be gained by feeding greens the last thing at night is hard to see. In Washington, which is a very green country, there may not be the same necessity for providing a constant supply of green that there is in this land of little rain, but in California greens are the sine qua non of poultry feeding.

Grain at Night

There are two reasons for feeding the scratch grain at night or shortly before bedtime. First, it is generally believed that, in order to produce satisfactorily, hens should go to bed with their crops full. They prefer grain to mash, and it is more slowly digested, therefore the logical time for grain feeding is when the hens have the whole night before them with nothing to do but digest their supper. They will fill their crops with grain, and all night long their digestive apparatus is busy turning protein and carbohydrates into eggs and energy. The hen that has her grain too early in the day will find herself with an empty crop long before morning.

Second, the custom of California feeders is to give so much grain at night that there will be a small amount left for morning. This may be a lazy man's reason. Of course the mash hoppers are before the hens, and they might worry along with mash alone till the master appears, but it seems to be a good thing for them to scratch a little in the early morning, and they have a little more enthusiasm for grain than for mash. There may be some California poultry people who get up at 5:30 to feed their hens. If there are, they are probably tenderfeet, for no real dyed-in-the-wool Californian would do such a thing when he could just as well prepare their breakfast the night before.

Hopper Feeding

How about feeding grain in hoppers where the hens may help themselves at all times? Some have tried this plan and are satisfied with it. A movement is now on foot, promoted by certain feed men and backed, I understand, by some experiment station (whether our own or not I am unable to say), to do away with the feeding of whole grain and keep before the hens a mixture of ground and cracked grain. Those who have tried this claim that it gives as good results as the old way of feeding. If it proves successful we shall no doubt hear more of it. As far as my own observation goes it makes little difference whether the grain is thrown on the ground or kept before the hens in hoppers or mixed with the mash. They will eat what they want and leave what they do not want. Throwing the scratch grain in deep litter serves the additional purpose of encouraging exercise, which is always a good thing, but straw has been so expensive of late that comparatively few poultrymen use it or at least enough of it to be described as "deep litter."

There is a good deal to be learned yet about feeding hens, and we Californians are most anxious to prove all things and hold fast what is good as well as what is the least trouble.

Wet Mash

Is it true that most California chicken men do not feed crumbly mash? Very few feed it all the time, but I know a great many feed it some of the time. Some feed it to the pullets in the fall when high production is especially desired; others feed it to their molting hens but at no other time. One very successful poultryman gives his pullets grain an hour before sunset, and then just as they are ready to go to roost places before them the wet mash moistened with sour milk. By this extra meal he claims to be able to avoid the fall molt which checks the production of so many early pullets. The majority, I believe, of those who use the moist mash, feed it somewhere from noon to 2 o'clock and give the heavy grain feed at night.

Sprouted Grain

A few years ago almost every poultryman used sprouted grain a part of the time; now I find very few who bother to do it. I used to do it myself, but I gave it up. Why? Well, it is a good deal of trouble, and nobody seems able to prove that the grain is more digestible or more nutritious sprouted than not sprouted, though it is more palatable. It does not take the place of green feed, and at certain seasons it is very difficult to keep it from becoming moldy. Planting the barley and cutting it for the hens during the winter season seems to serve every purpose that sprouting it in trays does and is more economical of labor. Back east, where no green grows out of doors in winter, sprouted barley or oats are a fair substitute. Here where barley grows in the ground from October to May, why should we sprout it in boxes? If I wanted sprouted grain I would bury it in my chicken yards, water it well and let the hens have the fun of digging it up. I have often done this, and it gives a real zest to life in the poultry yard.

Laying Mash for Pullets

When is the best time to begin feeding laying mash? I have met poultrymen who began feeding it to their chicks, diluted half and half with bran, as early as the third week. Others set it before them when the pullets are separated from the cockerels, at about two months, and nearly every one puts the pullets on it by four or four and a half months. The poultry division recommends putting the pullets on the laying mash at about four or four and a half months and then changing to a maintenance mash of bran and bone meal when the first eggs are seen. This is to prevent too precocious production and postpone laying till the birds are well matured. Other experts advise changing when the first eggs are seen from the laying mash to a ration containing more corn meal and cracked corn, to give the pullet some surplus fat, and then changing back to the laying mash when production can no longer be delayed.

A good all-around method of feeding is that followed by the California Egg Laying Contest at Santa Cruz, and I believe by that at Pomona. Dry mash is before the hens at all times. The scratch mixture, which consists of equal parts by weight of wheat, cracked corn, whole barley and milo, is fed an hour before dusk. At noon a small amount of dry mash is moistened (with milk if convenient) and fed in troughs. About 2 o'clock sprouted oats are fed. Chopped green feed is before the hens all the time in hoppers. The amount of grain fed, including the dry weight of the sprouted oats, is 10 to 12 pounds for 100 hens daily. This is a typical California ration and has given such satisfactory results that it may safely be followed by anyone who desires to improve his method of feeding.

Poultry Queries

Conducted by Jean A. Koethen

White Minorcas

Will you please put me in touch with breeders of first class White Minorcas in California?—Subscriber, Oceanside.

Will some reader who has such stock let it be known? There were no entries of White Minorcas at either the San Fernando or the Riverside fair.

Buttercups

Where can I secure Sicilian Buttercups?—Subscriber, Riverside.

I have mailed you the names of two exhibitors in recent shows. Breeders of this excellent breed would do well to let it be known through the advertising columns of the Cultivator.

Mating Pigeons

What do you mean by "mating pigeons"? I though they hatched male and female.—Subscriber, Alta Loma.

Pigeons are mated just as other birds are mated, only, as they mate in pairs, and are, like some other birds, rather particular about their choice of a mate, it is not always possible to know that they are mated till they have produced young.

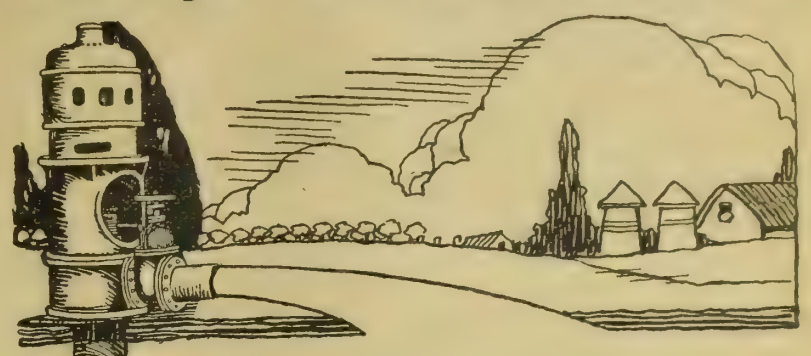
Sticktights

My chickens are infested by an insect that gathers in small bunches, generally around the eyes or under the bill. They jump like a flea and under a glass resemble one. The small chickens die from the attacks of these insects which stick their heads into the flesh around the eyes.—Subscriber, Vacaville.

These are not ticks, as you suggest, but sticktight fleas. You can kill them on the chickens by anointing several times with carbolated vaseline, but unless the house is thoroughly cleansed and all droppings and old scratching litter removed, they will soon be on the birds again. You can kill those in the soil by spading and wetting thoroughly with hot salt water or sprinkling with lime.

Planted too much of one vegetable and not enough of another in your garden last season? Might plan it on paper some of these days.

Crop insurance



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1000 Eggs In Every Hen

If You Keep Chickens, Cut This Out—Four to Seven Eggs a Week per Hen Through Cold Winter Season. With Eggs at a Dollar a Dozen, Means $5.00 Profit per Hen in Next Six Months. Amazing Poultry Secrets Revealed by

America's Foremost Poultry Expert

This is an offer no reader of this paper who keeps chickens can afford to ignore. We will tell you why.

Henry Trafford, Famous Poultry Expert and Breeder, for nearly eighteen years Editor of "Poultry Success," has developed a new and remarkable system of rearing, breeding and feeding chickens for heavy egg production that seems certain to revolutionize the poultry industry and give five eggs or more for every egg produced today. This plan or system is explained in Mr. Trafford's "1,000 Egg Hen," a free copy of which will be sent to any person who keeps six hens or more.

Poultry keepers, following Mr. Trafford's directions, learn how to start young pullets laying early; make old hens moult quickly and resume heavy laying during entire winter season. Most any hen will lay in spring when eggs are cheap. Mr. Trafford tells how hens lay four to seven eggs a week during coldest winter days when eggs sell at a dollar a dozen or more. His system shows how any breeder, with ordinary care, may get 1,000 eggs or more from nearly every hen in four to six years' time at a net profit of $25.00.

There is big money to be made with chickens this winter by the man or woman who gets the eggs. The time to get the hens ready for heavy winter laying is now. Mr. Trafford's "1,000 Egg Hen" system tells how and arrangements have been made whereby any reader of this paper may receive one copy absolutely free by using the Coupon below. Send no money, but cut out the Coupon and mail it with your name and address to Henry Trafford, 243E Court Bldg., Binghamton, N. Y., and the story of the 1,000 Egg Hen will be sent you by return mail.

Los Angeles, Cal. Dec. 10, 1921
Cultivator.

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This Coupon entitles holder, provided he keeps six hens or more, to one free copy of Mr. Trafford's "1,000 Egg Hen." Write name and address plainly and enclose in envelope with this coupon. Address Henry Trafford, 243E Court Bldg., Binghamton, N. Y.

Los Angeles Markets

Los Angeles, December 7, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price, 46 cents.

Dec.	1	2	3	5	6	7
'21	46	46	....	46	....	46

CHEESE

Brokers' prices:
California flats, 21@23.

EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 52; case count, 51; pullets, 49; pewee pullets, 35.

Dec.	1	2	3	5	6	7
'21	55	51	....	52	....	52

POULTRY

Price to producers: Hens, 25; colored, 29; broilers, 40; roasters, 27; old roosters, 16; fryers, 32; ducks, old, 20; ducklings, Pekin, 3½ up, 28; others, 28; geese, 28; turkeys, live, young tom, 34; dr., 40; old, live, 29; dr., 35; hens, live, 34; dr., 40; small hen and tom, 15; squabs, 55@60.
Belgian hares, 14@19; old, 8.

LIVESTOCK

Los Angeles, Dec. 6.—Weighed and delivered off cars without food or water:
Hogs (hard grain fed), 125 to 175 lbs., 8.00; 175 to 225 lbs., 8.50.
Cattle (on foot, gross weight): Steers, good, 6.50; medium, 6.00; cows, good, 5.00; medium, 4.50; bulls and stags, 3.00; calves, 125 to 150 lbs., 8.00; 150 to 225 lbs., 7.00.
Sheep: Ewes, 3.50@4.00; lambs, 7.00@7.50.

HIDES AND PELTS

Quotations furnished by California Hide Corporation for stock delivered to their warehouse at 1960 Santa Fe avenue.
Green salted hides—No. 1 steers, 7½ per lb.; No. 1 cows, 6½ per lb.; No. 1 bulls, 5½ per lb.; No. 2 hides, 1½ less per lb.; grubby hides, 1½ less per lb.; kosher hides, 1 less per lb.. glue hides, 1 per lb.; No. 1 horse hides, over 50 lbs., 1.75 each; No. 1 horse hides, 40 to 50 lbs., 1.25 each; No. 1 horse hides, 30 to 40 lbs., 75 each.
Green hides—No. 1 steers, 6½ per lb.; No. 1 cows, 5½ per lb.; No. 1 bulls, 4½ per lb.; No. 2 hides, 1½ less per lb.; kosher hides, 1 less per lb.
Calfskins and kipskins—No. 1 calfskins, under 15 lbs., 12½ per lb.; No. 2 calfskins, under 15 lbs., 9 per lb.; No. 1 kips, 15 to 25 lbs., 10 per lb.; No. 2 kips, 15 to 25 lbs., 8 per lb.; kosher skins, 1 less per lb.; glues, 1 per lb.; slunks, 20@40 each.
Dry flint hides—No. 1 hides, 16 lbs. and up, 10½ per lb.; No. 1 kips, 6 to 16 lbs., 11 per lb.; No. 1 calfskins, under 6 lbs., 11 per lb.; No. 2 hides and skins, 2 less per lb.; glue hides and skins, 2 per lb.
Pelts—Large, long wool, 50@80 each; medium, 25@50 each; short wool and shearing, 10@25 each.
Goat skins—No. 1 common, 10@50 each; No. 2, 5@10 each; badly damaged and small kids, worthless.
Tallow—No. 1 white and hard, 5 per lb.; No. 2, 4 per lb.; No. 3, dark and greasy, 1@3 per lb.
Wool—According to quality and condition, 6 per lb. and up.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, December 6, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.
Potatoes: Market dull. Lugs, mostly 90@1.00. Burbanks, per cwt., best, 2.50@2.75; few 2.85; poorer low as 2.25. Russets, 2.25; rurals, 2.00@2.10. Sweet potatoes: No. 1, mostly 75@90 lug.
Onions: Demand improving, market firm. Per cwt., White Globes, best cold storage stock, mostly 5.50@5.75; other whites, 5.00; browns, 4.25@4.50; poorer, 3.00@3.50. Per lug, whites, best, 1.50@1.75; poorer, 1.25@1.50; browns, 1.25@1.50; poorer, 1.00.
Garlic: Lb., 8@10.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock, December 6, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.
Artichokes: Fy., 2.00 doz.
Beans: Demand moderate, market firm. Per lb., string, 10@14; limas, market firm, 10@13.
Bunched vegetables: Supplies beets and carrots scarce. Per dozen bunches: Turnips, 35@40; beets and carrots, 55@60; radishes and parsley, 15; spinach, 25; green onions, 12½@15.
Cabbage: Market steady. Per field crate, mostly 2.25@2.50.
Cauliflower: Market steady, 2.25@2.50 per crate for best stock; poorer, 2.00.
Celery: Market firm. Local, per cr., mostly 3.50; poorer, 2.50@3.00.
Cucumbers: Market weaker, wide range in quality. San Diego: Market steady, mostly 2.00@2.25; few 2.50, according to quality.
Eggplant: Lb., 3½.
Lettuce: Demand moderate, market firm. Locals: Field crates, best, 1.00@1.25; poorer, 75@85.
Parsnips: Lug, 70@85.
Peas. Market firm. Lb., fancy, 14@16.
Peppers: Locals: Bells, green, per lug, 1.50@1.75; chili, 1.00@1.25.
Rhubarb: Lug, 75@1.00.
Squash and pumpkins: Market steady, movement good. Banana, 1@1¼ lb.; Hubbard, mostly 1½ lb.; cream squash, 2; pumpkins, 1@1½ lb.
Sweet anise: 60 doz.
Tomatoes: Market firm on good stock. Locals: No. 1, per lug, mostly 2.25@2.50; few 2.75@3.00; poorer, 1.50@2.00.

FRESH FRUITS

Apples: Demand and movement moderate, market steady. Locals: Romes and Winesaps, 4@5; few best Delicious, Yucaipa section, 6@7 lb. Watsonville: Fancy, 3½ and 4 tier Bellefleurs, 1.60@1.75; poorer, 1.50; 4½ tier, 1.45@1.50; B grade, 4 tier, 1.40@1.50. Idahos, Washingtons and Oregons: Jonathans, extra fancy, medium to large size, 2.75@3.15; fancy, 2.60@2.85. Oregons: Spitzenburgs, medium to large, extra fancy, mostly 2.60@2.85; fancy, 2.25@2.65.
Avocados: 50 lb.
Cranberries: Market steady. Massachusetts: Late Howes, 25.00 bbl.; ½ bbls., 12.50@12.75.
Grapes: Demand good, market firm. Per lb.. Malagas, 8@10; fy., 12; Red Emperors, 7@8.
Melons: Casabas, 1@2 lb.
Olives: Ripe, lb., 4@6.
Pears: Anjous, per lb., 8; Winter Nelis, 6; Bartletts, 7@8.
Persimmons: Lb., best, 10@15; others, 7@8.
Pomegranates: Lb., 5@8.

CITRUS FRUITS

Grapefruit: Market steady. Californias, northern: Packed box, 3.25@3.50; small, 2.50@4.00; Imperial Valley, 5.00@5.25. Arizonas: Seedless, 4.50@5.25, according to size and quality.
Lemons: Demand very limited, market weak. Locals: Special pack, mostly 4.00; market pack, 2.50@3.00; loose boxes, 1.00@2.00.
Oranges: Demand moderate, market steady. Navels, special brands, 216s to 126s, 4.75@5.75 fy.; 4.00@5.00 choice; market pack, 3.00@4.50, according to size and quality; culls, field boxes, 2.00@2.50.

HONEY

Honey movement in the past two weeks has been comparatively light and demand has fallen off to some extent. Prices remain practically unchanged and the light supplies on hand are likely to prevent any weakening in the immediate future. Some 1920 sage still remains on hand, but everything else now being shipped is of the 1921 crop. The supply is gradually cleaning up and little honey is expected to be available by January except mixed cars of goods in glass and tin containers and straight cars of honey in two and five pound glass jars. Car lot prices, per pound, f. o. b. loading stations: White sage, 11; light amber sage, 8; light amber alfalfa, 6½@6¾; white orange blossom is nominally 12@12½ per lb., but straight carloads are unavailable except by combining small lot offerings. Beekeepers are being paid 6@6½ per lb. for light amber alfalfa, and there is said to be more business in this grade than in any other California honey. Car lots of Hawaiian honey are quoted f. o. b. San Francisco: White, 6; light amber, 5½; honeydew honey, 4. Both inquiry and movement of Hawaiian stock are reported to be moderate.
Beeswax is practically at a standstill, a few small lots being sold at 20@25 per lb., depending upon purity of the wax and its color. On account of foreign importations eastern demand for California wax is negligible. Many beekeepers have opened up substantial outlets for their supplies through roadside stands, and an increasing quantity of honey is being disposed of in this way each year. The average roadside price for light amber honey is around 50 cents per quart can.

GRAIN AND FEEDS

Grain Exch. price bid Dec. 6:
Barley: 100 ton lots, Dec. del., 1.37.
Milo: 100 ton lots, Dec. del., 1.27.

HAY

Alfalfa Growers of California report:
Movement and offerings by growers light during week and can normally be expected to continue on a reduced scale during the winter months. Stocks in the hands of growers not large. Stocks in the hands of dealers and users smaller than usual.
There were 900 tons of grain and alfalfa hay received on the Los Angeles tracks the week ending December 3, with 170 tons holdover.
Prevailing prices last week, delivered in the vicinity of Los Angeles.

No. 1 dairy alfalfa	22.50
Standard	17.50

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats	20.00@26.00
Barley	16.00@24.00
Alfalfa, Rabbit	24.00@28.00
Alfalfa, No. 1 Dairy	19.00@21.00
Standard	16.00@18.00
Straw	12.00

San Francisco Markets

San Francisco, December 6, 1921.

BUTTER

Extras					45
Nov. 30-Dec.	1	2	3	5	6
'21	44½	44½	....	44	45

CHEESE

Dairy Exchange quotations:

Cal. Flats	22
Cal. Y. A.	31½
Ore. Trips	31
Ore. Y. A.	35

EGGS

Dairy Exchange quotations:

Extra	58
Extra Firsts	44½
Extra Pullets	50
Undersized No. 1	40

Nov. 30-Dec.	1	2	3	5	6
'21	54	52	....	53	58

POULTRY

Wholesale prices are:
Poultry: Young chickens, Leghorns, 1 to 1½ lbs., 37@40 per lb.; above 1½ lbs., 35@37 per lb.; 2 lbs. and up, 26@27; heavy breeds, 26@27 per lb.; staggy roosters, 20@25 per lb.; old roosters, Leghorns, 16 per lb.; heavy breeds, 18 per lb.; hens, Leghorns, large, 25@28 per lb.; small to medium, 24 per lb.; heavy breeds, 28@30 per lb.
Ducks: 22@25 per lb.
Geese: 30@35 per lb.
Squabs: Fancy, 50; do, common, per dozen, 3.50; old pigeons, 3.50 per dozen.
Belgian hares: Live, 16@18 per lb.; do, dressed, 25@28 per lb.

LIVESTOCK

Western Meat Co. quotes:
Weighed off cars at our yards in South San Francisco:
Cattle: No. 1 steers, 6@6½; do, second quality, 4¾@5¾; cows and heifers No. 1, 4¾@5¼; do, second quality, 4@4¾; bulls and stags, 3@3½.
Calves: Light weight, 7½@8½; heavy, 6@6½.
Sheep: Wethers, 4@4½; ewes, 2@3¼.
Lambs: 7@7¾.
Hogs—Hard, fat, grain fed, weighing 125 to 200 lbs., 9; 200 to 250 lbs., 8; 250 to 300 lbs., 7; light sows, 7; heavy, 6.
California Farm Bureau Marketing Association reports:

No. Hogs	Av. Wt.	Dock	Price
Modesto, November 29			
81	174	.....	9.05
24	221	.....	8.05
4	310	.....	7.05
4	322	.....	6.55
1½ cars, 21 consignors, $1,877.13.			
Chowchilla, December 1			
98	160	.....	9.00
58	154	.....	9.00
52	200	.....	9.00
7	187	.....	8.50
51	184	.....	8.50
30	231	.....	7.50
1	360	.....	6.50
3 cars, 27 consignors, $4,605.95.			
Wasco, December 3			
84	171	.....	8.50
15	138	.....	8.50
5	176	.....	8.00
62	192	.....	8.00
22	224	.....	7.00
11	245	.....	6.50
1	310	.....	6.00
1	390	20	6.00
2 cars, 22 consignors, $2,994.80.			

Total for the week, 6½ cars, 70 consignors, $9,477.88.
These prices are f. o. b. shipping point to the farmer, while the prices quoted by the newspapers are off cars at their packing houses.

POTATOES AND ONIONS

Street prices:
Potatoes: River, fancy, 2.25@2.50; choice, 2.00@2.25; Oregon Burbanks, 2.65@2.75; Salinas, 3.75; netted gems, 2.75@2.90; British Queens, 2.25@2.35. Sweets, 2.75@3.15; Turlock, 2.90@3.25.
Onions: New crop Yellow, 3.25; Brown, 3.75@4.00; few fancy, 4.50; Green, 1.50@2.00 per box.
Garlic: 2@5 per lb.

VEGETABLES

Wholesale selling price:
Artichokes: 15.00@17.00 cr.
Beans: Wax and string, 10@12; fy., 16.
Brussels Sprouts: 7@9 per lb.
Carrots: Sk., 1.00@1.25; fy., 2.50@2.75.
Celery: 75@1.50 cr.; fy., 2.00; bunch, 15@30.
Cucumbers: Hothouse, 1.35@1.50; Southern, 60@85; some 1.00.
Eggplant: So., lb., 3@6.
Lettuce: Iced, 1.75@2.00 cr.; local, 75@1.00.
Mushrooms: 10@40 lb.
Okra: 1.00@1.50 per box of about 10 lbs.
Olives: Lb., 5@7.
Peas: Lb., 5@12½.
Peppers: Bells, 5@7 lb.; 50@75 lug; chili, 5@7.
Rhubarb: Southern, box, 1.75.
Tomatoes: Southern, 2.25@2.75 cr.

FRESH FRUITS

Apples: California: Bellefleur, fancy, 1.50@1.65; Newtown Pippins, 3½ and 4 tier, 1.75@2.15; 4½ tier, 1.25@1.50; B grade 1.25@1.35; Spitzenburg, 4 tier, 1.50@1.75; 4½ tier, 1.15@1.50; Baldwin, 4 tier, 1.40@1.60; 4½ tier, 1.15@1.35. Northwestern: Spitzenburg, extra fancy, 2.50@2.75; fancy, 2.25@2.50; choice, 1.75@2.00; Rome Beauty, fancy, 3.00@3.25; choice, 2.50@2.75; banana, extra fancy, 3.25@3.50; fancy, 2.75@3.00; Delicious, 2.75@3.00; Jonathan, extra fancy, 2.00@2.50; fancy, 1.75@2.00.
Avocados: California, doz., large, 3.00@5.00; small, 1.00@2.00; Fla., 5.00@6.00; Tahiti, 2.50@3.50.
Bananas: Eastern, 6@7; Hawaiian, 6@7½.
Blackberries: 60@85.
Cranberries: Bx., 5.50@6.50; Cape Cod 24.00@25.00 bbl.
Huckleberries: 8@11 lb.; fy., 15@18.
Melons: Casabas, 75@1.00 per doz.
Pears: Winter Nellis, 2.50@3.25 box; Beurre Clairgeau, 2.00@2.50; De Anjou, 2.00@2.50; Beurre Hardy, 1.50@2.00; do, fancy, 2.50@3.00.
Persimmons: 1.50@2.25.
Pineapples: 4.00@5.00 doz.
Pomegranates: Box of ½ doz., 2.00@2.50.
Prunes: 1.00@1.25 cr.
Quinces: 1.25@1.50 lug.
Raspberries: 75@1.00 dr.
Strawberries: 1.00@1.40 dr.; case, 2.00@2.40.

CITRUS FRUITS

Oranges: Valencias, nominal. Lemons, 3.00@4.50 per box; lemonettes, 1.50@3.00 per box. Grapefruit: 2.50@3.50 per box for California and Arizona. New crop Navels, 4.50@5.50. Tangerines: Cr., 2.00@3.00. Mandarins: Box, 2.50@3.00.

HONEY

Demand has been better and movement heavier during last two weeks. Market firm, better feeling. Stocks continue to decrease. The heaviest movement is on light amber alfalfa; supplies of other grades, especially white stock, limited. Due to late rains, colonies in Southern California have more brood than usual at this date, and as a result winter stores are being consumed too rapidly. Carloads f. o. b. usual terms at loading points: White orange, no sales reported, supplies nearly exhausted; white sage, mostly 11½; light amber sage, 8½; light amber alfalfa, 6½@7, mostly 6½. Considerable California honey being sold by producers in small lots at prices averaging 3@7 per lb. higher than carload prices. Hawaiian carloads, f. o. b. San Francisco: White, 6½; light amber, 5; honeydew, 4. Beeswax: Quiet. Too few sales to establish market.

NUTS

California Walnut Growers Association:
Opening prices to wholesalers:

No. 1 Softshell	31
No. 2 Softshell	21
Fancy Budded	34

DRIED FRUITS

Apples, 1921 (Packers' Quotations):

Choice (in 50s)	10½
Extra choice (in 50s)	10½

Apricots, 1921 (California Prune and Apricot Growers) Bulk Basis:

	Sunsweet	San Joaquin
Standard	12	10½
Choice	16	13½
Extra Choice	17	14½
Fancy	19	15½
Extra Fancy	21	....

Peaches, 1921 (California Peach and Fig Growers), Sept.-Oct.-Nov. shipment, guaranteed to January 1:

	Yellow	Muir
Slabs (in 50s)	@9	...@...
Standard (in 50s)	@9¼	...@9½
Choice (in 50s)	@9 7/8	...@...
Fancy (in 50s)	@11	...@12
Extra fancy (in 50s)	@12	...@13
Practically Peeled—		
Standard (in 50s)	@10¼	...10½
Choice (in 50s)	@10 7/8	...@...
Fancy (in 50s)	@12	...@13
Extra fancy (in 50s)	@13	...@14
Cartons, 30 11-oz., per case		3.10
Cartons, 60 11-oz., per case		6.00
Cartons, 24 2-lb., per case		6.50
Cartons, 10 5-lb., per case		6.60

Figs, 1921 (Cal. Peach and Fig Growers), Sept.-Oct. shipment, guaranteed to Jan. 1:

White—	
Standard (in 50s)	6½
Choice (in 50s)	8
Fancy (in 50s)	10½
Bricks, 12 No. 10s	1.10
Bricks, 24 No. 8s	1.80
Bricks, 50 No. 6s	2.80
Bricks, 70 No. 4s	2.95
Layers, 10-lb., 4-row	1.60
Layers, 10-lb., 5-row	1.40
Calimyrna—	
Standard (in 50s)	7½
Choice (in 50s)	10½
Fancy (in 50s)	13
Bricks, 24 No. 8s	2.05
Layers, 10-lb., 6-row	1.90
Black—	
Standard (in 50s)	6
Choice (in 50s)	8
Fancy (in 50s)	11

Raisins, 1921 (Cal. Assoc. Raisin Co.):
Sun-Maid Raisins:
Muscats: 36 15-oz. cartons, seeded, 14¾ lb.; 25-lb. boxes, bakers' seeded, 13 lb.; 25-lb. boxes bakers' seeded, 13½ lb.
Muscats: 25 1-lb. boxes, 2-crown loose, 13¾ lb.; 25 1-lb. boxes, 3-crown loose, 13¾ lb.; 25 1-lb. boxes, 4-crown loose, 15 lb.

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Thompson Seedless: 48 15-oz. cartons, unbleached, recleaned, carton, 16 lb; 25-lb. bulk 14½; 25-lb. bakers' graded, unbleached, 17; 25-lb. boxes, choice, sulphur bleached, 18; 25-lb. extra fancy, sulphur bleach, 19; 25-lb, oil dipped, 15½; 25-lb. soda dipped, 15½.

London Layer Raisins: 3-crown London layer: 20-lb. boxes, $3.50 per box; 10-lb. boxes, $1.85; 5-lb. boxes, $1.00.

Clusters: 20-lb carton, clusters, $4.00 per box; 12 2-lb. carton, clusters, $4.80; 4 5-lb. cartons, clusters, $5.50 5-lb. carton, Imperial clusters, $1.50; 80-lb. vineyard run layer, $12.50.

Sultanas: 25-lb. box unbleached, recleaned, 13½ per lb; 25-lb. box, soda dipped, 14½; 25-lb. oil dipped, 14½.

Black Grapes: 25-lb. boxes black grapes, 14½ per lb.

Old Crop:

Muscats: 36 16-oz. cartons, seeded, 14½ per lb.; 25-lb. bakers' seeded, 13; 1-crown loose Muscats, 13½.

Sultanas: Sultans, unbleached, recleaned, 13½ per lb.

Thompson Seedless: Soda dipped Thompsons, 15 per lb.; oil dipped Thompsons, 15; black grapes, 14½.

Prunes, 1921 (Cal. Prune & Apricot Growers): Sunsweet Quality, bulk basis: 30-40s, 9¼; 40-50s, 8¼; 50-60s, 6¾, 60-70s, 6¼; 70-80s, 80-90s, 90-100s, 5½. Growers Brand ¼c less on all sizes. All prices subject to change at any time.

BEANS

Below California Bean Growers Association shippers' prices choice recleaned:

Large Whites	4.95
Small Whites	4.80
Pinks	4.60
Mexican Reds	4.50
Red Kidney	6.50
Henderson Bush	6.50
Cranberries	6.50
Bayos	4.90
Blackeyes	4.65

NUTS

California Almond Growers Exchange's prices:

Languedoc	14½
Hard Shell	11

Manchurian walnuts, 17.
Chinese peanuts, fy., 10.
Pecans, 25.

HAY AND FEED

California Alfalfa Growers report:

Prevailing prices last week, f. o. b. San Francisco:

No. 1 Dairy Alfalfa	16.00
Standard	15.00

A. W. Scott Co. says:

Arrivals past week, 789 tons. The local market here shows very little life and consumption is at a very low point. Cold weather up and down the coast would stimulate shipping trade. Interior market shows more activity. Alfalfa continues to sell better than other hay, particularly to inaccessible points, feeders calculating that with high freight rates it is cheaper to buy only the best grade of alfalfa with practically no waste in the feeding. Nevada alfalfa is being handled to the complete exclusion of California hay for the time being, as most of the California holders are now calculating that continued cold weather will create active local demand in their own immediate neighborhood and at prices better than the fixed market centers obtain for the Nevada. Coastwise trade has been particularly active during the week.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the markets in San Francisco (for prices to consumers, charges of switching, cartage, commission and handling expenses must be added, according to conditions).

Wheat hay No. 1	17.00@19.00
Wheat hay, fair grade	14.00@17.00
Tame oat hay	15.00@18.00
Wild oat hay	11.00@13.00
Alfalfa hay	13.00@16.00
Stock hay	9.00@12.00
Straw	10.00@12.00
Rolled Barley	29.00@30.00
Ground Barley	31.00@33.00
Oats, Rolled Feed	34.00@36.00
Bran and Millrun	24.00@27.00
Middlings	40.00@44.00
Coconut Meal	23.00@26.00
Alfalfa Meal	21.00@23.00
Cottonsed Meal	40.00@42.00
Sugar Beet Pulp	27.00@29.00
Molasses Tanks	21.00 Barr. 25.00
Milo Maize, Corn Meal and Cracked Corn	36.00@40.00
Scratch Feed	40.00@43.00

GRAIN

Sales on Grain Exchange:

Barley: Feed, 1.25@1.30; shipping, 1.30 @1.35.

Wheat: Mill, 1.85@1.95; feed, 1.85@ 1.95.

Red Feed Oats: 1.55@1.60; seed, 1.75@ 2.10.

Corn: California yellow, 1.45@1.50; eastern yellow No. 2, 1.37@1.40; No. 3, 1.36@1.38; No. 3 kaffir, in bulk, nominal; white Egyptian, 1.67½@1.72½; California red milo, 1.45@1.50.

Citrus Markets

Los Angeles, December 7, 1921.

Navels are meeting with fairly good holiday reception but in no case reach Valencia prices. Valencias, however, are now practically out of the market. They close their season with prices sometimes exceeding $12.00 at the eastern auctions. Holiday shipments of Navels from the Tulare section will be short of earlier expectations. A material reduction in the Navel output has been made by the severe windstorms of last week.

Shipments of lemons have been exceptionally light and eastern warehouses are being cleared up of surplus stock. F. O. B. quotations are running around $3. Receipts of foreigns are very light.

Shipments

Shipments of citrus fruits to date since November 1, 1921. Southern California: Oranges, 493 cars; lemons, 429; total, 922. To same date last season: Oranges, 626; lemons, 415; total, 1,041. From Central California to date this season: Oranges, 1,792; lemons, 12; total, 1,804. To same date last season: Oranges, 1,902; lemons, 25; total, 1,927. From Northern California to date this season: Oranges, 172; lemons, 2; total, 174. To same date last season: Oranges, 180; lemons, 1; total, 181.

AT THE AUCTIONS

November 30

New York: 6 or., 3 lem. Val. 4.35@9.15, lem. 2.80@4.00.

Boston: 3 or., 1 lem. Val. 4.20@6.80, lem. 2.55@3.40.

Cleveland: 3 or., 1 lem. Nav. 5.55@7.00, Val. 6.00@7.65, lem. 3.55@3.95.

Pittsburg: 2 or., 1 lem. Nav. 4.75@5.35, Val. 5.20@5.85, lem. 1.10@2.50.

December 1

New York: 7 or., 2 lem. Val. 4.70@12.80, Nav. 5.30@6.60, lem. 3.10@4.00.

Boston: 2 or., 1 lem. Nav. 6.25@6.85, Val. 7.00, lem. 3.35@4.00.

Pittsburg: 1 or., 1 lem. Nav. 6.00@6.70, lem. 2.65@4.15.

December 2

New York: 6 or., 2 lem. Nav. 4.95@6.85, Val. 3.65@7.60, lem. 3.15@4.00.

St. Louis: 2 or., 1 lem. Nav. 5.56, Val. 4.50, lem. 3.75@4.30.

Cleveland: 2 or., 1 lem. Nav. 5.15@6.10, Val. 2.65@4.25, lem. 3.15@4.35.

December 5

New York: 12 or., 1 lem. Nav. 4.50@ 7.35, Val. 4.35, lem. 4.10.

Boston: 4 or., 2 lem. Nav. 5.45@7.10, lem. 4.10@4.85.

Pittsburg: 4 or., 1 lem. Nav. 5.45@6.15, lem. 2.95@3.50.

Cleveland: 5 Nav., 2 lem. Nav. 4.85@ 5.60, lem. 2.20@3.55.

December 6

New York: 4 or. Nav. 4.95@6.80.
Boston: 1 or. Nav. 6.45.
Pittsburg: 2 Nav., 5.30@5.85.

TRACK ATTACHMENT FOR LARGE WHEELERS

A new track attachment for small tractors is now being manufactured by the Schmeiser Manufacturing Company at Davis. This has been designed by A. C. Johnson, who is one of the pioneer tractor designers and manufacturers in this state. Among his achievements is the design of the Yuba and Bean tractors.

The new attachment was recently tried out on a Fordson tractor at the university farm. It operates without lubrication. The drive sprocket is made of manganese steel and is 44 inches in diameter. The idler wheel is made of cast iron and is connected to the sprocket by an adjustable radius rod. As applied to the Fordson, the sprocket and track are but two inches smaller in radius than the regular drive wheel of the tractor. This company has manufactured land levelers, hay derricks, almond machinery and horse equalizers for a number of years, being one of the oldest manufacturing plants of agricultural implements in California.

An unofficial test of the track recently conducted on the university farm showed a considerable increase in drawbar pull on plowed ground. The Fordson with the track weighs 3,700 pounds. This added weight accounts for some of the increase in the drawbar pull. The attachment will be officially tested at an early date, and those interested may receive accounts from the Schmeiser Manufacturing Company at Davis.

By making an interchangeable hub this attachment can be applied to such small tractors as the Fordson, Samson Model M, International 8-16 and others of this type. The device does not interfere in any way with the use of swinging drawbars. A chain connection from the idler on the front of the track to the tractor frame prevents the track from turning over under extraordinary conditions.

Legal Queries

Louis B. Stanton, attorney, 343 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 317 Central Ave., Los Angeles.

Joint Tenancy

Husband and wife own real estate jointly. There are minor children. In case of the death of either husband or wife does the property go to the survivor or do the children have a legal share? How can the survivor get entire ownership without legal proceedings?—Subscriber, Napa.

If the deed to the property runs to the husband and wife as joint tenants with right of survivorship, upon the death of either the whole title to the property vests in the survivor. The children have no interest. In order to establish the fact of death of record it is necessary to file a simple petition, showing the fact of the joint tenancy, death of the survivor, and publish order to show cause, which will be issued on the filing of this petition, and decree is then made establishing of record the fact of death and of the vesting of the property.

Cow Not as Represented

I bought two cows from a man who guaranteed them to be healthy and in good condition. One cow seems to be all right; the other is not. What is my remedy?—Subscriber, El Monte.

You doubtless have two remedies; one to return the cows and demand your money back. In case he refuses so to do you can place the cows with some third party at his risk, notifying him, and bring action against him for the purchase price of the cows, thus rescinding the contract. This remedy depends largely upon the exact representations and upon the fact that it is promptly taken. Under the other remedy you may affirm the contract and bring action against the vendor for such damages as arise from the breach of the guarantee made when the cow was sold.

Accounting Required

A induced B to buy lot from third party. B put up all of the purchase money. A, who handled the deal, took deed to property in his own name, subsequently made improvements on the lot, and thereafter collected monthly rentals and appropriated them to his own use. He subsequently sold the lot for four times the amount of the actual purchase price, together with improvements made. He now offers B in settlement his unsecured promissory note for the original purchase money. What redress has B in the case? B had no knowledge of the improvements.—Subscriber, Lancaster.

A was unquestionably a trustee for B. As such he was bound to act in the highest good faith and could obtain no advantage. He was not entitled to use or deal with the trust property for his own profit, and every presumption is against him. B may, therefore, bring an action against A for an accounting as a trustee and, at the option of B, A may be required to account for all of the profits made under the transaction or to pay the value of the use together with interest from the date of judgment at the legal rate.

WEATHER REPORT

San Francisco, Dec. 3, 1921.

Stations	Rainfall Week	Rainfall Season	Rainfall Norm.	Temp. Max.	Temp. Min.
Eureka	3.34	8.39	10.38	64	36
Red Bluff	.79	2.22	6.01	66	42
Sacramento	.48	1.78	3.92	64	44
San Francisco	.43	2.40	4.41	66	48
San Jose	.74	2.08	3.43	68	40
Fresno	.34	.55	2.15	64	40
San Luis Obispo	.16	.72	3.67	70	44
Los Angeles	.04	1.25	2.50	70	50
San Diego	.14	2.19	1.44	68	49

Ranchers Plan Field Meets

Lower the Cost and Increase Production per Acre

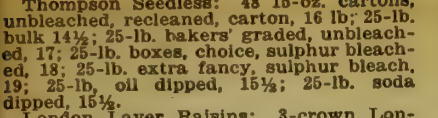
A series of field meets is now being held throughout Southern California, following similar meetings held successfully by the ranchers of the northern part of the state. Fourteen or fifteen such field meetings already have been arranged from Camarillo on the north to Chula Vista on the south and other meetings will probably be arranged by ranchers in many sections as soon as the successful results of these meetings become known.

The plan of the meetings is to make an intensive study of the problems and conditions of each district and by study and discussion to overcome the peculiar conditions of soil and climate.

Among the different Los Angeles firms, who have assisted at these field meetings, the service department of the Dixon & Griswold Co., 130 No. Los Angeles Street, Los Angeles, have been conspicuous. Their La Crosse Orchard Disc and Mold Board Plows, which were designed in California especially to meet California conditions and which are, in fact, the ideas of prominent California growers, have been in almost daily evidence.

As the result of the series of field meets throughout the state it is expected that costs will be reduced and the production per acre of California ranches will be materially increased.

Ranchers who would desire to attend the meets or who are interested in the new La Crosse Orchard Disc Plow will be given dates and locations of the meets and descriptive circulars of the La Crosse Plows upon application by postcard to Dixon & Griswold Co., 130 No. Los Angeles Street, Los Angeles, California.—Advertisement.



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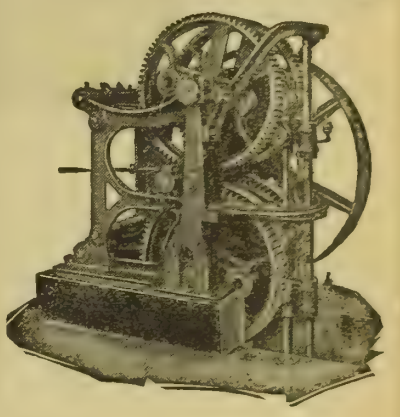

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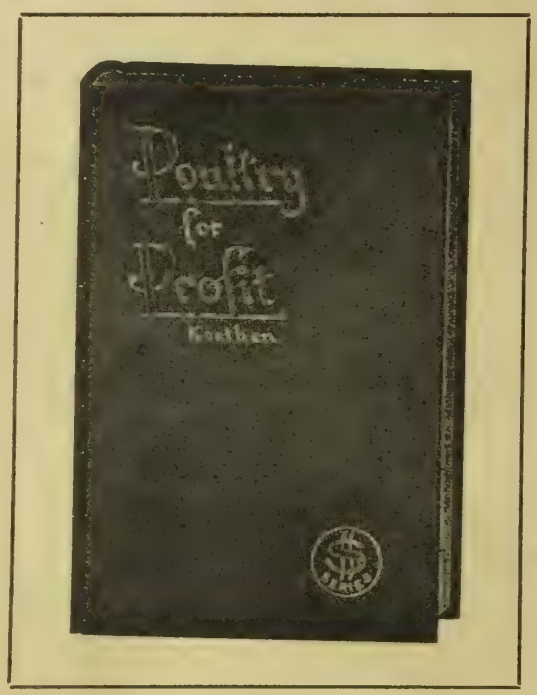

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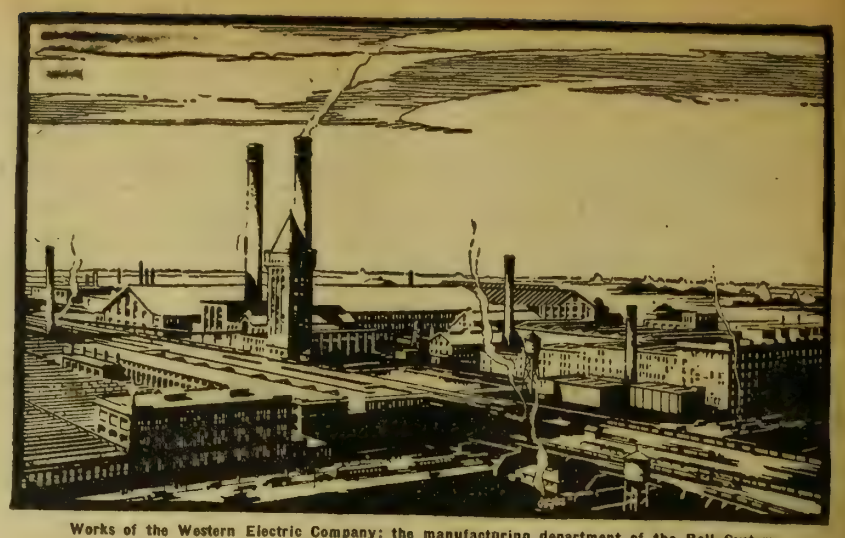

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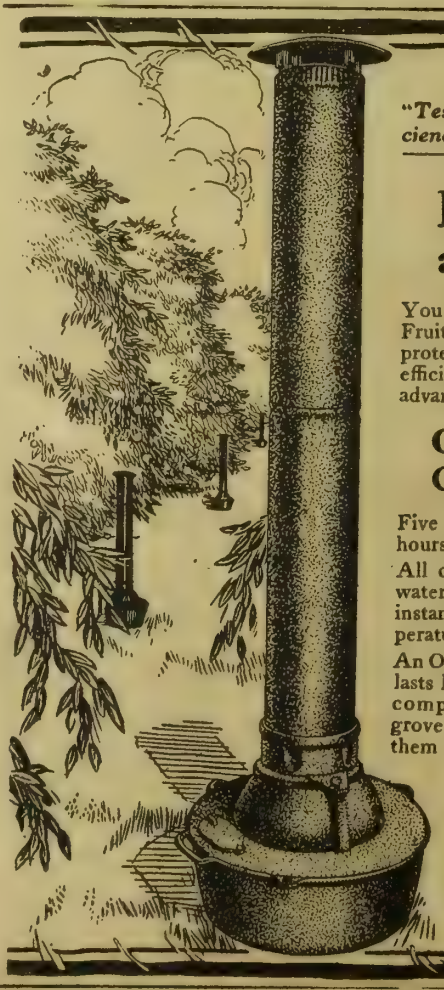

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Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LVII — December 17, 1921 — No. 25

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Combined with California Cultivator 1914 Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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Saturday, Dec. 17, 1921

OUR ADVERTISERS RELIABLE

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If among the more than 40,000 Cultivator's weekly circulation any fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

The League of the Southwest has only been organized some four or five years. It is an organization sustained by voluntary contributions of its members and aims to provide an open forum where questions affecting the welfare of the southwestern states of the Union may be discussed. Its fifth meeting was held in Riverside last week.

* * *

We of the Southwest are wonderfully jealous of our home. We each have the best little nook of the best great empire in all the world. There is so much that is good in the possessions of each of us that we feel justified in the attitude we take. But this appreciation of worth is such that we insist on having all our own and where that insistence is too emphatic cooperation ceases.

* * *

So jealously did we guard our own interests at the Riverside meeting and so strenuously did we insist on having all of our own that it looked for a time as if the League would break up in a glorious row. But the give and take principle prevailed, at least to an extent, and it was found that "we are not so far apart after all."

* * *

It takes vision to translate possibilities to accomplish, and with such magnificent possibilities as there are in the Colorado there must be great vision, and the people of the Southwest will not perish because of the lack of that vision.

* * *

George Maxwell has not lost the fire which he had in the good old days of the National Irrigation Congress and in the days of the organization of the reclamation service. Those were the days when, as he said in the convention, "I was called George the Baptist and was little more than the voice of one crying in a wilderness." But the wilderness of the Southwest is smaller than it was, and George Maxwell is responsible for a whole lot of the enthusiasm and cooperation which were necessary to secure flood protection and irrigation.

* * *

"The development of the Colorado is not possible without the aid of the federal government" was the statement often made in the discussions at Riverside. Notwithstanding state rights beliefs the best interests of all must prevail, and they canot unless we have one great comprehensive plan under direction of one head.

* * *

The Imperial Valley is in greater danger than most of us are aware. This danger comes from two sources. First, the flood season of the Colorado, and, second, the flood season of the Gila. Fortunately these flood seasons have never come at the same time. But the Gila seems to be a law unto itself, and if its flood crest ever comes at the same time as the crest of the Colorado flood, and the levees of the Imperial Valley ever break, God help the farmers on a million acres of Southeastern California and Northwestern Mexico!

* * *

The greatest good to the greatest number will doubtless be the policy of the government which controls the waters of the Colorado, and we believe this will result in justice to Arizona. Of course Arizona and other states might receive more immediate financial returns if these great sites were thrown open to appropriation by public utility interests, some of which have pledged to their stockholders eight and one-half per cent on money invested in their stocks. Presumably these same companies would be willing to pay to various states a percentage on income derived but this would certainly work an injustice on the people who owned those rights for all time to come. Let the government keep control; let the people have the power at cost.

* * *

If Colorado, or any other state, could make good its claim to absolute ownership of all the waters within its boundaries and then should permit those waters to escape and injure other states, it would be a reasonable presumption that she would be responsible for any damage those waters might cause, and if, for instance, the waters should break Imperial Valley dykes and a half a million acres be covered 50 feet deep, is the state of Colorado prepared to compensate for those damages?

WINDBREAKS PAY

We have taken a 120 mile ride through wind swept orange groves in citrus sections. The injury is not so serious as anticipated. It is enough, however, to make outstanding the value of windbreaks. Where injury is most severe there was unobstructed sweep of the winds, while in adjoining or nearby orchards, where windbreaks were properly placed, there was practically no injury to trees and greatly lessened injury to fruit.

Strong growing trees which are of highest value as windbreaks undoubtedly exhaust soil of moisture and fertility, and a few rows of fruit trees may suffer unless exceptional care is taken to restore the water and fertility. But the advantages to those same trees and others in the orchard we believe have amply justified the cost of windbreaks.

THAT WIND

It was really quite a wind which started over on the Mojave desert somewhere, vaulted the Sierra Madre and dropped on the orange groves, touching various high spots on the way to the sea.

The injury is not as serious as at first feared, yet there are trees split or twisted off, a few fruits blown off and more thorned and bruised. As yet there have been no extremely low temperatures which often have followed the windstorms, but we are still fearing and many an orchardist is filling his heaters and watching thermometers.

Manager Blackwell of Glendora Lemon Association estimates not over 20 per cent of lemons of the section injured, with a large salvage possible.

COURTESY—JUSTICE

Was there lack of the usual California courtesy in the action of California delegates at the meeting of the League of the Southwest when they refused to grant the request of Colorado and practically surrender the birthright of their state in the wonderful wealth of the Colorado? Colorado boldly asserted her belief in the possession of all the waters which are within the boundaries of that state and equally as boldly declared "we will protect these rights to the last ditch and carry every feature of the fight to the supreme court." Speeches, covering hours, in which the sovereignty of the state was set up were delivered. A great mistake on the part of California in giving force in its laws to the age old riparian rights was alleged. In fact, some speakers could easily show that California is entitled to none of the Colorado's waters.

Then with this foundation laid six states united in asking of California as an expression of her world renowned courtesy to step down and out and allow the six states to courteously fix us a plenty. "And if (with heavy emphasis on the if) you refuse us this courtesy we will refuse to participate and your League of the Southwest will consist of simply your own state of California."

Fortunately the constitution of the League was disclosed to be in force as it had been adopted.

It is apparent from the expression of Secretary Fall of the Interior that the reclamation service will continue its oversight of the lands and waters of the Southwest and that the people as soon as possible will have the great heritage of light and power and water for irrigation, which is now wasting into the sea, made available. To turn this task over to seven "sovereign states" will simply mean chaos.

But was California courteous? She was certainly just.

PREFERENTIAL RIGHTS

Notwithstanding "sovereign states" and "states' rights" talk at the League convention and at Secretary Fall's hearing at San Diego was not received with super-enthusiasm there was an appeal in the address made by Governor Sloan of Arizona to Secretary Fall. Californians had held the floor nearly all of Monday and appealed for flood control that Imperial, Palo Verde and Coachella Valleys should not be destroyed; that dams be erected and hydroelectric power generated—and by the reclamation service—and the power delivered to the people and at cost.

Governor Sloan made no claim to states' sovereignty, but he did call attention to the map of the Colorado basin and to the fact that practically all the dam sites were within the boundaries of Arizona and that the development of those sites and turning of practically all those resources over to California or other states would result in depriving Arizona of one of her greatest resources, and he made the appeal of a strong man to a great government to deal with his state so as to make available to that state so far as possible one of its greatest industries.

COOPERATION

Until people can learn the meaning of the word cooperation there will not be fullest success in developing this great Southwest. As Mr. von KleinSmid said: "These are the seven best states of the Union." But the best can not be secured for these states unless a more truly cooperative spirit can be manifested than was shown at Riverside. Cooperation was on the banner of all the delegates, but too many of the speakers allowed it to appear that their idea of cooperation was in effect "You all cooperate with me." Cooperation calls for a program of give and take, and he who insists that either he or his state is supreme is not a true cooperator nor truly patriotic.

The wonderful wealth of the Colorado has all too long been allowed to waste, and destroy as it wasted into the Gulf of California. According to Colorado's idea, as expressed at the convention, the waters of the Colorado river which fall within the boundaries of the state of Colorado are the property of that state. Then naturally Wyoming, New Mexico and Arizona could claim similar ownership. Under such belief California would measure her interest in the Colorado in drops rather than cubic feet per second, for as a watershed California has practically no interest in that great river. In consideration of the fact that California has utilized the waters which have been going to waste and has built up great agricultural values through the use of that water, she insists—and all fair minded grant that she insists justly—in the continued use of that water. But California's cooperation should be as hearty as that she expects from the states up the river and the storage of the floods for use in those states should be encouraged and made possible through California's cooperation. If every state proposes to insist on all the rights it has or can secure without consideration of others it will be one long time before the wealth of the Southwest will be built up as it should be by the Colorado. It takes cooperation and the spirit of enlightened selfishness if we would see these great forces of nature turned into comforts for human beings.

California Cultivator

Vol. LVII, No. 25 Los Angeles, December 17, 1921 One Dollar Yearly

Protecting Orchards From Wind

By Ernest Braunton

THE late severe windstorm has revived the subject of windbreaks, especially with growers of citrus fruits, for it came at a time when trees hung heavy with fruit and in many districts orchardists suffered serious losses. In the infantile days of the citrus industry windbreaks were considered a necessity almost everywhere, for mile upon mile of young orchards had no other protection and the winds were strong and merciless.

With further and closer settlement of these districts came the planting of highway trees for ornament, plantings about the homes, the farm woodlot, etc., until windstorms gradually ceased to be such a serious menace as formerly. In some sections of the citrus growing territory windbreaks were gradually cut down as unnecessary by reason of the development of many promiscuous plantings mentioned and also because of the great pull on orchard fertility. It was found that the quickest growing tree was the eucalypt and later it was apparent that it was also a most rapacious seeker after orchard fertilizers. Harrowing tales were told of finding eucalypt roots in the orchard 50 or more feet from the base of trees and within the upper feeding zone of the citrus trees. To still have this wind protection and yet harvest a fruit crop from orchard trees nearest these arboreal monsters the growers paid them tribute by giving extra irrigations and applications of fertilizers to the rows of orange trees next the windbreaks, so that such fruit trees would produce their pro rata of the season's crop.

Curtailing Soil Robbing

Many orchardists dug ditches between orchard and windbreak and cut through all orchardward roots to a depth of three feet. Some even ditched and destroyed to six feet deep. At least one orchardist put in a concrete wall before filling in the ditch, thus forever removing the menace. Ofttimes adjoining property was adversely affected. Near La Verne, Los Angeles County, the large Seth Richards orchard, an early planting, had a double row of eucalypts on the north side, along the county highway. Orchardists on the other side of the highway claimed this proved a barrier to atmospheric movement along the surface, damming back the damaging frosts and thereby injuring their fruit crops. After years of protest one-half the eucalypts was cut away and no damage came to the owner's orchard. Then followed the remaining half and no harm came to anyone as the result of this clearance. The manager told the writer the planting was largely for frost protection, winds had been subdued by subsequent plantings, the orchard trees were so large and thick that frosts could not injure as when trees were small and far apart and the dual protection, from wind and frost, therefore no longer needed. About this time many windbreaks were cut out and the planting of young ones was not so popular as "in days of yore."

The Present Situation

The result is that today there are fewer windbreaks and of less extent, compared with citrus acreage, than ever before. Long continued heavy winds therefore sweep unbroken across vast areas of citrus orchards and the resultant heavy losses cause owners to ask if they had not better plant windbreaks, and of what material.

Before enumerating the various trees for equally varying climatic and other conditions it may be as well to state that soil robbing is no longer feared. Since the advent of the powerful farm tractor the cost of effective root cutting has been reduced to where it is not a serious item in orchard expense. When trees of rapid growth and far-reaching root systems are planted a root cutting machine is annually run through between orchard and windbreak and offending roots cut. The trees then push down roots in a deeper zone and below a certain depth these are allowed to extend as they will. In San Bernardino County the writer saw a tool that cut all roots to a depth of three feet, a subsoiler with a chisel or knife blade front. This, with a 75 horse power tractor, cut 15 miles in a day. The owner said he could put on a longer chisel and do as effective work four feet deep. A tractor demonstrator lately told the writer he would be pleased to show that he could do this in the heaviest of soils, even hard pan. The usual practice is to cut once in two years, running down one side of tree row one year and down the other side the next year. Orchards so treated for four years were closely inspected and the nearest trees appeared to carry as good crops in all respects as those farther out in the orchard.

The Eucalyptus Makes Effective Windbreaks

What to Plant

No other trees make such rapid growth as the species of eucalypts most commonly planted in California. These are the blue gum, Eucalyptus globulus, and the two red gums, E. rostrata and E. tereticornis; all much alike in rapidity of growth, habit and hardiness. Where summers are extremely hot and winters too cold except for the hardier citrus trees or none at all, Eucalyptus viminalis is the better species. This has been amply proven in the Imperial, Coachella and Antelope Valleys. Sometimes but one row is planted, in other places as many as four rows will be found. No argument on the number of rows need be herein set down; the needs of the situation should dictate. It has been urged that eucalypts early lose their lower limbs and let the blast onward sweep but little impeded. When a double row is set the inside row is topped when lower bareness is first manifest, causing a generous branching. When these lift their limbs through natural denudation, the outer row of trees is cut down and so the alternation proceeds for future years.

Another popular method is to plant the inner row of Monterey cypress. These do not rob the soil as the eucalypts and yet so compete with them for plant food that the eucalypts develop a root system mainly on the opposite side. When aligned by the roadside this is a decided advantage as the eucalypts then feed largely from the aforementioned roadside and the orchard trees escape the entangling alliance in which they ever come out a decidedly poor second. For quick and effective windbreaks the trees listed are certainly preferable to any planted in California. Yet there are others.

Sometimes deciduous trees may be used—summer winds may prove the

(Continued on Page 631.)

Agricultural News Notes of the Pacific Coast

Northern California

Novato, Sonoma County, is becoming an important poultry center.

Demonstrations of long pruning were conducted in Placer County last week.

The Glenn County farm bureau has opened a farmers' meat market at Orland.

Effort is being made in El Dorado County to revive the potato growers association.

The supervisors of Butte County have cut out appropriation for assistant county agent.

The Flournoy farm center of Tehama County is planning a jack rabbit drive Christmas week.

Tehama County farm bureau is planning to buy a moving picture machine for educational purposes.

Assistant Farm Adviser Buster of Sonoma County is making survey of the poultry industry there.

The newly organized Lassen County farm bureau starts with 103 charter members and 10 local centers.

Several olive growers have made a profitable business of shipping green olives to eastern markets to be processed by the buyers.

Local meetings of the Tehama County farm bureau will be held at El Camino, December 19; Liberal, 22; Flournoy, 30; Bowman, 31.

Local farm bureau meetings will be held in Shasta County at Redding, December 17; Cottonwood, 19; Bella Vista, 21; Millville, 27; Palo Cedro, 28.

A short course in general agriculture will be given at the university farm at Davis, January 2-7. This is particularly intended for prospective settlers.

Local meetings of the Napa County farm bureau will be held at Soda Canyon December 17; Oak Knoll, 19; Tucker, 20; Union, 21; Polk, 23; Mount George, 24; Chiles, 27.

Rumor that dipping of sheep brought in from Oregon for grazing in national forests of this state is no longer required is emphatically denied by Dr. Iverson of the department of agriculture.

Asparagus growers of the Sacramento delta district met at Walnut Grove recently to discuss formation of a marketing association. A committee was appointed to take preliminary steps.

In spite of effort of buyers to depress the turkey market for Thanksgiving several San Joaquin Valley raisers report good returns. Mrs. H. H. Goodman of Elliott netted 50 cents a pound.

Cattle range on railroad lands is from 25 to 50 per cent lower than in 1921 and Cattlemen's Association is urging renters to note this fact and make sure that they are not signing contracts on last year's terms.

A plan is being presented in Placer County for impounding flood waters of Bear River to supply the recently formed irrigation district covering Mount Pleasant, Gold Hill and the lower section of the Mount Vernon district.

The public utility department of the state farm bureau is canvassing users of electric power for funds to be used in securing data to present before the railroad commission the farmer's side of the power question in connection with revaluation of public utility properties.

Central California

Fresno County farm bureau is in the middle of its membership campaign.

Waldo Rohnert has been chosen state federation delegate for San Benito County.

The first carload of Porterville oranges to reach Boston this season sold for $6.90 per box.

The Orange Cove packing house has just sent a carload shipment of fancy Emperors to Mexico City.

The Kings County farm bureau held its annual banquet at Hanford, December 5. Over 500 attended.

More than 650 applications for state loans have been received from ex-service men in Fresno County.

Work has begun on the 300 mile stretch of highway between Naranjo and Lemon Cove in Tulare County.

There is talk of the formation of an irrigation district in the Kings River bottoms near Sanger, Fresno County.

Farm bureau centers in San Benito County are conducting their membership drive. Dues are $2.50 for the year.

Grape growers and shippers met at Dinuba recently to get together on a standard for drum shipments of Emperors.

This week a tractor school is being held at Tulare. This is one of a series of 14 being offered by experts of the state university.

A meeting of agricultural instructors of high schools of the San Joaquin Valley was held yesterday and today at Fresno.

Fresno County Historical Society is planning to celebrate next April the fiftieth anniversary of the coming of the railroad to central California.

L. R. Payne, chief of the inspection department of the Sun-Maid Growers, is making an inspection trip through southern states studying the quality of the Sun-Maid product as it reaches consumers.

The Stanislaus Poultry Association held a big show at the Winter Garden, Modesto, December 6-9. C. G. Hines of Oakland judged all exhibition classes; Prof. Dougherty of the university, utility classes.

San Benito County has had the services of the University of California agricultural extension service since September 1. W. J. Tocher, formerly assistant farm adviser in Santa Cruz County, is adviser.

The Porterville chamber of commerce has on display apples from the mountain ranch of George Dillon near Milo, from the same trees which produced apples winning first prize at the world's fair in Chicago in 1893.

At a meeting last week at Lindsay, Tulare County, 60 packing house managers of the Mutual Orange Distributors gathered to hear report on Tulare district crop. The expected increase of 20 per cent over last year's shipments has failed to materialize because of small sizes.

The San Benito County farm bureau conducted the third annual county fair in September. Every one of the farm centers put in a splendid exhibit. The judges had a hard time to select winners. Union took first prize as a center exhibit, San Juan Valley second, and Southside third. The total attendance at the fair was about 5,000.

Southern California

Ventura County is asking federal aid in building the Ventura-Maricopa road.

The San Dimas Canyon dam is now three-fourths completed at a cost of $240,000.

The Hemet-San Jacinto Poultry Association is planning to hold a show at San Jacinto some time in January.

Tree pruning demonstrations were given in Imperial Valley this week by W. P. Tufts of the state university.

The office of county flood control is driving piles in the stream bed under the San Dimas-Cienega bridge near San Dimas.

The Highgrove Fruit Exchange packing house opened this week on Navels. Secretary Cummings says that wind damage is slight.

More than a thousand accredited delegates attended the conference of the League of the Southwest at Riverside last week.

About three-fourths of the grapefruit growers of Imperial Valley are now organized in the Valley Grapefruit Growers Association.

Southern California last year shipped 3,205 carloads of cabbage; Florida, the next large early cabbage producing state, sent out 2,528 carloads.

The San Bernardino County farm bureau has gone on record as favoring the development of the Colorado River and construction of the Boulder Canyon dam.

Manager Foster of the San Dimas Fruit Exchange says that careful survey of San Dimas and Charter Oak districts shows very slight wind damage to fruit.

Ranchers of Carpinteria Valley of Santa Barbara County are considering a great irrigation plan that includes securing of water rights above Matilija Hot Springs.

A regional conference of county farm bureau presidents was held in Santa Ana last week to draft suggestions for the state program of work for the coming year.

Contract for eight and a half miles of paving has been let by the state highway commission for highway between Naples and Gaviota Creek in Santa Barbara County.

Formation of a flood prevention and water conservation district to include Orange, Riverside and San Bernardino Counties was proposed at the citrus institute at Santa Ana last week.

Attendance at the citrus institute at Santa Ana last week showed particular interest in the outlining of plans of the citrus exchange for establishing its own ship line through the Panama Canal.

The tractor school of Los Angeles County will be held at Covina in the high school shops January 16-21. Enrollment is limited to 60, enrollment fee $2. Apply to farm adviser, Los Angeles.

Planting of cabbage in southern district of California for 1922 is estimated by the U. S. bureau of markets at 5,227 acres against 5,724 in 1921 and 7,410 in 1920. The yield in 1921 was seven tons to the acre.

The Littlerock-Palmdale center of the Los Angeles County farm bureau is investigating plans for building a cold storage pre-cooling and icing plant at Palmdale to handle the pear crop of the valley.

The Coast and General

Colorado last year shipped 3,552 carloads of late grown cabbage.

Drying winds in Arizona have somewhat damaged range grasses.

An extensive road building plan is reported under way in Arizona.

New York is the largest producer of late cabbage of the states in the Union, shipping in 1921, 10,458 carloads.

Growers are receiving $19 and $20 a ton for rutabagas in the Outlook district of Yakima County, Washington.

About half the apples produced in Australia are grown in Tasmania. Tasmania was the pioneer in apple exporting.

Arizona shippers have disposed of considerable quantities of light amber honey at $7 per case or about six cents per pound.

Beginning January 1 all fruit entering Canada and grown in this country must be marked on the box, "Grown in U. S. A."

Sheepmen of Klamath County are waging bitter war against bobcats which have been slaughtering large numbers of sheep.

The Arcadia Citrus Growers Association, Florida, is reported to have taken $75,000 frost insurance policy on groves of members.

Malheur County, Oregon, won sweepstakes prize for the second time at the state corn show held at Portland during the Pacific International.

The Farmers Union has livestock commission markets at Omaha, St. Joseph and Sioux City. The three have handled this year 8,533 carloads of stock.

The Albany Creamery Association, Oregon, the largest cooperative creamery in this state, is now occupying its new plant built to replace the one burned last year.

The potato yield of Walla Walla County, Washington, is reported to be only one-fourth of normal; some authorities say because of not using properly ripened seed.

Reports from Australia indicate rapid growth of cooperative marketing associations among farmers. One of the most active of these is the Citrus Fruit Growers Association.

Cold nights in the Salt River Valley of Arizona have been favorable for lettuce and heads are reported to be solid and of excellent quality; shipment of carload lots began last week.

The annual meeting of the National Grange at Portland went on record as giving its support in every way to cooperative marketing, especially pledging support of the Capper-Tincher bill.

At the recent Pacific Northwest Fruit Exposition at Seattle it was determined to make it an annual event. A board of trustees was elected representing Washington, Oregon, Idaho and Montana.

Secretary Myers of the National Farmers Cooperative Grain Marketing Company says that 25 state farmers' organizations in 11 states have taken active steps to further the grain company's success.

Apple growers of Wenatchee, Washington, in conference at Spokane, December 15, are reported ready to put up a fight to abolish state inspection. Principal objection seems to be because of incompetent inspectors.

History of the Great Southwest in the Making

Editorial Correspondence

REPRESENTATIVES of the seven southwestern states of the Union are in Riverside. They are making history. These representatives or delegates come without power to DO anything. Just voices crying for the ending of the wilderness and using forces of nature which are now wasting—and destroying as they waste—to make possible the building of homes for men and women and little kiddies.

Doing will, however, result from the presentation of facts through the addresses, the discussions, resolutions and the spirit of cooperation. Better than all is the educational side. This convention or congress, or whatever it may be called, is bringing together such a fund of information as to the wonderful resources of this great Southwest that one cannot help but say: "We have not yet begun to realize the opportunity offered by the Colorado."

It is said: "The Colorado will irrigate six millions of acres, but as yet there are only two millions of acres reclaimed!" "The Colorado now discharges 13 million acre feet of water annually into the Gulf of California!" "Horsepower—millions—wasted every year!"

"Why don't we stop it?" "Haven't we the engineering ability?" Yes. "Haven't we the financial ability?" Yes, oceans of it. "Has not nature made wonderful provision for possible storage and control?" Yes. "Are there rich lands on which to pour the water?" Yes.

Then, Why!

Nothing is easier. Simply a lack of

C-O-O-P-E-R-A-T-I-O-N.

And the effort was made to start this convention off with a truly cooperative spirit but before the end of the first day cooperation got an awful jolt.

Seven states or portions of them are within the boundaries of the Colorado watershed, as is the Republic of Mexico. Each realizes as never before the necessity for claiming all possible rights to the water and to the power. So notwithstanding the appeal by those making welcoming speeches, by the president in his annual address, by the engineers of the geological survey, for harmony and cooperation, because in the abundance of wealth there is sufficient for all, yet the green-eyed monster appeared, and we who like a scrap leaned back in our chairs and had a real nice time.

Colorado opened the ball. She suggested that "before you folks build your great structure you'd better see that your title is good." Then followed an extended treatise on states' rights. Before there was a federal government there were sovereign states. The federal government is the creature of these sovereign states and these states may not be deprived of any of their powers or rights by act of the government.

Five other states joined Colorado in its desire for state management. California insisted that such divided management of the entire water shed, power and irrigation possibilities would simply result in chaos and everlasting contention. For 11 years already Montana and Colorado have been fighting in the courts each to secure its own rights. A third presentation is ultimately to be made before the supreme court, hence the various states all appealed for more complete cooperation at the beginning, yet each insisted that all others should "cooperate" with it. Even the California delegation was not a unit for it was divided between cooperators and the large private or rather public utility interests. The public utilities found it wise to unite with the delegates of Arizona, New Mexico, Colorado, Utah, Nevada, Wyoming, and against that portion of California's delegation which believed in the entire Colorado river basin control being under the reclamation service of the department of the interior, distributing to the various states, municipalities or hydro-electric irrigation interests as would be entirely just to all sections.

The first day of the convention closed with everybody under tension and a break apparently impossible to avoid. The six states insisted that the section of the constitution of the league which provides that only contributing members shall vote be set aside and that they be extended the courtesy of one vote only for each state because of their coming great distances and because of the lighter attendance of delegates. In other words, seven votes in the entire congress. Chairman von KleinSmid ruled that he was helpless to grant this request excepting by practically unanimous consent. Hundreds of California delegates had come to fight for California's interests and state control was not their idea of securing its interests. Diversity of opinion, diversity of methods advocated and need of immediate action to save the Imperial Valley was urged against compliance. The six states, however, insisted upon their plan and squarely stated that they would refuse to participate in voting unless they were granted the unit rule. California's universal courtesy was appealed to and this placed California delegates in an exceedingly delicate position. But with interests of such magnitude at stake, and with the appeal to the other states to unite under federal direction, California stood firm for federal action, endorsement for which she knew could not be secured under the unit ruling.

However, this decision of the Californians was only reached after a session of the delegates of that state which extended far into the night. The public utilities, or the privately owned hydroelectric interests, proved they were strongly intrenched, and willingness of the delegates of the other states to unite with private interests was a bitter disappointment to many. With Colorado and Utah as leaders an immense amount of time was killed in discussion of states rights in the abstract, states ownership of streams, or at least of the beds and banks of the streams, and states rights theories and propaganda since Colonial days, likewise decisions of supreme courts since long before Civil War days were all brought to bear upon the question. Californians made no answer whatever, simply standing square in their demand for government direction in the entire Colorado river basin development.

On the second day Secretary Fall of the department of the interior, and present with a direct message from President Harding, gave force to California's contention that government direction should prevail. Secretary Fall made several declarations which aided in clearing the atmosphere. One of these was in effect that a certain copy of an alleged contract between the department of the interior and the city of Los Angeles, which had been referred to on the floor, had not been signed by the department, and Los Angeles also stated that no such contract had ever been signed by the city of Los Angeles. However, this statement gave to the private interests and to the other states encouragement in that some construed it as a promise that no contract would be signed with the city of Los Angeles. But one statement made by the secretary was in effect: "When the time does come when we have determined as to what the equitable rights of the states are, the development of power, conservation of water for irrigation and flood control in a great comprehensive scheme covering the entire Colorado river basin will be taken up and should under no circumstances be under any direction other than the federal government." For many this was the first time any such declaration on the part of a government official had ever been heard, and it electrified and brought to his feet practically every attendant at the convention and there was prolonged cheering.

One event equally as thrilling as the reception tendered Secretary Fall was that which was given to Honorable R. T. Jeffery, chief engineer hydroelectric power commission of Ontario, Canada. Statements made by believers in public controlled hydroelectric power and denied by public utility people regarding the success of the work of the hydroelectrical commission of Ontario have made it imperative that the truth of the stiuation be known. One of the wise acts of the management of this great convention of the League was in securing the attendance of Hon. Mr. Jeffery. He made fullest statement and explanation of the situation in Ontario. Under private ownership almost prohibitive rates had prevailed. The province entered the field and, usually through agreement mutually satisfactory, acquired at Niagara Falls and other points great hydroelectric plants already in operation. Distribution is secured through agreement with municipalities, great industries or sometimes with individuals, but always at cost. Mr. Jeffery insisted that "cost" means cost. That is, entire fairness with the people and fairness of the province with itself demanded accurate accounting or auditing of every feature including interest, depreciation, and all overhead, and that the low rate secured to the people was not in any sense because of funds secured through taxation being transferred to the expense fund of the hydroelectric. But we will quote at some other time more fully from Mr. Jefferey's address. The closing of his address brought the entire audience to its feet in one prolonged cheer and heartiest expression of appreciation for his coming more than 3,000 miles to explain to California cooperators the work of his province. He insisted that Ontario's success had been secured only through cooperation.

RIGHT OF FARMERS TO A FAIR RETURN

It is rather shocking to be told, and to have the statement strongly supported, that 9,000,000 bales of cotton raised on American plantations in a given year actually will be worth more to the producers than 13,000,000 bales would have been. Equally shocking is the statement that 700,000,000 bushels of wheat raised by American farmers, would bring them more money than 1,000,000,000 bushels. Yet these are not exaggerated statements. In a world where there are tens of millions who need food and clothing, which they cannot get, such a condition is sure to indict the social system which makes it possible.

In the main, the remedy lies in distribution and marketing. Every proper encouragement should be given to the cooperative marketing programs. These have proved very helpful to the cooperating communities in Europe. In Russia, the cooperative community has become a recognized bulwark of law and order and saved individualism from engulfment in social paralysis. Ultimately they will be accredited with the salvation of the Russian state.

There is the appeal for this experiment. Why not try it? None challenges the right of the farmer to a larger share of the consumers' pay for his product, no one can dispute that we cannot live without the farmer. He is justified in rebelling against the transportation cost. Given a fair return for his labor, he will have less occasion to appeal for financial aid, and given assurance that his labors shall not be in vain, we reassure all the people of a production sufficient to meet our national requirement and guard against disaster.

The base of the pyramid of civilization which rests upon the soil is shrinking through the drift of population from farm to city. For a generation we have been expressing more or less concern about this tendency. Economists have warned and statesmen have deplored. We thought for a time that modern conveniences and the more intimate contact would halt the movement, but it has gone steadily on. Perhaps only grim necessity will correct it, but we ought to find a less drastic remedy.

The existing scheme of adjusting freight rates has been favoring the basing points, until industries are attracted to some centers and repelled from others. A great volume of uneconomic and wasteful transportation has attended, and the cost increased accordingly. The grain milling and meat packing industries afford ample illustration and the attending concentration is readily apparent. The menaces in concentration are not limited to the retarding influences on agriculture. Manifestly the conditions and terms of railway transportation ought not be permitted to increase the undesirable tendency. We have a just pride in our great cities, but we shall find a greater pride in the nation which has a larger distribution of its population into the country where comparatively self-sufficient smaller communities may blend agricultural and manufacturing interests in harmonious helpfulness and enhanced good fortune. Such a movement contemplates no destruction of things wrought, of investments made, or wealth involved. It only looks to a general policy of transportation, of distributed industry, and of highway construction, to encourage the spread of our population and restore the proper balance between city and country. The problem may well have your earnest attention.—From President Harding's Message to Congress.

Saturday morning's session was opened by Congressman Phil D. Swing of Arizona in urgent appeal to all states of the Southwest to get together in support of federal handling of the entire project. "It is time for the states to drop their mutual distrusts," he said, "now at the time when the nations of the world are getting together to clear up their mutual distrusts." He quoted Secretary Hoover, now definitely announced as a member of the Interstate Colorado River Commission, as saying that the project can only be developed under federal control on a comprehensive plan for the benefit of all the states.

Further he urged that the need for development was immediate and would provide the boys of the American Legion opportunity to build up the reclaimed land, not for themselves alone, but for all of us. "We will have to reverse the trend to the cities or people will have less to eat and pay more for it. We will not be raiding the treasury for them, but giving them a chance to produce food."

Mayor Bartlett of Berkeley followed with facts proving economy and success of municipally managed utilities. Mayor Bartlett has been in the fight for many years. He knows the rules, he knows all the dodges of his opponents, and hits straight from the shoulder in perfectly businesslike and friendly style.

"Our problems of publicly managed enterprises can only be solved by careful and reasoned work; they can't be solved by sentiment. Publicly managed enterprises have been added to from time to time as the needs of the people and their growth made it imperative. Many things now universally accepted were once bitterly questioned; new ones will come in turn. When I was a boy in Alameda our house was drained into a cesspool; now into municipally managed sewers; so it will be with water supply, with power and light." "Berkeley buys its water from private companies. Since the beginning of the war we have had three raises in water rates and the company is asking the railroad commission for a fourth. This in face of the fact that municipally owned water systems practically unanimously have kept pre-war rates."

In speaking of the proposed California Water and Power Act, he said it was not put under the railroad commission because its chief duty was to fix rates, whereas the rates of municipal projects are automatically fixed—at cost.

Municipalities can build projects more cheaply than private companies because on their security they can borrow at half the interest rates which private companies must pay. They can operate at half the cost because the overhead in salaries is practically cut in two. For instance, the president of the Pacific Gas and Electric receives $30,000; Mr. Mulholland, in charge of the water and power department of Los Angeles, gets $15,000. These facts, he added, were supplied by the railroad commission, not by the corporations. Another cause of high charges by privately owned utilities was the maintenance of a huge surplus. He understood that one such concern was forced by the railroad commission to cut the salary of its president from about $58,000 to about $30,000—but the railroad commission can't stop the company taking that lopped off $28,000 from its surplus fund.

In closing he said the same principles and facts apply in a larger way to the development of the great Colorado basin project. "We must cooperate and cooperate in accordance with a well considered plan. We want the Colorado developed, and only one agency can develop it, and that is the federal government. When the government has built the dam, then we will have our local machinery ready to receive and carry and distribute the water and the power within our own states to our own people, the government forever maintaining control and distributing according to the rights and needs of the several states. "The great Southwest should stand together and develop as a whole, and we want to do our share in making that possible."

Mr. Mulholland, chief engineer of the Los Angeles bureau of power and light, was greeted with long and hearty applause, the audience, almost to a man, rising in spontaneous tribute to his ability and accomplishment.

He expressed his deep satisfaction, as had Chief Electrical Engineer Scattergood, preceding him, in the statement by Secretary Fall of the purpose of the government to investigate fully and keep in its own hands the development of the Colorado. Also he especially called attention to the urgent need of a dam on the Colorado to save the people at its mouth from destruction. "The Colorado is a great writhing snake and if its energies are released has tremendous power of destruction; controlled, it will give valuable service. This power we must preserve in public ownership. We cannot tolerate that the stocks that control it should be owned in Paris or London or anywhere else; it must be held for us and for our children for all time."

The declaration of Secretary Fall was a bombshell; its explosion stirred up the dust, but the result was a wholesome and wholesale clearing of the atmosphere. Proponents of public ownership in California felt that the whole proposition had been placed on solid foundation and were ready to drop discussion and go home or to San Diego to attend the formal hearing by the secretary—the matter was in hands more competent than theirs, in fact, just where it belonged.

Representatives of the power companies were not so happy; neither, it appeared, were the delegations from the other states, for they apparently had come from their homes under great fear of the grabbing propensities of Los Angeles. They, no doubt, will soon realize that their rights are secure in the hands of the federal government. That at least is the confident hope of the public ownership people.

The meeting was abruptly adjourned at 3 o'clock without presentation of resolutions which, it was said, had been carefully prepared by the power companies and some of the delegates from the six dissenting states. The public ownership people, who were responsible for the adjournment, felt that the opposition was "trying to slip one over" in a statement which, while apparently only urging speedy and comprehensive development of the Colorado, was in reality endorsement of private development.

CONVENTION NOTES

Somebody did one big job in working up an interest in this convention of the League of the Southwest. The general impression seemed to be that Arnold Kruckman, secretary and all around hard worker, got into the traces with a corps of workers and made plans which were most successful in securing a great attendance. Every state of the Southwest was represented.

* * *

Chairman von KleinSmid makes an ideal presiding officer. He is quick and just in his decisions and has a sense of humor which saves the day when the tension is close to the breaking point.

* * *

"You are representatives of the seven best states of the Union and you should show by your ability to cooperate in this biggest economic problem before the United States appreciation of the greatness of these Southwestern states." From the chairman's address.

* * *

There are 245,000 square miles within the boundaries of the Colorado river basin. Of all the freak problems before engineers none has ever equaled control of the Colorado. Not only does the great quantity of silt in its water complicate the situation, but its variation of discharge from a maximum of 200,000 second-feet down to a minimum of 3,000 creates an unparalleled situation.

* * *

In addition there are the more or less conflicting interests of seven states and two nations at stake. It will be many years before we will have all the problems settled to the satisfaction of us all.

* * *

One of the speakers told us how many millions of horse power were going to waste every year, never to be recovered. We are not sure, perhaps it was six or seven million. But in any case it was enough that it should impel intelligent people to secure its use as soon as possible. It is self evident that that use will not be secured save through cooperation.

* * *

Seasonal equalization can only be secured through storage.

* * *

Meetings were held in the Polytechnic high school, and about the only complaint was in effect that the chairs were not made for real men. However, they were fairly comfortable. The ventilation was good and acoustics satisfactory, and the boys made excellent ushers. The cafeteria of the school was available to all.

* * *

The Mission Inn was headquarters, and the Miller family and the assistants at the hotel could not have done more for the comfort of their guests.

MACHINERY MODERNIZES FARMS

More than ever farmers are turning to invention and science to do heavy work of the farm. Machinery that is being used by progressive farmers everywhere has paid for itself many times over in time and labor saved and results achieved.

The cost of this machinery is relatively small. Most of the heavy, hard work of the farm can be done by machines. Agriculture is one of the five basic industries of the country and should keep pace with the progress of invention. The farmer is as much a business man as the commercial and industrial leaders in the cities and in many cases is more vital to the economic life.

The fruit and agricultural bureau of the Sacramento chamber of commerce is making definite effort to work with the farm bureau.

Reliable Power for Farm Service **U.S. MOTORS**

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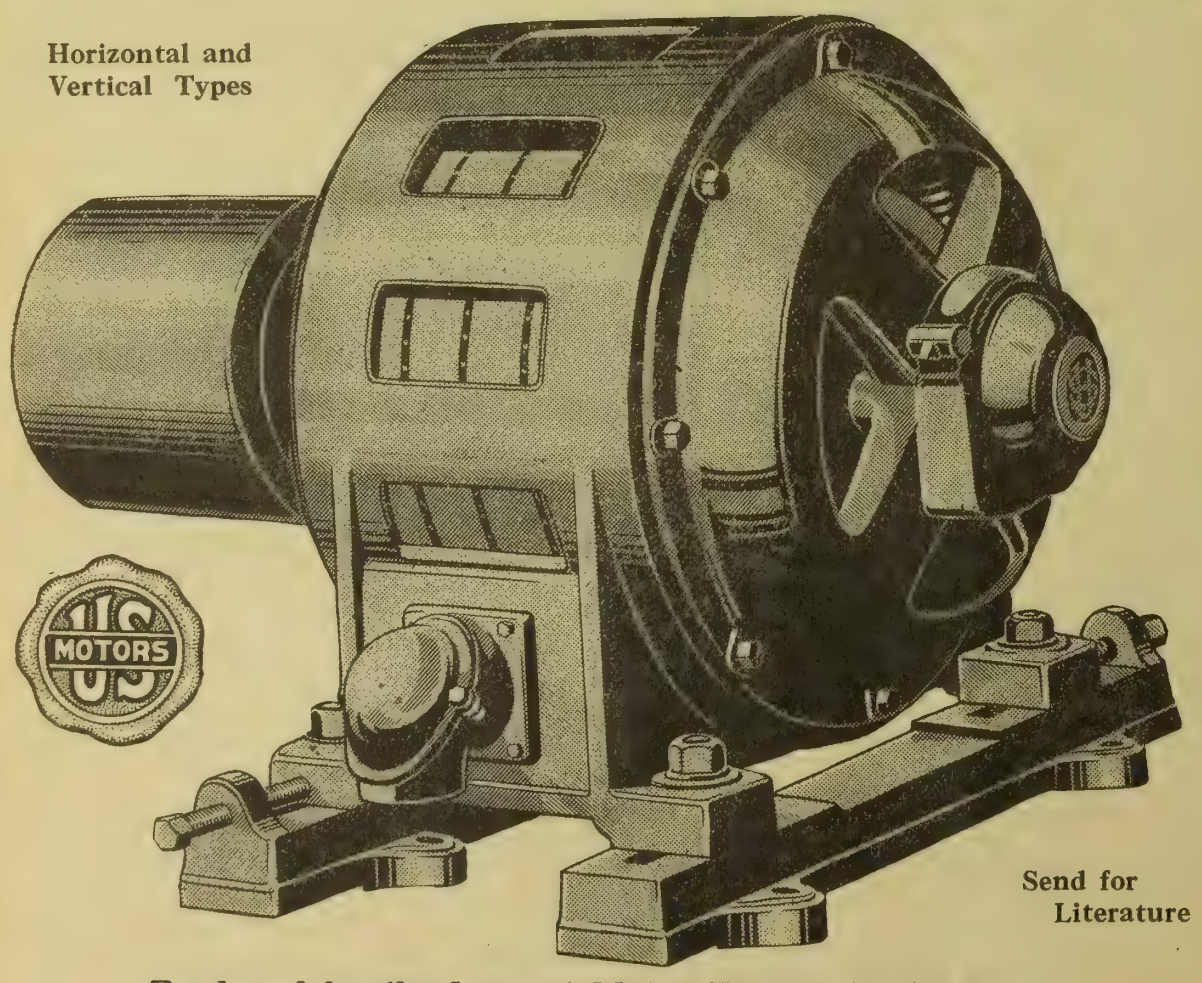

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Orange County Citrus Institute

THE third annual Orange County citrus institute, under the joint auspices of the university extension service and the county farm bureau, was held at Santa Ana, December 8-9, the farm bureau president, W. M. Belding, presiding. Mayor John Mitchell of Santa Ana welcomed the delegates, the glee club sang, and thus was the program launched.

The first paper was on the cost of production of oranges and lemons, illustrated with charts, by F. C. Wallschlaeger, secretary California Citrus League. The next, and one that occasioned much interest, was on the saving to the growers through water transportation over rail shipment, by A. E. Bennett, second vice-president California Fruit Growers Exchange. This we append. The influence of foreign plantings was sketched by Bruce McDaniel, and Farm Adviser Wahlberg outlined a plan of work for a citrus department of his office.

In the afternoon, after some instrumental music, came more vocal numbers beginning with one on "Meeting Increased Production in Citrus," by P. S. Armstrong, California Fruit Growers Exchange, after which Francis Cuttle gave a talk on maintaining and augmenting the irrigation water supply of the Santa Ana Valley, a matter of which he has made a long and deep study. The next was a frost paper which was, however, warmly received, by Floyd D. Young, meteorologist of the United States weather bureau, which closed the first day's program.

The Second Day

More music, followed by the odorous subject of "Fertilizers," by Dr. W. P. Kelley, chemist of the citrus experiment station; then a paper by Doctors Barrett and Fawcett of the citrus experiment station, on the menace of root diseases to citrus trees. After lunch orchestral music and a vocal solo tuned the ear of the audience to receive a report on citrus pest control by Harry S. Smith, in charge of pest control, state department of agriculture. R. S. Woglum, the well known entomologist, told of the present status of citrus pest control in Southern California. E. M. Utt and D. Eyman Huff reported on progress looking to the establishment of a county insectary. J. D. Culbertson, of the Limoneira Co., Santa Paula, had a paper on stability of labor on the ranch. The same problem in the packing house was treated by C. L. Crumline of the La Habra citrus association, and the economy of permanent labor was argued by C. V. Newman, manager San Joaquin Fruit Co. The institute closed with "Sanitary Housing" by Dr. Chas. L. Bennett, of San Dimas.

* * *

WATER TRANSPORTATION FOR CALIFORNIA CITRUS PRODUCTS

By A. E. Bennett

Ever since the birth of commerce transportation has been its twin brother. Early in the history and traditions of mankind we read of the ships of the sea and the ships of the desert. Noah was the first ship builder on record, and even to this day designers have not been able to improve on the lines and proportions of the ship which he built. And never since that time has any ship been called upon to carry so promiscuous a cargo.

Great advances, however, have been made in caring for the cargo and in the speed of ships. Up to the time steam power was discovered and applied to the means of transportation, commerce was meager and developed very slowly. Even as late as our grandfathers' time there was little barter and sale, compared with our day. They were their own spinners and weavers, shoemakers, cabinet makers, bakers, butchers, candlestick makers, and so forth. Each family was sufficient unto itself, unless it went in for the luxuries of the day.

When, however, in the course of the evolution of time mechanical power was applied to the vehicles of transportation commerce grew by leaps and bounds. Today a family of average means in Southern California has access to the products from the four corners of the earth. Almost daily they call upon their merchants for the spices of India, the teas and silks of the Orient, the fruits of Hawaii, the hardwoods of the Phillipines, the textiles, glass and porcelain of Holland, Belgium and France, the chemicals of Germany, furs of the extreme North, fruits of the Tropics, coffee of Brazil, cereals of the Middle West, and meat products from our mountain ranges and South America.

In our day commerce has grown to tremendous proportions, so that transportation has become a great problem. The main economic problems as I see them are just three in number—production, transportation and distribution.

When it comes to production of vegetables, fruits and nuts California is the marvel of the world in the tonnage produced per acre and in the high standard and excellence of the products. There is hardly a fruit known to commerce but that somewhere within our borders is being produced in abundance and of the very best standards. Apparently the only limit in volume of most fruits and vegetables is a profitable market.

With regard to distribution, that problem is being solved by our many splendid growers' cooperative associations, with the California Fruit Growers Exchange setting the pace, having in the year just closed shipped 43,592 carloads, or 72½ per cent of the citrus shipments from the state, giving an even seasonal distribution, and also an equitable distribution to all markets.

I think that we may claim with perfect candor and honesty that we of California are a long way on the road to solving the problems of production and distribution. But transportation is a different matter. Never in the history of the fruit industry of California have freight rates and railroad service cost so much. In fact, they stand today at about 100 per cent above normal. We have here products that have to find markets averaging 2500 miles or more from the point of production.

Up to the present time the growers have not seen their way clear to help themselves in this matter and are at the mercy of the interests controling the railroads. A new deal seems to be on the boards. Today we stand at the parting of the ways. A combination of circumstances of large dimensions has united to make it possible for citrus growers to help themselves in this very vital matter. I will mention three or four of them:

First—Following the close of the Great War our government finds itself in possession of many ships which it must get into service. Among these are a number that are admirably adaptable to the fruit business; just the right size for economy of operation, and the best of lines for speed, with a surplus of power for refrigeration.

Second—Government officials having to do with these ships have a sympathetic understanding of our problems and are desirous of alloting some of these boats to us.

Third—Railroad freight rates are and have been so high, and railroad executives have shown so little interest in our problems that the growers' determination to help themselves has been aroused.

Fourth—The condition of the industry from an organization standpoint is such that the growers are now able to come to their own assistance.

In water transportation expensive rights of way do not have to be purchased; road beds do not have to be built and maintained; heavy mountain grades do not have to be negotiated, nor burning deserts crossed. The cargo will not be exposed to sudden changes of temperature. The shipper will not receive inspection reports reading: "Frozen in transit," or "In a heated condition caused by improper ventilation." These conditions will by up-to-date equipment be at all times under the control of the ship's crew.

(Continued on Page 630.)

60300 Gallons of water per minute

When the Salt River Valley Water Users' Association decided to reclaim more than a hundred thousand acres of land in Arizona they standardized upon Layne & Bowler Turbine Centrifugal Pumps. To date 52 of our pumps are in operation in that famous project and 20 more are being installed. The present production is 60,300 gallons per minute and the pumps are running night and day—over 80 million gallons every day.

This is but one of many immense projects where Layne & Bowler Pumps are assisting the land owners. The same careful service our Water Engineers give to the largest projects is available to the purchaser of a single pump. We can make immediate deliveries of pumps to early purchasers.

Layne & Bowler Corporation
900 Santa Fe Avenue Los Angeles
"World's Largest Water Developers"

Layne & Bowler Turbine Centrifugal Pumps

Legal Queries

Louis B. Stanton, attorney, 343 Wilcox Building, Los Angeles, will answer legal queries in this department.
Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 317 Central Ave., Los Angeles.

Correspondence School Contract

I signed contract for correspondence school course. About a week thereafter found I could not proceed with it and notified school that I would forfeit the deposit. The school now insists upon full payment. Can they enforce such payment?—Subscriber, Lankershim.

It would depend entirely upon the form of contract as to whether it could be enforced. Generally speaking, as long as one party offers to perform, he is entitled to receive the full account for which the contract was made. In other words, a party cannot cease to operate under a contract at his pleasure.

Selling Water

I do not wish to become a public utility but I wish to supply my neighbors with water for hire. Can this be done and is the agreement sent in sufficient for that purpose?—Subscriber, Hollister.

You should take any such matter up with your local attorney, as it may be possible that some arrangement may be made whereby you may be absolved from subjection to the railroad commission. Generally speakking, however, a public utility is defined as any person or corporation who performs service for or delivers commodities to the public or any portion thereof. This last phrase is defined as the public generally or any portion of the public, including any person or private corporation or subdivision of the state for which the service is performed or delivered. The agreement attached hardly amounts to anything in that it specifies no term during which the water will be delivered, manner in which it will be delivered, or price for which it will be delivered.

Veteran's Aid

I enlisted in the service from New York. Since the war, I have taken up my residence in California. Can I take advantage of the California loan act?—Subscriber, Walnut Grove.

The California act specifically provides that those persons who are entitled to its benefits are only those who were at the time of their enlistment, induction or drafting bona fide residents of California. It would be possible that you might be able to take advantage of any act which was passed in New York.

Building Owned by Tenant

How can a tenant place a building upon rented land and be entitled to remove it when he vacates the land?—Subscriber, Adelaide.

The general law concerning fixtures prescribes that a tenant may remove from the demised premises at any time during the continuance of his term anything affixed thereto for the purpose of trade, manufacture, ornament, or domestic use, if the removal can be effected without injury to the premises, unless the thing has by the manner in which it is affixed become an integral part of the premises. It is further provided that when a person fixes to the land of another, without receiving permission from the owner to remove the thing placed, it belongs to the owner of the land. It is quite apparent under these provisions that where such a thing as a house is concerned, it would be necessary to procure an agreement from the owner of the land in order to permit you to remove it.

Homestead

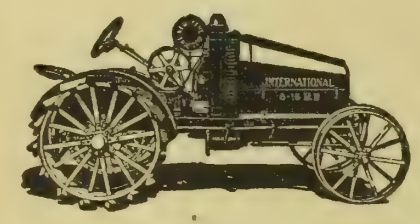
A wife bought a house and lot with her separate funds and later homesteaded the property. Does the husband succeed to this property or can the wife's son by a former marriage claim a part?—Subscriber, Mendocino.

If the homestead selected by the husband and wife or either of them during their coverture and recorded while both were living is selected from the separate property of the person selecting or joining in the selection, it vests absolutely in the survivor. If it was selected from the separate property of either without his or her consent, it vests in the person from whose property it was selected and in his or her heirs or devisees, subject to the power of the superior court to assign it for a limited period to the family of the decedent.

Books Not as Represented

My wife gave a book agent a subscription. The books have been delivered and the subscription was on the installment plan. Some of the leaves were loose. The book is undesirable and I desire to return it. Can I be held liable for the full amount?—Subscriber, Santee.

If the books were defective or not as represented, your wife is certainly entitled to rescind the contract, return the books and demand return of moneys paid. Any action on the contract could be defended on the ground of misrepresentation. As you did not sign the contract and as books are not necessaries of life, you certainly could not be held for the amount.



The
International 8-16 Tractor Is Ideal Power for Plowing
(Combine With It a P&O Plow)

IN THOSE states where International 8-16 Tractors have been well known for several seasons they need no introduction. New owners are buying on the recommendation of old users, and on thousands of farms the popular 8-16 may be seen working efficiently, converting cheap kerosene into economical farm power.

If yours is new country for the International 8-16, let the International Dealer show you this adaptable small tractor. You will find it most efficient, economical power for plowing. In addition, an International 8-16 Tractor will render you satisfactory service, at belt and at drawbar, from January to December.

The International 8-16 because of its light weight, snug compactness, ease of control, generous reserve power above its rating for emergency pulls, three speeds forward, economical operation and general fitness for diversified service, is highly popular with farmers in every branch of agriculture.

Remember that the ***International 8-16 Tractor now sells for $900*** — the lowest figure at which this tractor has ever sold. The new price includes all the necessary equipment — platform, fenders, governor, belt pulley, etc. If you require larger power, keep in mind that the famous ***Titan 10-20 Tractor now sells for $900,*** and that the ***International 15-30 Tractor has been reduced to $1,750*** — both selling at the lowest price at which they have ever been sold. All prices are f. o. b. Chicago. These prices certainly justify immediate tractor investment. See our dealer for full information as to deliveries and terms.

INTERNATIONAL HARVESTER COMPANY
CHICAGO OF AMERICA (INCORPORATED) U S A
92 Branch Houses and 15,000 Dealers in the United States

Queries Answered

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Budding and Grafting

Will you please inform me the proper time of year to bud citrus trees and the best time to graft the mulberry tree? What time is best to prune the loquat?—Subscriber, San Ysidro.

It is now late for fall budding of citrus trees, and it will be best to wait until the first of June and put in buds which will grow at once. Mulberries are best worked in early spring, varying a little with the seasons, but the first of February is about the time. Loquats scarcely need pruning and it is seldom done. The best time is immediately after crop is ripe. What little is needed, generally, may be done at any time, even now, though trees are in bloom.

Water Rates

What is a fair rate for water for irrigation purposes in Orange County? We are paying 70 cents per hour per 100 miners inches. How may we know we are receiving full measure? So far as we know the water has never been measured.—Subscriber, Orange County.

If the cost, including attendance, is 60 cents per hour for pumping 100 miners inches which has been delivered for $1 an hour at the well should be increased by the power cost advancing 25 per cent, either because of higher charges or lower water level, the same amount should be added to the delivery price, which in this case would be 15 per cent, or $1.15 per hour for the water. The difference between 60 cents and $1 per hour will not amount to more than enough to re-

place the wear of machinery and the repairs to well pit in the term of ten years, since the depreciation of pumping machinery, other than motors, is about 25 cents per hour on a plant with 100 inches capacity.

There are many kinds of measuring weirs that are exact, but they require an expert to place them properly. A weir that will be approximately correct can be made by cutting a notch in a board five inches deep and long enough to let all the water pass through. Place this in the ditch where the water has a clear drop away from the lower side but will move slowly above the weir. Drive a stake in the bottom of the ditch about two feet upstream from the weir and so the top of the stake will be level with the bottom of the notch. Then have a slide to close the notch until the running water stands five inches above the top of the stake when all is running through. There will then be five miners inches (ordinary usage) passing for every inch of width of the open gate. If the water is in an open cement ditch the cross section of the space occupied by the water can be measured and the velocity of the flow obtained by timing a float, which should be weighted so as to stand upright in the water. In this way the amount of water passing a point in a minute can be determined. The ditch should be well cleaned before beginning the measurements and a deduction of ten per cent made from the result obtained, because of obstructions on sides and bottom of the ditch, unless it is very smooth, when a less deduction should be made.—J. B. N.

Black Monukka

Can you direct me to a Black Monukka vineyard? I would like to see the vines growing.—Subscriber, Modesto.

There are no commercial vineyards of Black Monukka grapes in California at the present time with the exception of some small acreages in the Imperial Valley. The other plantings of this variety are individual vines scattered here and there. A few vines are growing in the government experiment vineyard near Fresno.—F. K. H.

Spraying Cabbage

I put cabbage plants in about a week ago. They are doing fine, have all set. How soon should they be sprayed and what would be a good solution?—Subscriber, Covina.

At this season the cabbage aphis have about ceased their labors and will soon be gone. If they should bother a nicotine spray, dry or in solution, should be used, with a slight preference for the dust spray.

Alicante Bouschet Cuttings

Could you explain in your next issue how to prepare Alicante Bouschet cuttings—what length they should be cut before planting for rooted vines, and how they should be handled?—Subscriber, Fair Oaks.

Alicante Bouschet cuttings are made the same as any other grape cutting. They should be 14 or 16 inches in length with the cut at the bottom immediately below the joint and cut at the top at least an inch above the joint. Not more than two cuttings should be made from the cane since the wood near the base is the best for this purpose. After making, the cuttings should be tied loosely in bundles and buried in fairly sandy, well drained soil, preferably with the butt ends up. The soil in which they are buried should be kept moist, but not too wet; until planting time. Frequent examination will indicate the condition of the cuttings throughout this period.—F. K. H.

Dividing Asparagus

I would like to know if dividing up old asparagus crowns is as good as getting new roots.—Subscriber, Newman.

Unless old stock has deteriorated and is considered poor, its division would produce as good stock as any. Old stock so divided generally improves over past condition if roots have not been divided for some years.

Alfalfa for Fertilizer

Reading in the Cultivator of November 26 your "Substitute for Manure" question and answer, I would like you to tell the Ontario subscriber to buy a bale of good alfalfa hay and break or grind it up as fine as possible and dig it deep into his 500 square feet of garden. I am not sure, but think a sack of alfalfa meal would be fine and just the thing. The next best is bean straw. I get this from the farm bureau, which recommends alfalfa hay as the best substitute for stable manure. Tell your subscriber also for me to join the farm bureau unless he is already awake.—Wm. W. Kent, Valyermo.

BEEKEEPERS' SCHOOL

The college of agriculture, University of California, held a six day course in advanced beekeeping for commercial beekeepers at Exposition Park, Los Angeles, December 5-10. Both registration for the course and attendance were fair.

Geo. A. Coleman, instructor in entomology at Berkeley, has been acting as secretary and enrollment clerk and proves a good rustler. The instructional staff consists of specialists from the United States department of agriculture, state college of agriculture, members of the state beekeepers' association and practical apiarists from various parts of California. Added to these are a few experts in kindred lines from outside the state, lecturers on native honey plants, in fact information is given on every subject that could interest a practical beekeeper. The meetings were held in the auditorium of the state exposition building.

FARM BUREAU'S SECOND YEAR

The Farm Bureau Federation is mailing to county farm bureaus an official review of the activities of the American Farm Bureau Federation from January 1, 1921, to November 1. It is a gathering of facts regarding federation during the ten months and a look forward to the coming year's work. It is filled with tables giving information as to more intimate activities of the federation and gives special attention to the agricultural bloc and its accomplishments.

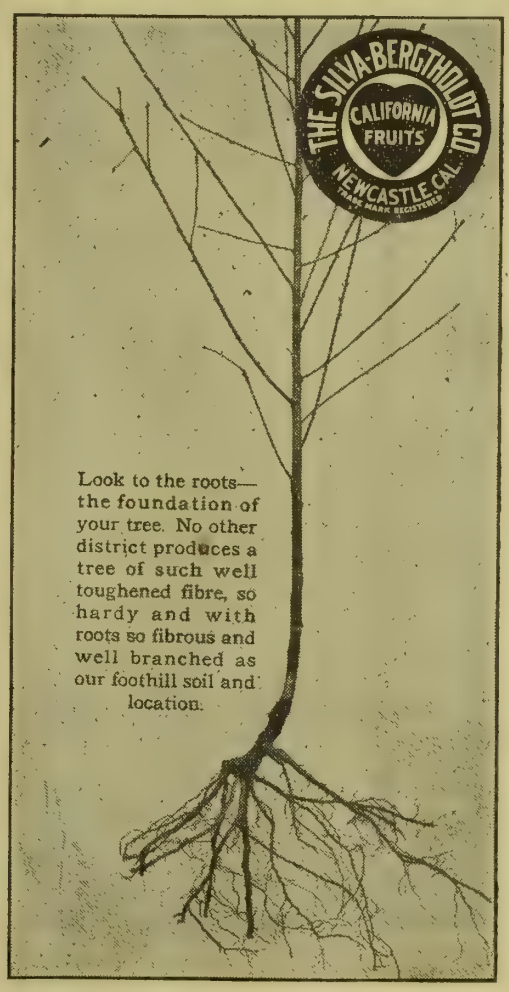
THE FARM WOODLOT

There should be set aside upon every farm a small area for a home woodlot. The trees planted there could later be thinned and the trees withdrawn used for fence rails, posts, etc. While those left standing were growing to maturity they would form a fine shaded playground or a family or neighborhood picnic ground. At some future time the timber would doubtless prove valuable, as many species, easily procured, yield lumber of high ornamental value. Through all its growing years the woodlot could be a shelter and a windbreak protecting residence, outbuildings, or stockyards.

AFTER THE ACCIDENT

In case your car is involved in a smash-up get these facts down on paper just as soon after the accident as possible: Name, sex and address of injured persons, driver and witnesses, license numbers of other cars, exact location, date and time of day, weather and street conditions, circumstances and blame, and make pencil sketch showing details. Stay on the ground and talk only to your attorney. This is the advice of the National Safety Council.

Plant an Orchard



Look to the roots—the foundation of your tree. No other district produces a tree of such well toughened fibre, so hardy and with roots so fibrous and well branched as our foothill soil and location.

Write us for complete copies of the announcements of the "Bergtholdt Plan." This plan is a vital issue to every fruit grower—to all California. It means your success and ours in fruit growing. The responsibility for this plan is upon every individual fruit grower — boost for it.

Growing fruit is the best paying business in California.

The acid test of any business is not what it will do under favorable conditions, but what it will do under adverse conditions.

Even under this year's depreciated values, the orchardist with a block of **Prunes, Bartlett Pears, Apricots, Cherries, Raisins, Shipping Grapes, Clingstone Peaches, Drying Peaches, Fall Pears, Almonds, Shipping Peaches, Shipping Plums, Canning Plums,** and **Figs** will make more money than the grower of grain, hay, alfalfa, beans, rice or the dairyman.

Every acre of land adapted to fruit growing that you now employ in growing grain, hay and other crops, is too valuable for fruit to be employed as you are now doing.

Every year that you grow these other crops instead of planting your acreage to orchard, represents not only a dead loss in money, but more than that, one year's loss of life's opportunities.

The trees you plant now will, five or six years hence, assure your share in the profits inherent to the California fruit grower.

We offer for your planting the most complete assortment of commercial fruit varieties.

Our trees are the best that care in propagation and efficient workmanship can produce.

Our catalogue, full of accurate practical horticultural information and suggestions, and our thirty years' experience in fruit growing, and fruit marketing, are at your service for the asking.

Submit us a list of your tree wants for quotation while the varieties you desire are still available in our foothill grown stock.

Write me today.

J. E. Bergtholdt
Sec. and Mgr.

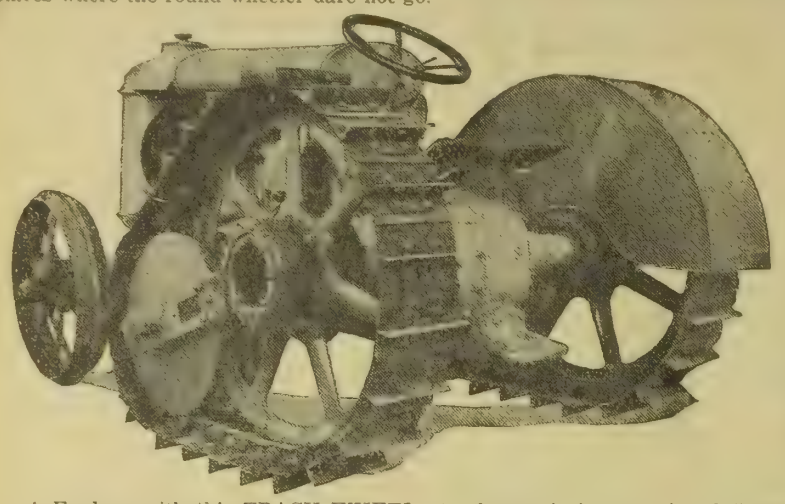
Member of the Bud Selection Association of California

SILVA-BERGTHOLDT CO.
NEWCASTLE, CALIF.

Make a TRACK-LAYER of Your FORDSON, SAMSON or Other Small Round Wheel Tractor

that you may have and increase the pulling power 50 to 100 per cent. or even better in some places.

Six hundred square inches of ground bearing surface enables the tractor to negotiate soft and sandy soil, climb steep hills, and go pulling its load over places where the round wheeler dare not go.



A Fordson with this TRACK WHEEL attachment is in operation daily at Davis and you are invited to see it any day.

Those attending the TRACTOR COURSE at the University Farm School on Jan. 2-7 will have an opportunity to witness its performance.

An official test has been made by Professor L. J. Fletcher, a copy of which is at your disposal.

For further information see or write

Schmeiser Manufacturing Company

No. 50 3rd Street, Davis, California

Roeding's True Trees

Make Fruit Growing Profitable
Plant Roeding's "TRUE TREES"

New 1922 Illustrated Catalogue

(65 Pages)
Just Off the Press
Write for Your Copy

General Stock of Deciduous and Citrus Fruit Bearing Trees, Ornamentals, Vines and Roses.

CAUTION

Some varieties will be scarce again this season. Order early and avoid disappointments.

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WRITE FOR FREE BOOKLETS

We have illustrated, descriptive booklets on all crops. A postcard telling us the crops you are interested in will bring you the booklets free.

NITRATE of SODA

The quickest and most available source of Nitrogen.

Direct Representatives

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RHUBARB AND BERRIES

Wagner's Giant Winter Rhubarb and all varieties of Berries. Also a general line of Fruit Trees and Nursery Stock. Write for Catalog and Prices.

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Kirkman Nurseries

Fresno, California

ORANGE COUNTY CITRUS INSTITUTE

(Continued from Page 627.)

Water transportation always has been, is now and always will be, the cheapest method of transportation, as has been so definitely proven on the Great Lakes where freight is loaded, transported and unloaded at the cheapest cost per ton of probably any place in the world. This fact has transformed Detroit from a most beautiful residential city to a noisy, dirty, smoky, throbbing industrial city, the center of the auto industry. Freight rates make and unmake industries. This is no new thing under the sun; it has ever been so.

Our investigations in the East indicate that we cannot expect any of the established coast to coast steamship lines to furnish a refrigerated fruit service for us, for the following reasons:

The oldest and strongest steamship companies now operating are dominated by railroad influence through capital sources and will not compete.

Those steamship lines not dominated by railroad influence are operating U. S. shipping board ships and have not the capital required to install a sufficient amount of refrigerated space in the number of ships required to give the service.

Under the U. S. shipping laws a foreign built or owned ship cannot engage in coastwise business.

As soon as the new shipping board was organized we opened negotiations with it, having in mind the securing of ships especially adapted and fitted for service as fruit carriers, as well as carriers of other California products, and of products manufactured in the East and consumed in California.

After many weeks of negotiating we secured a tentative agreement with the shipping board by which it will permit us to select six of its ships for our service. It will install cold air refrigeration in about two-thirds of the space in the ships, and lease the ships to us at a very low rate on a "Bare Boat Charter," for five years with option to purchase, we to furnish crews and operate the ships.

The ships we desire are of 7500 dead weight tons, three decks—fine lines and 15 knots speed—refrigerated in two-thirds of their holds. Each ship would carry a maximum cargo of about 74,000 boxes, but we are estimating average cargoes of 60,000 boxes only, during months of January to October, both inclusive, leaving space in the ship for other cargo to the amount of about 3000 tons East bound.

On the return trip the ships would bring general cargo consisting of dry goods, boots and shoes, chemicals, light steel products, etc., for our local merchants and manufacturers. There is plenty of this cargo for all the ships now operating.

Notwithstanding high freight rates we shipped out of California during the past year November 1, 1920 to October 31, 1921, over 150,000 cars of perishable food products, deciduous fruits, citrus fruits, melons and vegetables, and about 20 per cent of these shipments went to the Atlantic seaboard. It is neither logical nor efficient that this tonnage, produced practically at tidewater on this coast and consumed at tidewater on the Atlantic coast, should be transported over deserts and mountains, facing floods, storms, and extremes of temperature, across the continent by rail, under very defective refrigeration, when it can be carried by water in good steamships under satisfactory refrigeration, in three or four days' additional time, at half the present cost.

Refrigeration by steamship would be maintained uniformly at any temperature desired, and humidity and ventilation would also be regulated. A good steamship will make a run from San Pedro to New York in 15 to 16 days. Therefore, we expect to land our fruit by steamship under proper refrigeration in better condition than the average rail shipment.

As to the quantity of fruit that could be landed in the markets in one cargo, we are assuming average cargoes of about 60,000 boxes, to be divided rateably between two ports—New York and Boston, or New York and Philadelphia. We frequently sell 25,000 to 30,000 boxes in New York auction market in one day and have sold as high as 40,000, so that you see that the average cargo would not supply the two markets more than two days. During the past summer there were sold in New York auction market on several occasions over 300 carloads of California fruits in one day.

Water transportation for fruits under proper refrigeration is not an experiment. The trail has already been blazed. The United Fruit Company has been in the business for years, transporting booth bananas and oranges, and it has developed a very high type of equipment for handling and refrigeration. Oranges are being brought to England from South Africa by refrigerated ships, through the tropics, after having made a 1,700 mile railroad journey from the point of production.

Transportation charges are the most serious burden that our growers now have to carry or ever have carried. Indeed, it is as great as all the other burdens added together. And it is a burden that is a first mortgage on our crops; yes, more than that, it is a first mortgage on all other resources which the grower may posses, for the railroads are not content to look to the returns on the fruit to pay the freight, but exact a good and sufficient and acceptable bond.

We have here a proposition where the grower has first to make an investment in land, then prepare it for irrigation, and bring water to it, purchase trees, set them out, nurse them along for six or seven years before any return worth mentioning comes back, and when the returns commence to come in the railroads talke half for a service upon which they take absolutely no chance in securing the return which they exact and in performance of which not more than an average of ten days' time is required. It is an uneconomic proposition under which no industry can permanently thrive. What is the answer? Providence has made a full and complete solution possible; nature has placed at our very door the means of the cheapest transportation ever developed.

We are not wondering whether this thing can be done. We know from the experience of others that it is entirely practical and possible. The necessary requirements are money, courage and good business sense. I think that it has been demonstrated that we have these qualities in good measure in our producers' cooperative organizations.

One of the drawbacks to shipping by water is that the shipper has the trouble and annoyance of delivering his freight to the steamship company's dock, paying the marine insurance, and in the case of citrus fruits there is the additional drawback that at times the fruit lies on the dock, subject to variations in temperature, for two or three days before the ship is ready to load.

The plan of the California Fruit Growers' Exchange provides that the Producers' Steamship Company shall render exactly the same service to the shipper as the railroads now furnish, viz., the steamship company shall send its trucks to take and receipt for the fruit at the door of the packing house of the shipper, transport it to San Pedro, place it in a pre-cooling plant at the dock, pre-cool the fruit at once, and hold it in cold storage and on the ship until unloaded at the markets in Philadelphia, New York and Boston.

This requires that the steamship company shall own and operate a fleet of trucks with bodies especially constructed for this service, with covers to protect the fruit from sun and rain.

The steamship company will own its dock at San Pedro, with a pre-cooling and storage plant thereon large enough to hold about 200 cars of fruit ready for loading when a ship arrives. In this plant we will install conveyors for taking the fruit from the trucks into the pre-cooling rooms, and from the rooms into the ship, so that the ship may be loaded as rapidly as practicable, and thus reduce to the minimum the delay of the ship in port.

It seems quite certain that fruit handled in this manner, viz., pre-cooled and carried in the ship under cold air refrigeration, will be landed in the markets of Philadelphia, New York and Boston in better condition than the average of our rail shipments.

Our government, our merchants and manufacturers are desirous of building up a great merchant marine for this country. Our government has the ships and our people furnished the money for building these ships;

therefore, the people own the ships, and if we ever have a merchant marine built up on a sound basis, large groups of people among the producers of the United States must take these ships and operate them primarily in their own service. Through the co-operative organizations of producers this can be done. Here in California we have the organizations, we have the production in large volume, through the government we have the ships, and we have the money with which to operate these ships, and transport that portion of our products that is consumed on, and adjacent to, the waterways of the nation, at very low cost, thereby giving us some voice in the fixing of the transportation charges that our present vast and increasing tonnage is forced to pay, and at the same time building up our merchant marine, and eventually stabilizing and expanding our entire transportation system to meet the growing needs of the nation.

PERMANENT ROADS IN ARIZONA

By M. E. Bemis

Maricopa County, Arizona, has completed about one-third of her eight and a half million dollar road building campaign. The farmers are already beginning to reap the benefits in decreased cost of marketing products. The saving to the farmers and others using automobiles or trucks will be no inconsiderable sum when the entire system is completed.

The road so far constructed and the contracts which have been let are for a concrete road of varying widths and thicknesses according to the amount of traffic. In laying out this road system it was planned to make every farm an outlet to the nearest town, and to that end the design of the road system was to build a permanent road within not more than a mile of every farm. This was accomplished with the exception of a few of the districts farthest out. Another factor that was kept in mind was to tie in with state and national highway systems. Nearly 100 of the 300 miles of road will be a part of the state highway system, and more than 60 miles will be on the Bankhead National Highway, connecting with California through Yuma.

TOLLING COTTON

Many of us who are old enough to recall pioneering days may remember the old time grist mill where payment for the making of flour and meal was taken in toll from the grist. Now comes a plan to toll cotton. A dispatch in the daily press says:

"One hundred and fifty bales of Egyptian long staple cotton, the product of Arvin farmers, has begun the first leg of a journey that will carry it to Prague, Czecho-Slovakia.

"The cotton will be fabricated in that industrial center and is later to be marketed through the great English markets at Liverpool and Manchester. The selling arrangement, worked out with the aid of the United States department of commerce, is known as the toll plan. By this method cotton of the highest quality grown in the United States is sent into central European countries, impoverished by war, where it is made into expensive cloth and laces, finally being distributed from world market centers.

"Until the raw material has been transformed into cloth and final sale made to retailers throughout the world growers do not receive compensation direct from the transaction. They are, however, extended loans from the war finance board of 14 cents a pound, running for a period of six months with renewal at the end of that period if final returns from the cotton have not been made.

Kern County's shipment, the first to be made from California, was loaded on motor trucks at the Arvin gin and transported to San Pedro to be shipped to Hamburg.

Kern County cotton planters who have placed cotton in the consignment are L. B. Nourse, H. G. Clardy, C. B. Landers, R. S. Routzong, G. G. Ives and A. T. Nelson, all of the Arvin district.

PROTECTING ORCHARDS FROM WIND

(Continued from Page 623.)

more troublous and winter bareness of foliage welcome to allow sunshine to enter and dry up muddy roads, etc. But in parts where large growing species of cottonwoods, etc., have been planted they are denounced as soil robbers and producers of too much cumbersome litter. In the desert valleys they are being cut out, root and branch. Deciduous species of tamarix and eleagnus have been planted and make good but not lofty windbreaks. Of late years the evergreen Tamarix articulata has superseded in popularity all earlier plantings in hot dry sections where winters are also generally quite frosty. This tree, though somewhat low of stature, grows quickly and thickly, is very hardy, needs little care or attention of any kind. In the Antelope Valley, where protection from wind is desired during blossoming and fruiting seasons only, deciduous fruit trees that leaf out early are planted along roadsides or on property lines. This is a plan quite popular with the pear growers of Antelope Valley. Early apricots, peaches and crab apples protect up to pear harvest. Some set double rows of pears every sixth row in the orchard, across path of prevailing winds, the trees alternating so that a check of surface winds is effected, no space lost or total crop returns reduced below the neighborhood standard or record. In citrus growing districts the use of seedling avocados has been recommended. They are rapid growing, comparatively hardy, thick and heavy of foliage, and therefore effective deterrents to velocity of surface winds. They are ornamental, produce fruit and, possibly, one might so discover or have and thrust upon him a variety that would prove a bonanza.

HONOR TO MRS. TIBBETS

When President Theodore Roosevelt replanted, in 1903, one of the two Washington Navel orange trees which had been brought to California by Mrs. Eliza Tibbets from Washington in 1873, he remarked as he recalled the thousands of acres of Navel trees, every one of which were from the two original trees: "I am glad to see that this tree shows no signs of race suicide."

Although that tree, now over a half century old, is not showing great vigor, it remains the progenitor of many thousands of trees and of a great industry.

But few productive industries can show such increase from such small beginnings.

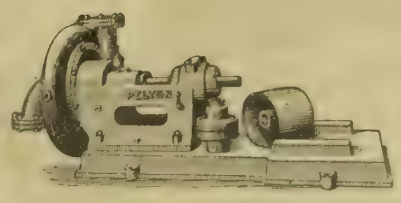
The one responsible for the planting of those two little trees and watering and tilling until their worth was proven, was honored by the citizens of Riverside last Saturday by the erection of a memorial with bronze tablet.

The inscription on the tablet is:

"To honor Mrs. Eliza Tibbets and to commend her good work in planting at Riverside, in 1873, the first Washington Navel orange trees in California, native of Bahia, Brazil, proved the most valuable fruit introduction yet made by the United States Department of Agriculture, 1920."

PELTON CENTRIFUGAL PUMPS

PELTON pumps are suited to either belt or direct connection, and to engine, motor or tractor drive.
The change from one method to another is made at slight expense.



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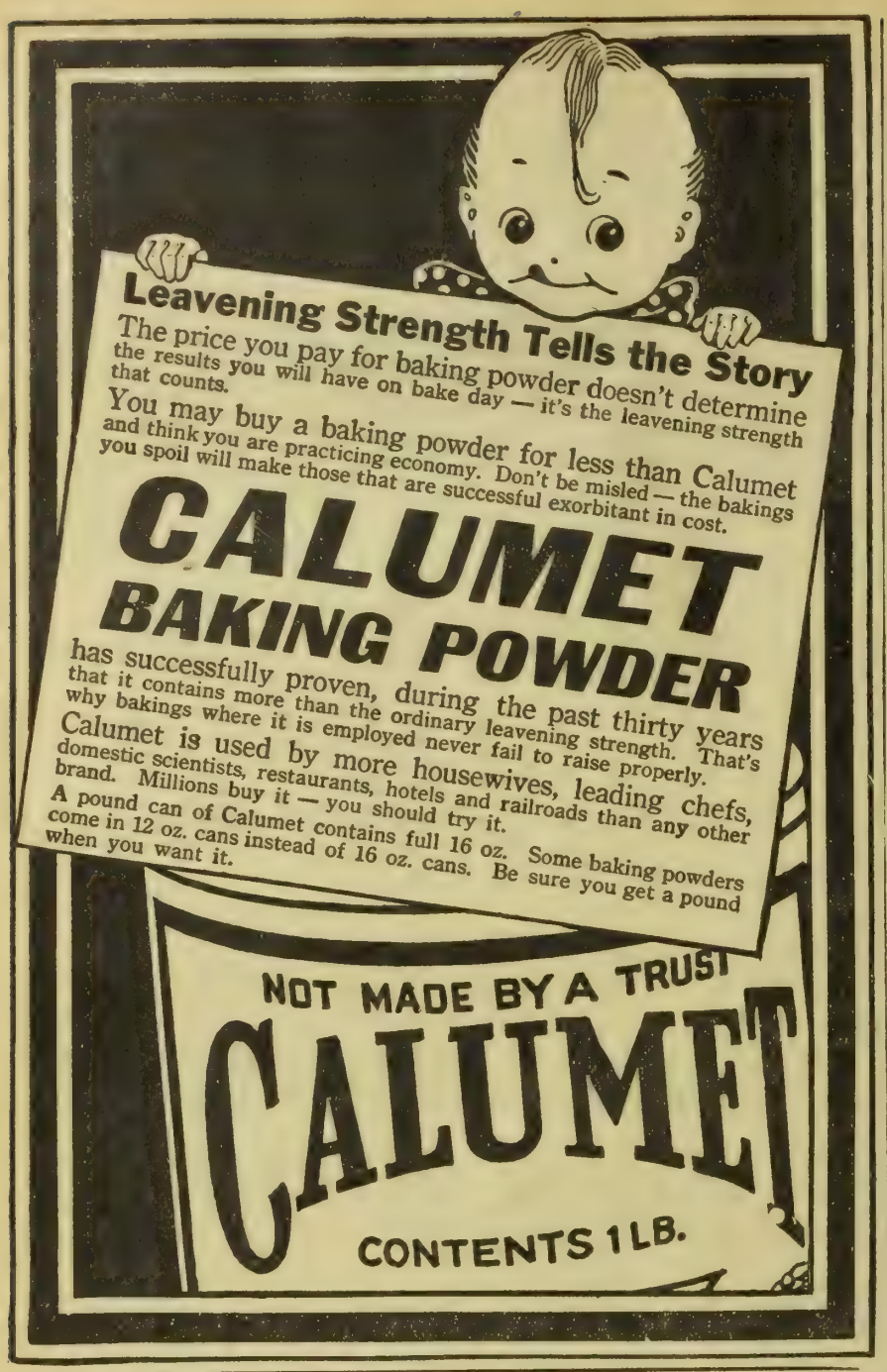
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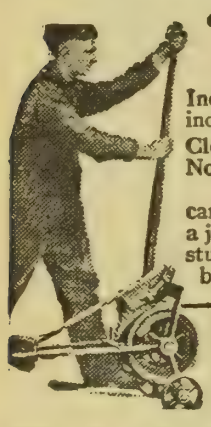

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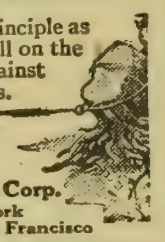

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Household Department

CHRISTMAS GIFTS

She needed pots and a new floor broom
And window shades for the children's room;
Her sheets were down to a threadbare three,
And her tablecloths were a sight to see.
She wanted scarfs and a towel rack,
And a good, plain, useful dressing sacque,
Some kitchen spoons and a box for bread,
A pair of scissors and sewing thread.
She hoped some practical friend would stop
And figure out that she'd like a mop,
Or a bathroom rug or a lacquered tray,
Or a few plain plates for every day.
She hoped and hoped and wished a lot,
But these, of course, were the things she got:
A cut glass vase and a bonbonniere,
A china thing for receiving hair,
Some oyster forks and a manicure set,
A chafing dish and a cellaret;
A boudoir cap and a drawnwork mat,
A sterling this and a sterling that;
A gilt edge book of a lotty theme,
And fancy bags till she longed to scream;
Some curling tongs and a powder puff,
And a bunch of other useless stuff;
Though she inwardly raged, she wrote
To all of her friends the selfsame note,
And said to each of the friendly host—
"Just how did you guess what I needed most?"—Ella Bently Arthur, in Life.

FATHER 'N' MOTHERTOWN

By Annie Hamilton Donnell in The Farmer's Wife

SARAH POTTER was having her short season of actual beauty now when stars shone in her gray and faded eyes. She was getting ready for Aurora! Her soft lean cheeks grew a little pinker every waiting day. She stood and walked straighter; she smiled oftener, as though practicing for Aurora. Now and then the most unexpected thing of all happened—Sarah Potter sang!

When her old husband, Asher Potter, heard those high, thin clarion notes, he sang too, but inwardly in a little music room of his soul that no one, not even Sarah, knew. Asher was a dumb man, the neighbors said, and even Sarah acknowledged it to herself. Only the Architect who designed that secret little room, and Asher who sang in it at rare, glad moments, knew of its existence. Asher was very happy, too, just now. In his way he was getting ready for Aurora.

"I'll make Aurory's bed tomorrow," sang Sarah as she worked—actually sang it in words. Most any words will "go" with the tune of joy. "Today I'll make a batch of cookies for her to take back to school to treat with. She always said, 'Mother, your cookies are the best!' The best, the best, the best!" sang Sarah.

Aurora was all they had, very nearly literally all. Since Asher's stiff old joints had ended his carpenter work, and Sarah's eyes interfered with the delicate old-fashioned embroidery that had earned many difficult but thankful dollars, they had been really poor though they never confessed it even to each other.

If it had not been for Aunt Roxanna, Aurora would not be at a fashionable school this minute packing up to come home for Christmas. Roxanna Potter had married wealth and she had been the only Potter to marry or achieve it.

"Cookies—cookies—cookies! 'Your cookies are the best!'" sang Sarah over the kneading board. What if she made a cooky man! She always had made one, long ago.

"Asher," she called, "you there?" Where else would he be but "there," easing his aching old joints on the sitting room lounge? "Asher, what if I make a cooky man for Aurory? Would you say I'm a crazy old loon?"

"Sally," called back Asher from There, "you go ahead and be a crazy loon! Make two so's if one scorches."

Sarah made three so's if two scorched.

Christmas was eight days off. Aurora was seven off. She would come early on Christmas eve but in plenty of time to hang up her stocking.

"I hope she'll have one mended," smiled Sarah's thoughts. Aurory was so likely not to come home mended. That was really a delight to Sarah; it meant long happy sittings at the mending basket. From conscientious scruples she would scold the child, of course. Scold Aurory!

Another day—two, three more went joyously by.

"The living room worries me, Asher," she sighed, taking a little vacation from joy.

"Living room? What's the matter with the living room?" Asher was not worried. His gaze wandered affectionately from shabby friend to shabby friend.

"Look under your feet. Under my feet—it's worse this side of the room. It couldn't be a thinner rug without it—without it died!"

The emaciation of the faded old carpet was extreme. How would it look to their girl, fresh from beautiful rich rugs? No amount of rearrangement of furniture, of covering up, of hiding could save it. The whole large room was shabby with it. Like the one horse shay it had apparently gone all to pieces since Aurora's last homing.

To Aurora at the fashionable school the days crawled rather than leaped toward her holiday week. A shamed Aurora confessed to herself that she was not thrilled about going home. Of course she ought to be but she was not. Father and Mother and the shabby, deadly dull little old home could wait until June.

"It's so far to go for such a little while——" She broke off the thought midway, to cry scornfully to Aurora Potter, "Shame — for mercy's sake blush, can't you?"

Aurora was 17. Aurora was daintily pretty, petted, spoiled. A number of circumstances excused, a very little, this unnatural frame of mind. Her teachers and friends had done their best to widen the distance between this luxurious life and home.

Home was unluxurious! The memory of it in its humble details was growing more and more appalling to this spoiled young creature. Lest the real Aurora hear, she whispered to herself that she ought to have been born differently, with luxurious surroundings and rich parents. Fate had been unkind.

"I feel luxurious and rich in my bones," she whispered. The real Aurora heard and lashed her with a scathing tongue. The two Auroras often quarreled.

Three days before Christmas two notable things happened in the little Potter home. Sarah Potter went abroad on mysterious errands and a letter came. The letter came last.

"Asher, I'm going out a spell. I've put your liniment and the Weekly Events on the table beside the lounge. You've no need to stir till I get back." She bustled nervously about the room, then suddenly stopping beside the aching old figure, leaned down and kissed Asher. Kisses were not unknown between them but they husbanded them. Sarah husbanded this one now.

"On your bald place to make the hair grow," she laughed softly. "Asher, I wish you didn't ache! I could be so much happier if you didn't ache!"

"You're happy enough now," he laughed up at her. "If Aurory don't come soon you'll burst!"

"Well, I guess I'm not the only—I guess somebody else in this room's happy, too!"

"I wouldn't contradict you," he beamed.

Sarah's first call was at a well to do looking little cottage where she was not known. She was not ashamed but she preferred it to be a strange house. This was purely business on which she had come. The housewife herself came to the door, opening it rather warily.

"I'm not an agent for a living thing," smiled the pink cheeked, star eyed Sarah. Even this "business" she had come on, distasteful as it was could not dim her joyousness. Her shabby old suit could not make her homely and commonplace today.

"I've come to see if I could rent your front room rug," she said hurriedly, to get the worst over. "For ten days, beginning day after tomorrow. I'll pay the rent in advance. Perhaps you don't break weeks. I mean perhaps you'll want two weeks' rent. I'd be willing. I thought—I thought I'd offer three dollars if that was enough."

For very breath the eager voice stopped. Only the fortunate possession by the astonished housewife of a sense of humor saved the situation. She found herself smiling instead of shutting the door. Eagerly Sarah began again.

"My little girl's coming home for a week and the rug on the living room floor won't do—won't do. I can't stand Aurory's seeing the new holes in it! I asked at the corner store and they said you hadn't got any children to be coming home——"

"No," the other woman said quickly. "No, not—now." She was remembering how proud she had been of new things with which to welcome a little girl home, once on a beautiful time. She was not smiling now.

"Then if I could—if you'd be willing——"

"Come inside," the woman said. She led the way to her front room. On the threshold Sarah cried out in dazed admiration.

"Oh, it's a beautiful one! I'd pay for every spot but we wouldn't get any on! There's nothing but Asher's liniment and he'd rub it on in the kitchen."

"Sit down," the woman said. She could not speak more just yet; she must have time. The thought of that little girl who was coming home hurt. Her little girl would never come home.

After a moment she regained her composure.

"I don't think I just caught her name——" she began.

"No, you likely wouldn't. It's a hard name to catch. Aurora—that's it. It means light. Her middle name is B."

"Bee?"

"Just B, letter B. I never told Aurora what it stood for. Her father always told her it was Beautiful. She don't use it now so it don't matter. Somebody else named her—I felt obliged to keep the B of it anyway; it didn't seem fair not to. But I wasn't going to have people laugh."

Half an hour later Sarah Potter issued forth from the well to do little house and hurried away on her second errand. This was to a drug store but not for drugs.

"You keep singing machines, don't you? There's some now, there in the back. How much could I rent one a week for? Beginning day after tomorrow afternoon—and some records. Isn't that what they're called? Two dollars' worth of records and rent. I couldn't go higher than that. Have you got any that play something welcome homey?" She smiled up from her lesser stature to the man's big height. Again Sarah was fortunate. This man could smile instead of scorn. The arrangement was made to their satisfaction and Sarah went joyously home. He said that the rent would be only a dollar and a half altogether. And only one for the rug!

"Bargains!" sang Sarah under her breath. "Bargains, bargains, bargains!"

"Sally, that you?" Asher called as she opened the outer door. "There's a letter from Aurory! No, I haven't opened it but you got to quick! Don't stop to take anything off."

As if she would! She ran in to Asher like a girl, holding out her hand for the letter. With eager fingers she tore it open.

"To say when she's coming. As though we didn't know! Maybe, though, she's changed her train?"

Sarah folded the letter. "Yes," she said slowly. "She's c h a n g e d it, Asher. She's going to take the one to New York."

"Going to—what?"

"She isn't coming, Asher. That's all. Aunt Roxanna's invited her to a hotel in New York for Christmas week to show her the sights. Aurory says——"

"Well? What's Aurory say?" The old voice was sharp with pain.

Sarah slipped out of even Asher's sight. She was not going to tell him that Aurory said it was going to be great, with a line under the great.

Alone Sarah fought with her own pain; then went back to comfort Asher's. Here was occasion to husband another kiss.

"To make your hair grow," sobbed Sarah.

(Continued next week.)

HINTS FROM HOUSEKEEPERS

Cockroach Poison

Some time ago I saw a request in the Cultivator for method of ridding the place of cockroaches. I have found the following a sure thing:

Take equal parts of 20 Mule borax and bar sugar. Mix and spread where there is any sign of them. As it is not poisonous, it is safe to put anywhere. —F. Dean.

SIMPLY MADE CHRISTMAS GIFTS

Sealing Wax Beads

These are easily made and are attracting much attention as popular holiday gifts. The wax may be purchased from some gift shops, department stores or novelty stationers. An ordinary knitting needle—a steel one used for knitting socks is preferable—is the foundation. Around this wrap a piece of paper corresponding in size to the desired size of the bead. Paste the paper on so that it will be firm and yet can be slipped from the needle after the bead is molded. Take a stick of wax, select your foundation color for this, heat over a flame and work the wax off onto the paper by "touching" it on. If you wish a smooth bead take wax of other colors and work it on the foundation while the latter is still soft. Now mold the bead with your fingers (the heat of your hand will keep the wax soft) into the shape desired, then slide the bead off the needle. If you wish the bead to have raised surfaces, apply the colored wax when the foundation is hard. The beads are strung on colored silk cord and are held in place by knotting the cord. Any number of designs may be worked into these beads. It is not necessary to plan special designs, as the colored wax roughly applied will produce very striking designs. The beads may be any shape and size. Most strings have a large ornament, made in the same way, at the bottom of the cord. Black or henna colored wax make very good foundations.

Pongee Handkerchiefs

Much favored for gifts for men this Christmas are pongee handkerchiefs with borders of colored threads drawn through. A monogram in the corner may be embroidered in the same color as the drawn threads. To make borders, choose silk or mercerized cotton thread of one or more harmonizing colors, yellow and lavender, blue and green, etc. Cut pongee in square, allowing plenty for one-half inch hem, or less as preferred. Inside the hem lay your thread on the handkerchief in combination to plan a pleasing design. Then when you have decided where the colored threads are to go draw two threads of pongee smoothly, then start the third from both ends—to make sure it will slip out easily. To one end tie loop of doubled thread of sewing silk of any color. Pull this through. Then through doubled end of this sewing silk slip double strand of colored silk or cotton which will make your permanent color line. Draw sewing silk back through handkerchief. It will pull after it the two double strands of colored thread, leaving in place of the three drawn pongee threads four threads of the heavier colored thread which stand in a beautiful even cord. A few moments trial will show how very easy and simple this work is. A little practice will show very effective spacing and placing of these decorative threads. As a general caution, don't carry the design into the center of the handkerchief—keep it well toward the hem in distinct border, with colored threads not too far apart. Also it is more pleasing to have the heavier color—the larger number of threads—near the hem. A suggestion for making a neat hem is to draw in one of the colored threads on line where hem will be, then when hem is turned for sewing the small stitches can be taken through the colored thread and do not show on right side. This also makes most attractive finish.

FOR THE TREE

Tiny gingerbread men are always attractive on the tree. Everybody, grownups and all, likes them. It is a good plan to have one for every contemplated guest and then at least twice as many for the friends and neighbors who drop in through Christmas week—we are firm believers in the Southern custom of calling the whole week Christmas, up to and including New Year's. The brown, spicy, absurd little gingerbread men can carry much happiness from your tree into other homes. Don't forget that Christmas is the children's day, but don't for a single little instant forget that the whole meaning of Christmas is lost if we do not see the child's heart in every single human on that day of days when all are children together.

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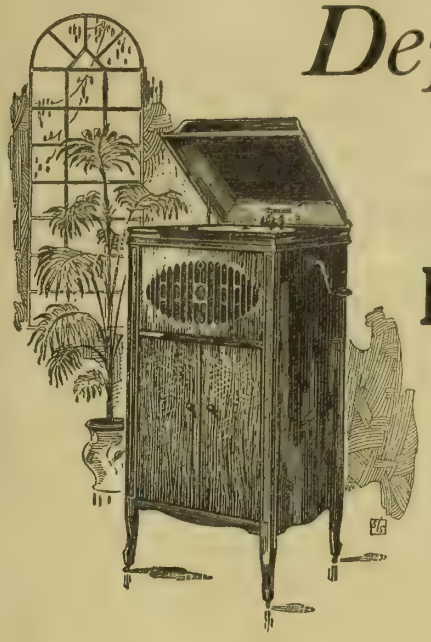

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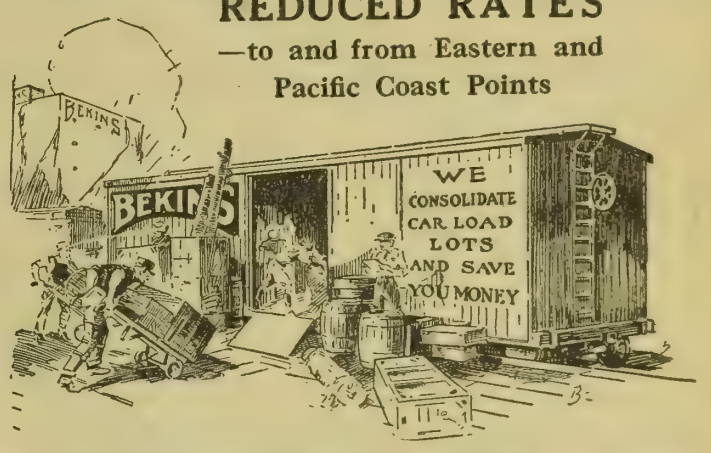

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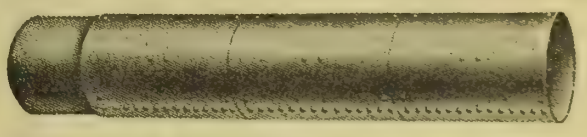

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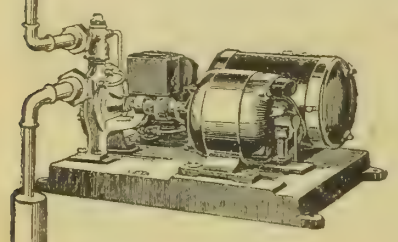

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GOOD THINGS FOR THE HOLIDAYS

Steamed Pudding With Carrots

1 cup carrots, 1 cup potatoes, ½ cup melted butter or shortening, ¾ cup brown sugar, 1 cup flour, 1 teaspoon nutmeg, 1 teaspoon cinnamon, 1 teaspoon salt, 1 teaspoon soda and 2 cups raisins. Put the potatoes and carrots through a fine grinder twice. Put the mixture together, pour into a buttered mold and steam for 2½ hours.

Hard Sauce

Delicious to serve with this pudding is hard sauce made by creaming 1-3 cup butter, adding 1 cup powdered sugar, 1-3 teaspoon lemon extract and 2-3 teaspoon vanilla. The sauce may be attractively served by placing it in little mounds around the pudding on a platter. Chopped nut meats or cherries may be dropped on top of the mounds of sauce.

Turkey Dressing (Swedish Style)

Try this dressing for the turkey: 2 cups stale bread crumbs, 2-3 cup melted butter, ½ cup raisins, seeded and cut in pieces, ½ cup English walnut meats broken in pieces, salt and pepper and sage to taste. Mix ingredients in the order given.

Pear Salad

A toothsome salad may be prepared by laying canned pears (cut into halves lengthwise) on head lettuce leaves, filling the pears with blanched almonds sliced thinly the long way, and covering with a spoonful of boiled dressing.

Parker House Rolls

Nothing can make a meal more festive than the hot rolls made after this recipe: 2 cups scalding milk, 3 tablespoons butter, little salt, 1 yeast cake dissolved in ¼ cup lukewarm water, flour. Add butter, sugar and salt to milk; when lukewarm add dissolved yeast cake and about 3 cups flour. Beat mixture until light, cover, and let rise until light. Cut down and add enough flour (about 2½ cups) to knead. Let rise again, toss on floured board; knead, pat, and roll out to one-third inch thickness. Shape with biscuit cutter, first dipped in flour. Dip handle of case knife in flour and with it make crease through middle of each piece; brush over one-half of each piece with melted butter, fold and press edges together. Place in greased pans, one inch apart, cover, and let rise, then bake in hot oven for 12 to 15 minutes. As rolls rise they will part slightly, and if hastened in rising are apt to lose their shape.

To Blanch Almonds

Cover almonds with boiling water and let stand several minutes. The skins will then slip off easily between the fingers. Dry almonds between towels.

CRANBERRY FROLIC FOR CHRISTMAS

In decorating the room where the frolic is to be held, string berries on heavy cotton thread and make green paper chains.

In the "necklace" game partners are necessary. To each couple is given a long, strong cotton thread, with a needle at each end. When the signal is given the pair commence stringing berries from both ends of the cotton. The winners are the ones who have the most berries on their string when the signal is given to stop.

Cranberry "toss" is a popular game. A deep pan or basket is placed on the table. The players stand in a line, an equal distance from the basket, are each given a certain number of berries, and try, in turn, to toss them into the basket. The winners are the fortunate ones who get the most in.

The younger folk will delight in the following: Have two players in the game at a time. They are given an equal number of berries, told to kneel on the floor and to make a circle of the fruit around them, placing each berry an inch from each other. The one who finishes first is the winner.

Filling a tub with water, allowing the guests to stab at cranberries floating on its surface, using hatpins as weapons, is also great fun. The person securing the most berries naturally wins.

A grand prize of a mammoth cranberry pie to the couple winning the most games is a pleasant surprise at the close of the evening.

New Lamp Burns 94% Air

Beats Electric or Gas

A new oil lamp that gives an amazingly brilliant, soft, white light, even better than gas or electricity, has been tested by the U. S. Government and 35 leading universities and found to be superior to 10 ordinary oil lamps. It burns without odor, smoke or noise—no pumping up, is simple, clean, safe. Burns 94% air and 6% common kerosene (coal-oil).

The inventor, W. V. Johnson, 31 N. Fifth St., Portland, Ore., is offering to send a lamp on 10 days' FREE trial, or even to give one FREE to the first user in each locality who will help him introduce it. Write him today for full particulars. Also ask him to explain how you can get the agency, and without experience or money make $250 to $500 per month.

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of rarest medicinal cod-liver oil, should be given liberally to the boy or girl who may be a source of worry.

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State if you have violin.

The California Plan of Livestock Auctions

By R. P. Royce

IN former articles it has been pointed out that the more general abuses of the public sale method of selling livestock are:

1. Wash sales, i. e., selling animals at fictitious prices, by-bidding, etc.
2. Extensive use of personal notes in settlement for purchases.
3. Domination of breeders by a certain class of auctioneers, fieldmen and publishers of farm and livestock journals.
4. The lack of a uniform plan of selling.
5. The lack of satisfactory machinery for the adjustment of disputes, especially for safeguarding the beginner.
6. Difficulty in securing transfer and registration papers promptly.

World's Record Maker

Miss Aaggie Ormsby Segis and Manager Earl Sturgis. This cow is owned by Fred Hartsook, Lankershim, and is world's record two year old Holstein for 305 day test. In 284 days she produced 20,075.1 pounds milk, making 720 pounds butter. She still has 21 days to go and is milking around 65 pounds daily.

Last week it was explained that just at the time the first public sales were being projected in this state, a group of representative breeders set about to develop a plan that would tend to eliminate or minimize the more flagrant abuses, with the result that the California Breeders' Sales and Pedigree Company was organized. A copy of the sale contract was reproduced.

Let us now see just how far such a contract goes toward solving the various problems of the public sale.

Inasmuch as there are two principals concerned in a public sale transaction, the seller and the buyer, it is natural that a satisfactory contract must be so executed that the rights of each party are safeguarded. In considering the California plan, the buyer will be given first consideration. A buyer at a public auction wants to know first of all that the offering will be as represented; that cattle advertised will be sold on their merits; that a reliable guarantee will be given and that he will not be forced to meet competition from by-bidders or wash sales; that he will receive the proper registration papers and transfers promptly and finally that he will be provided with satisfactory machinery for the adjustment of any claims after the sale is over. Clause 14 of the sale contract says:

"The consignor positively agrees that after having consigned stock to the sale mentioned on the reverse side of this sheet, he will not dispose of it by private sale, either prior to or during the progress of the sale, and he hereby contracts to pay a penalty of 25 per cent of the actual selling price as an agreed forfeit for a violation of this condition."

Clause 13 provides:

"All defects or blemishes or unsoundness of any nature known to the seller must be stated at time of entry and upon the entry."

So far as the breeding guarantee is concerned, the matter is taken care of under clause five as follows:

"The consignor guarantees every animal sold to be a breeder. If a female sold as bred proves not to be with calf, or an open female fails to conceive at first service, the buyer must report the fact within ten days after the female comes in heat, to both the seller and the president of the California Breeders' Sales and Pedigree Company, in writing. If the buyer elects to breed to his own bull he will be given four months to try the cow. If she fails to conceive within that time she must be shipped back to the seller's ranch, and notice in writing given the seller at least four days in advance of shipment. If the cow fails to conceive within four months in the hands of the seller, he must refund immediately the full purchase price to the buyer. Expense of shipping back to seller's ranch, and expense of shipping back to buyer in case cow is returned safe in calf, is to be shared equally by seller and buyer."

Furthermore, "that all defects and unsoundness of any nature known to the consignor will be stated; that no animal suffering from contagious disease, or that is vicious, will be sent by him to the sale; and that he will not consign a cow that has been bred without giving name and number of bull and date of service; that no animal that has aborted with or since last calf will be consigned unless so stated."

The buyer is protected from buying tubercular cattle under the following provision:

"Tuberculin test certificates, signed by a veterinarian approved by the California Breeders' Sales and Pedigree Company, must accompany the entry of all cattle over six months of age, and tests must have been made not more than sixty (60) days nor less than forty (40) days before date of sale.

"The consignor agrees to permit the buyer to tuberculin test all animals sold, the test to be made by a graduate licensed veterinarian, such test to be made before cattle leave the sales grounds and in the presence of the seller or his representative if the seller so desires, and the consignor agrees to receive back at the purchase price any animals that react to this test. The seller to have no responsibility for any subsequent reactions."

The abuse of wash sales and the practice of by-bidding has been headed off by the following provision of the sale contract:

"All entries must be for absolute sale. There shall be no by-bidding directly or indirectly, nor any reserve. The consignor agrees to pay to California Breeders' Sales and Pedigree Company twenty-five (25) per cent of the price at which an animal is struck off if it is proven that the bid was a direct or indirect by-bid."

It is true, perhaps, that the above clause cannot entirely eliminate the practices mentioned, but it goes about as far as is humanly or legally possible to do. A seller seeking to connive with another in negotiating a wash

(Continued on Page 639.)

DISPERSAL SALE

65 Registered Holsteins

T. B. MINGS HERD

EL MONTE, CALIF.

Thursday, January 5, 1922

An offering of young, well bred Holsteins, in excellent physical condition, and including members of some of the breed's greatest producing families, among them

FOUR DAUGHTERS OF KING KORNDYKE PONTIAC 20TH, the $12,000.00 son of Miss Valley Mead De Kol Walker.

FOUR GRANDDAUGHTERS OF KING SEGIS ALCARTRA PRILLY, the four times Grand Champion Bridgford bull.

A GRANDDAUGHTER OF ADIRONDAC WIETSKE DAIRY MAID, the highest record cow on the Pacific Coast. (This heifer is sired by her $5,000.00 son, King Abbekerk Johanna Segis.)

FIVE GRANDDAUGHTERS OF MAID TUBBIE SEGIS, the great cow that made 1140 lbs. butter from 28,388 lbs. butter in one year.

SEVERAL DAUGHTERS OF KING SEGIS PONTIAC JANNEK, Grand Champion at the Southern California shows this year.

TWENTY A. R. O. cows and heifers with records up to over 30 lbs. butter in 7 days.

A BEAUTIFUL 30 POUND DAUGHTER OF MUTUAL FOBES LONGFIELD DE KOL, backed by four generations of high record dams, and selling heavy with calf to a richly bred son of Sir Pietertje Ormsby Mercedes.

GUARANTEED BREEDERS, TUBERCULIN TESTED AND SOLD SUBJECT TO RETEST

TERMS OF SALE: Responsible parties make arrangements before sale for terms of one-third cash, balance in three, six and nine months with sale managers.

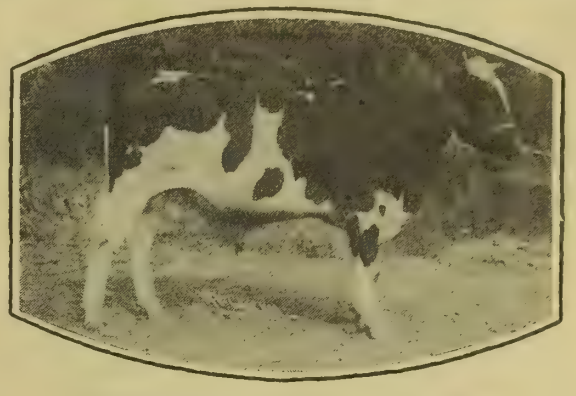
Write for catalog now

Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

Auctioneers:
Rhoades & Rhoades, Los Angeles

Sale will be held under cover at T. B. Mings' farm, 2 miles south of El Monte, rain or shine.

Sir Prince Aaggie Mead



CONSIDER THE TREMENDOUS PRODUCTION AND DEMONSTRATED ABILITY TO TRANSMIT PRODUCTION ON BOTH SIDES OF HIS PEDIGREE.

His sire, King Aaggie Mead, is a son of the 1,000 lb. foundation cow Aaggie Acme of Riverside, who produced the 1,331 lb. world's strictly official record cow, Aaggie Acme of Riverside, who in turn produced California's only 1,000 lb. junior 2 year old, Miss Aaggie Acme Burke.

His dam, Miss Valley Mead De Kol Walker, with two records above 1,000 lbs. butter in one year, and now making a yearly record that promises to exceed her previous best record of 1,113 lbs., is a daughter of the 1,011 lb. 4 year old De Kol of Valley Mead 2d, who in turn is out of the foundation cow, De Kol of Valley Mead.

HE IS BEING GIVEN HEAVY SERVICE IN BOTH OUR HERDS. KEEP ONE OF HIS SONS IN MIND FOR YOUR HERD SIRE.

OWNED JOINTLY BY
Fred Hartsook LANKERSHIM, CALIF. and A.W. Morris & Sons Corporation WOODLAND, CALIF.

Tosantos Walker Mead

Born December 9, 1919
Exceptional Yearly Record Backing

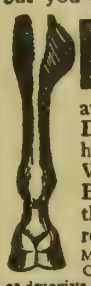
His five nearest dams average over 1,000 lbs. butter in a year. He is out of a wonderful daughter of Prince Geische Walker and Sir Aaggie Mead De Kol. He is a show bull and is priced for immediate sale.

E. D. BARRY, JR. Workman and Azusa Ave., Covina, Cal.

HOLSTEIN Fred Hartsook RANCH CATTLE

We have assembled an excellent foundation herd of females and will be glad to have breeders call. Fred Hartsook, Lankershim, California.

YOU CAN'T CUT OUT A BOG SPAVIN OR THOROUGHPIN but you can clean them off promptly with



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PARKE, DAVIS & COMPANY
DETROIT, MICH.

Cattle Situation

By A. L. SPELLMEYER

CATTLE are chaotic, the situation in one place is different from that in the other place. Men who have money are buying and men who must have money are selling. Things are in a jumble, but everywhere an advance in beef price is expected in the next 30 to 60 days.

The north has had rain and it extended down to the mountains east of Bakersfield. Porterville prospects are good. In the west side between the coast and Bakersfield they are bad. The desert country out from Banning and toward Death Valley is good. Los Angeles County is yet without feed. Arizona is good. Northern districts of Colorado, Idaho and Montana have felt the cold snap and storms, and that supply is about done. Over three quarters of the beef used by Los Angeles has been coming from this north district. The cattle and feed in Southern California today about equals two weeks' slaughter supply.

Prices are anything. Rumor states the entire lot of Northern Arizona beef sold to Los Angeles packers on a $6.50 per hundredweight delivery price for grass fats, shipped two days. California fed cattle in instances don't even draw a six cent beef price as they are close to home and killers figure them theirs at their own price, command and desire. The finest fed four cars I have seen for finish and smoothness near Los Angeles, and I mean as beef steers, not as to breeding, lay unsold at 7 cents, and these steers should dress out close to 60 per cent. The premium has switched from light to heavy cattle, and large 1,200 pound to 1,300 pound steers are bringing two cents better in carcass beef price than light fat steers.

There is a considerable demand for feeders at low prices, equivalent for a three year old steer to about $5 per head less than a good yearling cost two years ago.

The association names prices in some instances higher than those given. I know of some lots of best top cows being held for six cents.

As far as the cattlemen are concerned conditions are paralyzing, as the industry remains on a half cost to third cost basis of production. Only a few can meet prices on their range expense. Every pound of beef being finished in feed yards costs at least ten cents per pound today, with a price of anywhere from $6.25 to $6.75 for it on an average.

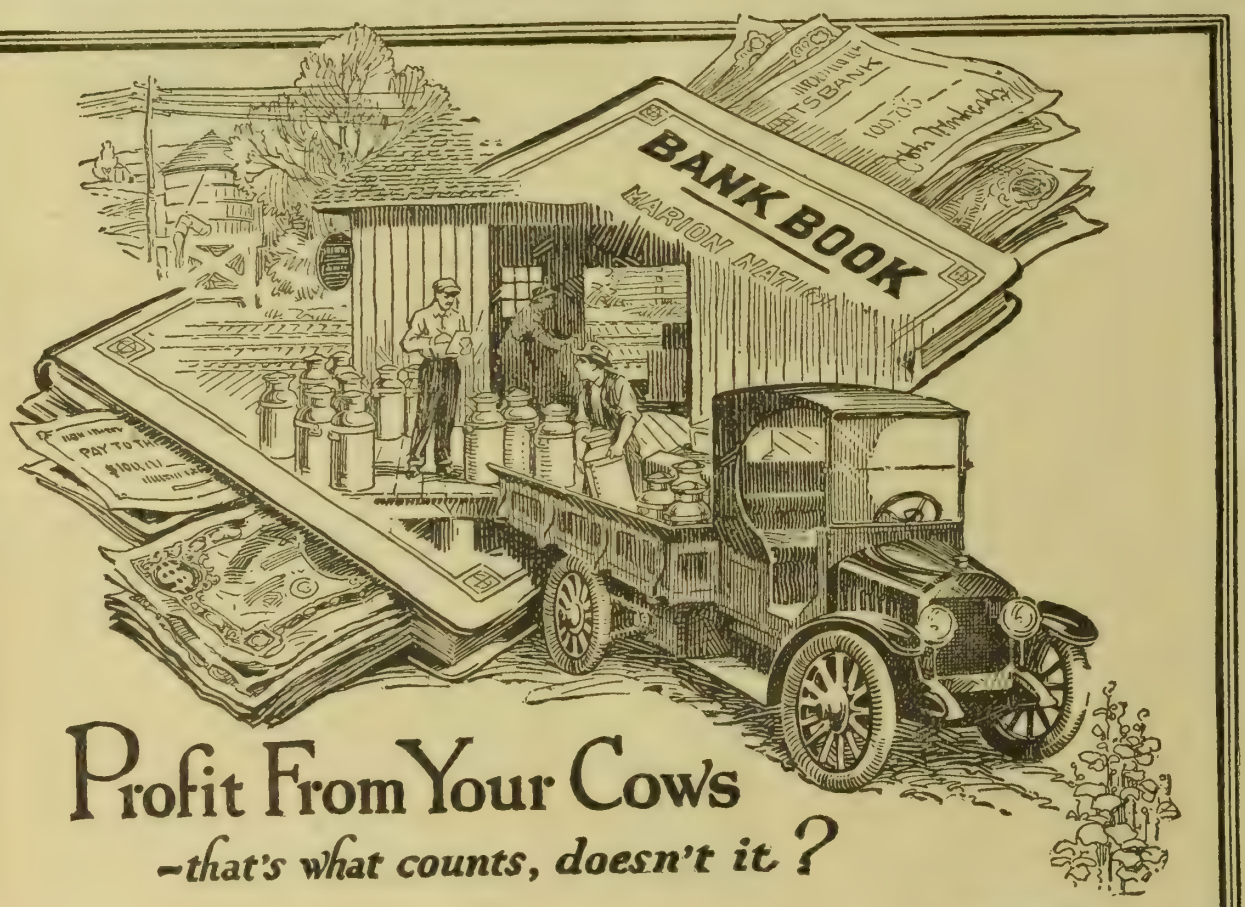
Notwithstanding Mr. Meyers' visit here and many promises, war finance has been a promise more than a fact. A few hundred thousand are reaching California cattlemen, but it's not even a fog for a parched field. Most of the money has come to some banks and loan companies, and money for cattle is harder now to get than six months ago. Another thing is that with present low prices loaning values are shattered until they are far less than normal and a brave loan today on these values would be 25 per cent or less on actual cost of production and duplication of these animals on our range if we grew them now on present expense. The war finance talk seems to have been more of a bundle of hay in front of a mule than a good feed for the starving animal, but it may possibly be that it needs a little more time to have it work.

The wide variation in beef prices permits the settling of ancient scores as the killer may desire, and today the killer is king. The cowmen who ran up against the bunch in this producer fight are in a hard way, and the plums are handed to those who sat on the fence or played pro during the past few years.

A northern buyer and speculator today told me from a week's visit and looking into things here, he thought the Los Angeles bunch needed a lesson, as they had things too much their own way on beef in these parts, and he hoped Portland would revive soon so as to give it to them. It seems Portland came clear to San Joaquin for stuff lately. Reprisal methods are bad at any time, but they are surely in full practice in our fair district of Los Angeles. One man, a prominent individual who is luckily wealthy otherwise and who has been fighting the cattlemen's fight, is according to rumor unable to get even a bid on fat steers here, fine ones, when these northern Arizona grassers are bringing $6.50. This particular man has only one bad fault, and he is against Los Angeles stockyards, and possibly he will again, as he did last year, have to go to Portland, the nearest stockyards, to get the market and a price for his steers.

The Lewis plant is rebuilding and will be the most modern and complete plant in Los Angeles when finished. Rumor states Bliss is killing at Hauser's. Woodward and Bennett have gone into the quality cattle trade strong and are handling some of the good trade. The Globe yards are full up and "Blacky Moss" is tearing his hair to find a way to accommodate people, as room there is at a premium. Blacky is some diplomat to keep them all satisfied. Geo. Woodward is running a dandy little plant called the L. A. and is adding to it, as he is doing a fine business. Several little killers are increasing facilities. The plant out Pomona way is said to have closed a December-January contract for $7 to $7.50 steers.

The producers' day is as sure to come when he will have the edge, as it's killer-retailer's day now, and no time has been riper for packer-producer cooperation.



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—that's what counts, doesn't it?

YOU keep cows for one reason only—for profit. But not all cows are profitable; some constitute an actual deficit at the end of the year. Many a cow that has every reason to produce profitably joins the ranks of the "poor milkers" just because her milk-making organs are below par.

Make no mistake about this—there are scarcely any so-called "poor milkers" that cannot be made to yield normally and profitably by the medicinal aid furnished by Kow-Kare, the great cow medicine. Every dollar spent for Kow-Kare will put itself, and something besides, back in the milk pail.

Kow-Kare is a cow medicine—not a stock food. It has positive medicinal qualities that act vigorously on the genital and digestive organs and make them function naturally. For a quarter century this famous medicine has been widely used as a preventive and unfailing treatment in such cow diseases as Barrenness, Abortion, Retained Afterbirth, Scouring, Bunches, Milk Fever, Loss of Appetite, etc.

Keep close watch on every one of your cows; at the first sign of failing milk-yield, use Kow-Kare according to directions and watch the result. Write us today for free copy of our valuable book, "The Home Cow Doctor."

Kow-Kare is sold by general stores, feed dealers, and druggists at the new reduced prices- 70c and $1.40

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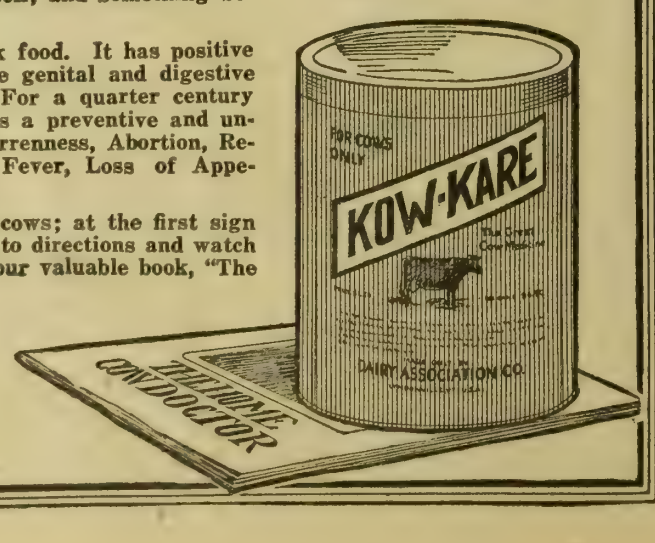
Thousands of successful dairymen use Kow-Kare regularly a part of every week during the winter to keep the assimilation and digestion in good order and throw off disease. Many of the most serious disorders that arise during the calving period can be prevented by using Kow-Kare for a couple of weeks before and after. Don't overlook this suggestion.



Livestock News Notes

Fred S. Stimson, a leading Holstein breeder of Washington, director of the Holstein-Friesian Association of America, president of the Pacific International Livestock Expositon, and well known to nearly all the Holstein breeders of this state, died at his home in Seattle, Thanksgiving morning. Mr. Stimson as owner of the Hollywood herd of Holsteins was one of the constructive breeders of the West and contributed much to the development of the dairy industry of the Pacific Coast. His death is a real loss to the livestock industry.

Lady Silken Golden Glow, a Jersey cow owned by Pickard Bros. of Oregon, has just completed a year's record of 1038.59 pounds fat from 14,939 pounds milk. This record is just 1.49 pounds of fat less than the present world's record held by Plain Mary.

The first public sale of Holsteins of the 1922 season is scheduled for January 5 when T. B. Mings of El Monte will disperse his head of 60 females. This is one of the well known herds of Southern California and breeders are looking forward to the event with interest.

The first prize aged Shorthorn bull at the Chicago show was Carpenter and Ross' Mazwalto Monarch. Princely Stamp, the Colorado bull that was champion at the 1918 Los Angeles show, was second. Rosenberger had the winning two year old in Cloverleaf Royal.

The grand champion wether of the Chicago show was a Shropshire. California had the reserve on a grade Southdown lamb.

The animal husbandry division of the university now has 68 two year old steers, 24 yearlings and a carload of calves in the experimental feeding lots at the university farm. All these cattle were raised on the university's range in El Dorado County. The older stuff was sired by grade or scrub bulls and the calves by pure bred Shorthorn bulls. College men state that the latter show marked improvement in quality, uniformity and weight. The cattle will be handled in various ways and the results made public when the experiment is closed.

A late report indicates the University of California won second with the cross bred senior steer calf, California Sultan, in a class of 22.

At the annual meeting of the National Swine Growers' Association, held at Chicago last week, the dues were reduced from $5 to $2. A resolution was adopted urging fair managers to require that sows two years

old or over must show satisfactory evidence of having suckled a litter.

Lula Mayflower, the California grand champion, sold at auction for $1.10 per pound. Lula weighed over 1,300 pounds at the time she started on her trip to fame.

James McGillivray, Sacramento, reports death of the Holstein bull, Colony Zarilda Newman. His dam is the wonderful producer, Zarilda Clothilde 3d's De Kol, world champion for yearly milk production under strictly official test, one of the few cows to have two yearly records over 1,000 pounds, and one of the two only cows to have two yearly milk records over 30,000 pounds.

Straloch Farm, Davis, has recently sold three of their young boars to breeders attracted by the records made at the state fair by the Straloch Poland Chinas. Geo. C. Need of Galt purchased the first of these. The other two are litter mates of "Westerner C," 1921 junior champion boar, one having been purchased by Jas. R. Day of MacArthur, and the other going to the California Polytechnic School at San Luis Obispo, where it will head the new herd established under the recent appropriation. The Polytechnic School also bought a Hampshire ram lamb, "Straloch 6," a first prize winner at the California National Livestock Show, and will use him to head their new flock. Beckman Brothers of Lodi have also secured one of the Straloch ram lambs, while three others went to Miller & Lux.

BUTTER PRICES

Time was when a little town in Illinois by the name of Elgin set the prices for the butter market of the United States. We believe it would be better for the dairymen of the country if she could still continue the price making. As it is today the greatest butter market in the world is New York, and its markets absolutely dominate the markets of the entire country, hence one reason for the great interest dairymen have taken in securing a protective tariff on butter. There are no great quantities of butter imported, but there is sufficient so that now and then a small amount dumped on the New York market when it is full of local productions will cause a break and a material lowering of prices. Even farthest western prices are affected, and one small importation has caused the loss of hundreds of thousands of dollars to the dairy industry in one day. The National Dairy Union is making an especially strong appeal for a "tariff particularly to protect New York dairy market from demoralization and fluctuation and to stabilize the dairy industry of the entire country."

PRICES OF LIVESTOCK

The agricultural statistician of the California cooperative crop reporting service gives the following information on the prices of livestock in comparison with a normal as of November 1, 1921:

"Prices are always of interest to the livestock producer so the crop reporting service included an inquiry concerning the price of cattle and sheep f. o. b. ranch in the schedule on condition of pasture. Returns were received from 150 correspondents on cattle and 70 on sheep. The results by districts are shown in the following table:

Price on Ranch Live Weight Per 100

	CATTLE			SHEEP		
Dist.	Steers.	Cows.	Calves.	Wethers.	Ewes.	Lambs.
1	$5.20	$4.15	$7.40	$4.00	$3.50	$5.50
2	5.60	4.30	7.40	4.00	3.25	6.00
3	5.70	4.60	8.20	4.75	3.75	6.25
4	5.55	4.35	7.20	4.50	3.50	5.75
5	5.80	4.70	7.90	4.75	3.50	6.00

District 1: Lassen, Modoc, Plumas, Shasta, Sierra, Siskiyou, Trinity.

District 2: Amador, Butte, Colusa, Del Norte, El Dorado, Glenn, Humboldt, Lake, Marin, Mendocino, Mono, Napa, Nevada, Placer, Sacramento, Solano, Sonoma, Sutter, Tehama, Yolo, Yuba.

District 3: Alameda, Contra Costa, Monterey, San Benito, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz.

District 4: Alpine, Calaveras, Fresno, Kern, Kings, Madera, Mariposa, Merced, San Joaquin, Stanislaus, Tulare, Tuolumne.

District 5: Imperial, Inyo, Los Angeles, Orange, Riverside, San Bernardino, San Diego, Santa Barbara, Ventura.

HEADQUARTERS ESTABLISHED

The World's Dairy Congress Association has established headquarters at 426 Star Building, Eleventh and Pennsylvania Avenue, Washington, D. C., where H. E. Van Norman, president, will welcome callers and communications from any who are interested in plans for the coming congress.

WIND GENERATED ELECTRICITY

California in rich in hydro-electric possibilities and development is proceeding rapidly along that line. Many have often inquired why we could not develop the great power in Pacific tradewinds. It has been felt that in interior valleys this would not be possible, but many of the coast counties are still asking. Many scientists have done some experimenting with electric generating units driven by the wind and many devices have been tried. The early experiments all took the same trend, the power of the wind being transmitted to a generator placed directly under the tower. This again was connected to the wind wheel through a long vertical shaft and bevel gears. Other plants, too, were made on which a belt was placed on the rim of the wind wheel and around a generator pulley. With these a 14 foot wheel and a four inch pulley served to make the necessary reduction in speed. The long belt did not stand up under adverse weather conditions, so this, too, was a failure.

Under favorable wind conditions a single windmill often has capacity enough to light the home, barn and other buildings and will pump the water, operate the vacuum cleaner, electric iron, separator, washing machine and other time saving household helps.

MEN WE LIKE

The man we like
We will admit
Is one who reads
And thinks a bit.
Who doesn't think
So much of looks,
But knows the folks
Who live in books.

FEED IT

Millions of tons of forage will lose money to the growers this year unless fed to good livestock. Well-bred Shorthorn cattle will make a profit consuming the surplus forage and grain on any farm, and the farm will be the better for the fertility will be increased.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION
13 Dexter Park Ave. Chicago, Ill.

Rosebud Shorthorns

A Choice Herd of Fifty Females Headed by Milmar Stamp a Cruickshank Secret

We can now offer a few extra good young bulls that we do not hesitate to recommend. They are well grown and correct in type and quality. We invite you to visit our herd or to write us your needs.

Edinger-Johnston Company
Hood, California
(Just south of Sacramento.)

Straloch Farm

Davis, Cal.
(2½ Miles West on Highway)

Shorthorns

Herd Sires:
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Turkeys — Purebred Giant Bronze, male and female stock, sired by our two famous toms, "Goldbank Boy," champion Giant Bronze first prize winning cockerel at Madison Square Garden Show, New York, January, 1921, and "Copper King Jr.," a 36-lb. yearling son of "Copper King V.," the 38-lb. yearling that was grand champion at Madison Square Garden Show, January, 1919, both bred to choice 20-lb. hens. Eggs in season. Address Bronze King Mountain Farm, Calistoga, Cal.

The Wonder Turkey (Copper King V Strain) Giant Bronze. Do not buy inferior stock—it doesn't pay. Fertility of our eggs this season something wonderful—100 poults from 101 eggs—CAN YOU BEAT THAT? April hens and toms for sale—going fast. If you wish to be one of the lucky ones ORDER NOW. Livermore Turkey Farm, Box 627, Livermore, California. K. A. Flynn, Mgr.

It's no wonder so many poultry raisers make a failure of the business. Without any knowledge of raising poultry people will branch out expecting to make a success. By putting in practice the valuable contents of POULTRY FOR PROFIT, $1.00 postpaid, success is assured in the poultry business. Cultivator Publishing Company, Los Angeles, California.

Mammoth Bronze Turkeys — Stafford strain Eastern stock, beautiful plumage, extra large frame and bone. Money back guarantee. Send for circular. R. M. Dodge & Son, R. D. 2, Box 129, Bakersfield, California.

For Sale—10,000 Florida Sour Orange Seedbed stock, 12" and up. Valencia Late, Washington Navel, Eureka Lemon trees. Prices right. W. V. Skillman, R.F.D. Box 387, San Fernando, California.

Mammoth White Holland Turkeys—Choice hens and toms from our famous breed of large vigorous turkeys, improved by Eastern stock. Earl V. Smith, Loma Vista Ranch, Willows, California.

Pure Bred Bronze Young Toms, $15.00; young hens, $10.00. Pure bred S. C. Buff Orpington cocks, $5.00 each. Mrs. M. L. Trewhitt, Route B, Box 47, Hanford, California.

For Sale—Wild Turkeys—Best, cheapest, most certain and indispensable producers. Cash deposit secures stock or eggs. Blanche Dresser, Tulare, California. Route C, Box 194.

Mammoth Bronze Turkeys—Choice toms for sale. Prizes taken at Riverside Fair, 1921. E. H. Varley, Hemet, California.

Bourbon Red Turkeys, Buff Orpingtons. The Ferris Ranch, Reservoir Street, Pomona, California

Mammoth Bronze Turkeys—Toms, $15; hens, $10. Mrs. Ida Philbrick, Route C, Box 289, Modesto, California.

Thoroughbred White Holland Turkey Toms $12. Hens three for $20. Pause Pheasantry, Fairoaks, California.

THE CALIFORNIA PLAN OF LIVESTOCK AUCTIONS

(Continued from Page 635.)

sale through by-bidding "directly or indirectly" will think twice before doing so if he is forced to pay the standard sale commission on the selling price and in addition run the risk of paying a penalty of 25 per cent of the price at which an animal is struck off.

The fact that during five years of operating under this plan there have been but few suspicious instances of by-bidding and no single case has been proved reflects the efficiency of the plan and the high standard maintained by California breeders. As a matter of fact the buying public has come to have utmost confidence in sales held under this plan, and the management, having the moral support of the leading breeders, has at all times counseled against such practices and let it be known that exposure would follow proof.

In the event a buyer feels that he has a claim against the seller "involving the accuracy of statements made by the consignor, the president of California Breeders' Sales and Pedigree Company is authorized to appoint a committee of three persons, and the decision of this committee shall be binding upon both seller and buyer, and if the consignor is in the wrong he agrees to pay the expense of adjustment; and the buyer agrees that if the above mentioned committee disallows his claim he will pay the expense of investigation."

During the past five years it has been necessary to appoint such a committee on but two occasions and in each case the committee was upheld—once by buyer and seller, and once by the court.

Another service rendered the buyer is the prompt forwarding of transfers and other papers. All such papers are sent to the sale manager at the time entry is made and following the sale are properly filled out and gotten to the buyer with as little delay as possible.

The provisions of the sale contract mentioned above are perhaps the more important features seeking to set up protection for the buyer — especially the beginner, and, so far as the writer knows, constitute the most advanced selling plan in operation in America. Certainly no general plan with which he is familiar offers as many safeguards, and the fact that all sales held by the central selling agency are conducted under those terms, thus establishing, practically speaking, a uniform and universal practice, has met with popular approval.

The relationship of the selling organization to the seller embraces equally meritorious features.

Under the California plan every breeder, large or small, has available an expert selling organization the services of which are available to each on absolutely the same terms. Each breeder electing to sell under the plan sells on the same basis. The advantage California breeders hold over their fellow breeders of other sections through having available expert sales service should be obvious. Selling is quite a distinct and separate operation from breeding. A man may have acquired an enviable reputation as a breeder, yet be almost helpless as a salesman. Under existing practices in the East, from the moment a man announces a public sale he is fair game for auctioneer, ring men and livestock advertising solicitors, who by pleasing personality, clever sales talk or open threats succeed in inducing the seller to assume an overhead expense entirely out of line with the value of his offering. The seller must attend to placing his advertising copy, preparing the catalog and the thousand and one other details incident to a sale. Likewise he must make his own warranties, selling terms, conduct all settlements and finally attend to all the papers of transfer and registration. In all too many cases this is more detail than the average seller has time to handle promptly or efficiently.

Under the California plan, a breeder, or a group of breeders, about to hold a sale, takes up the matter with the California selling organization. The manager visits the herd, looks over the cattle to be sold, discusses the conditions and from his extensive and intimate knowledge gives the owner an estimate of about what he can expect. If a sale is decided on, the seller makes his entries on the standard form—the same as other breeders use. From that moment he is relieved of any worry about details save to have the cattle in presentable condition at time of sale.

The selling organization having made an estimate as to the legitimate and probable worth of the offering, estimates the commission payments and from that estimate makes an appropriation for advertising in the press, publishing two-color folders to be sent to an extensive mailing list, the catalog, auctioneers, ring men, and other normal expenses. Having determined upon the outlay, the proper machinery is set in motion and kept going until the last transfer has been mailed—and even beyond that point, for at all times buyers have an opportunity to make complaints.

Just here is a good place to inquire into the practical results following five years' operation of the California plan. During the time mentioned, that organization has conducted 95 per cent of the registered cattle sales in this state, embracing over 6,000 head of registered cattle of the following breeds: Holstein, Herefords, Shorthorn, Jersey, Guernsey and Ayrshire.

The complete figures to the end of 1921 are not yet available but up to January 1, 1921, the sales include:

HOLSTEINS

	No. Head.	Sold for	Ave. per Head.
Females....	2592	$1,026,286.50	$399.65
Bulls.....	472	149,809.50	317.39
Total....	3065	$1,176,096.00	$383.71

JERSEYS

Females....	182	$ 37,745.00	$207.39
Bulls.....	22	2,600.00	118.18
Total....	204	$ 40,345.00	$197.77

HEREFORDS

Females....	315	$ 119,415.00	$379.09
Bulls.....	95	34,765.00	365.95
Total....	410	$ 154,180.00	$376.05

SHORTHORNS

Females....	286	$ 112,395.00	$392.98
Bulls.....	47	10,670.00	227.00
Total....	333	$ 123,065.00	$369.56

Adding to the above tabulation 46 registered Ayrshires, sold for $7,065, and 122 registered Holstein bulls sold in bull sales for $19,833.50, makes a grand total for the registered cattle of three dairy breeds and two beef breeds and by breeders through sales during four years, 4,180 head for a total price or $1,520,585, an average of $363.77.

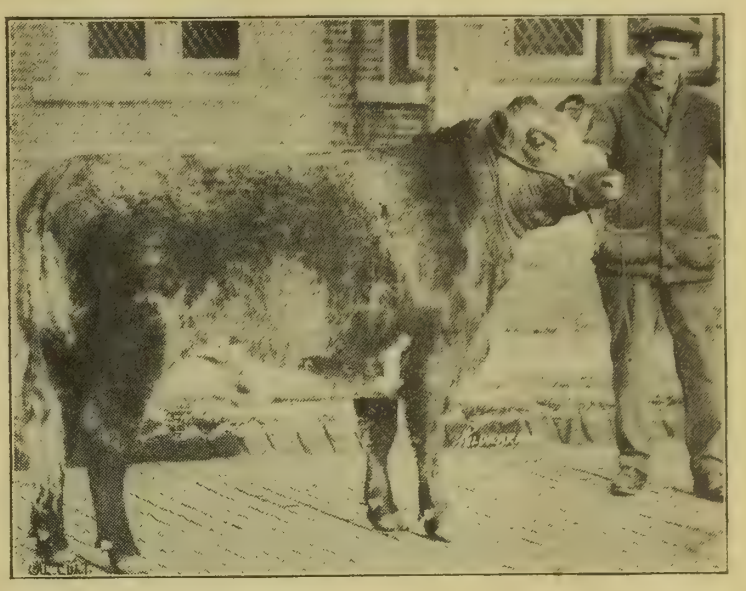
During the first six months of 1921, 1,049 head of registered Holsteins (cows, heifers and bulls, many of them just calves and not a few sold as reactors) were sold for an average of $387.

The average sale commissions paid during the first four years is:

Holsteins, 8.87%.
Herefords, 8.5%.
Shorthorns, 9.1%.
Jerseys, 11.7%.

The relatively high commissions in the Shorthorn and Jersey sales are abnormal and are due to the fact in each breed one large herd was sold for a low average. No figures are available for other states and until such figures are presented there is no

(Continued from Page 643)



GRAND CHAMPION HEIFER SOLD BY UNIVERSITY

Lula Mayflower, the cross bred Aberdeen-Angus heifer which won the title of grand champion at the International Livestock Show, has been sold at auction by the University of California. The price was $1.10 per pound according to G. H. True, professor of animal husbandry at the Universtiy of California.

Lula Mayflower was bred, fed and raised at the college of agriculture of the state university. At the time of the auction sale Lula Mayflower weighed 1,400 pounds. In addition to being made grand champion of the show Lula claims the distinction of being the first heifer to win such honors.

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Coulson Co.
PETALUMA, CAL

Final Report of Egg Laying Contest at Santa Cruz

By J. E. Dougherty

WITH an average yield of 244 eggs each the ten hustling layers belonging to Hanson's Poultry Farm of Corvallis, Oregon, won the contest and the silver loving cup, after a nip and tuck struggle in as fast company as ever was gathered at a contest of this kind. Second honors and a silver medal were taken by Geo. Gray of Santa Cruz, with an average 12 month production of 231.3 eggs, and the prize for third high pen went to S. L. Gibson's pen, average record for the year, 229.9 eggs each.

The highest individual record of 298 eggs for the 12 months was made by a Hollywood farm hen. Second honors were captured by Oregon agricultural college Barred Rock with a production of 287 and White Leghorn with a yield of 282 eggs. Nineteen hens laid over 260 eggs each, but Geo. Gray's pen, winner of second prize, was the only pen in which every hen produced better than 200 eggs. Seventeen of the 54 entries in the contest averaged over 200 eggs per hen, and 28 pens, or over 50 per cent of the pens entered, averaged better than 190 eggs per hen. 280 out of 540 competing hens averaged better than 190 eggs each. The average of the whole contest flock was 50.9 per cent or an average production of 186 eggs per hen. Does it pay to breed?

Production for October, the 12th month, was 28 per cent although the last few days showed that production was again on the up-grade.

Final standing of the 54 entries of 10 hens each for the contest year November 1, 1920 to October 31, 1921:

Pen Records

Hanson's Poultry Farm, Corvallis, Oregon, 2440 eggs; Geo. Gray, Santa Cruz, 2313; S. L. Gibson, Santa Cruz, 2299; W. H. Marshall, Santa Cruz, 2282; Hollywood Farm, Hollywood, Washington, 2204⅔; S. L. Gibson, Santa Cruz, 2202; W. A. Ford, Umatilla, Oregon, 2198; O. A. C., Corvallis, Oregon (Barred Rocks), 2124; Mrs. H. C. Kleinsmith, Hoff, Oregon (Barred Rocks), 2113; W. J. Neef, Santa Cruz, 2112; Alex Stewart, Santa Cruz, 2101; S. L. Gibson, Santa Cruz, 2084; La Rita Poultry Farm, Santa Cruz, 2048⅔; C. E. Hyde, Seabright, 2041; D. B. Walls, Petaluma, 2018⅔; La Rita Poultry Farm, Santa Cruz, 2007; D. B. Walls, 2000; E. L. Spacher, Santa Cruz, 1999; Warren Wood, Santa Cruz, 1996; J. S. Conrado, Santa Cruz, 1957; E. D. Crewdson, Santa Cruz, 1954; Geo. Barker, Santa Cruz, 1944; R. J. Kenter, Santa Cruz, 1941; Boehm & Noel, Hayward, 1940⅔; Hampton & Louckes, Van Nuys, 1938; Chas. Lehman, Santa Cruz, 1928; Geo. Wood, Santa Cruz, 1917; Santa Barbara, Poultry Ranch, 1910⅔; Geo. Brenneke, Santa Cruz, 1892; Geo. Wood, 1862; E. D. Crewdson, 1849; O. A. C., 1837; C. K. Hale, Santa Cruz, 1820⅔; S. L. Gibson (Brown Leghorns), 1817; Phil Lehrbach, Los Angeles (Rhode Island Whites), 1875; S. L. Gibson (Brown Leghorns), 1760; Enterprise Poultry Ranch, Chino, 1750⅔; Bellows Egg Ranch, Lakeside, 1744; D. B. Walls, 1719; Henry Struve, Watsonville, 1690⅔; Warren Wood, 1659⅔; Ed Buttler, Oakland, 1655⅔; Harry Beernink, Lynden, Washington, 1651⅔; N. C. Westerfield, Modesto, 1630⅔; C. N. Bolfing, Gilroy, 1621; W. J. Neef, Santa Cruz, 1552; N. S. Kaime, Santa Barbara, 1549; Forster Bros., Sunnyvale, 1490; Fuller & McCallister, Inglewood, 1458; Webbs Cackle Farm, Santa Cruz, 1456; Seabreeze Poultry Farm, Capitola, 1442; E. H. Schlink, Ramona, 1287⅔; E. D. Crewdson, 1256⅔; Seabreeze Poultry Farm, 1090⅔.

High Hens

High hens for 12 months: Hollywood Farm, 298 eggs; O. A. C. (Barred Rocks), 287; O. A. C., 282; Hanson, 279; Hanson, 278; Crewdson, 274; Kleinsmith (Barred Rocks), 271; Hollywood, 269; Hanson, 267; Hampton & Louckes, 266.

The fowls consumed approximately 41 pounds grain, 41 pounds mash, 3 pounds shell and .7 pounds grit per hen during the 365 days of the contest and used 22.4 pounds straw each.

All birds, unless otherwise noted, are S. C. White Leghorns. Fractional figures in pen records result from dividing floor eggs between the three entries in each pen.

Report from Annual Meeting of Poultry Producers of Central California

By General Manager J. H. Barber

The annual meeting of the stockholders of the association was held at the San Francisco office on Tuesday, November 29. Reports on the business of the association during the past year were made by President Denman and General Manager Barber.

The proposed amendment to the by-laws, changing the date of the annual meeting to the last Tuesday in January of each year, beginning with 1923, was carried by a unanimous vote.

Addresses were made by State Market Director Maddox and G. C. Keeney, manager of the Poultry Producers of San Diego, both of whom spoke forcefully and very interestingly on the importance of cooperative marketing to the producers of farm products.

Dr. Chas. K. Hale of Santa Cruz spoke in favor of having an annual convention of the poultrymen of the state, similar to the conventions that are held by the fruit growers, at which matters of general interest could be discussed. This is a matter worth thinking about. There is no doubt that such conventions, if well attended by the poultrymen, would result in considerable good to the industry.

The question of the association's taking up the packing and feeding of poultry this season came up for discussion. President Denman stated that in view of the fact that financial conditions were still very much unsettled it did not seem wise for the association to take on large additional financial responsibilities as would be the case if we undertook the handling of poultry at this time. Furthermore, the condition of the poultry market during the past year had been so bad and the losses by those who had stored poultry were so heavy that the present prospect was anything but encouraging. It would seem to be the part of wisdom to postpone action in this matter for another year. Directors Walls and Bergstedt also spoke forcefully to the same effect. It was the sense of the meeting that this matter should be left entirely to the discretion of the directors, and on motion unanimously carried the question was therefore laid on the table.

M. F. Heaney of Santa Rosa asked what the manager did to earn his salary. The question was answered by President Denman and ex-President Lyding, both of whom are well qualified to speak on this subject. The meeting closed with a vote of confidence in the directors and the management.

Immediately after the stockholders' meeting, the newly elected directors met at the call of President Denman and proceeded to organize. The following officers were unanimously elected for the ensuing year: President, J. R. Denman; first vice-president, D. B. Walls; second vice-president, J. J. Bergstedt; secretary, Geo. W. Wood; general manager, J. H. Barber; assistant manager, John Lawler; treasurer, Anglo & London Paris National; counsel, Sapiro & Levy.

The executive committee will consist of the following: President J. R. Denman, State Representative Haskell, General Manager Barber, Director Walls, Director Bergstedt.

Referring to the question of han-

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BREEDER OF
Mammoth Bronze Turkeys
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S. C. White Minorcas
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Eggs—Baby Turks—Breeding Stock
Route D, Box 1880, Modesto, Cal.

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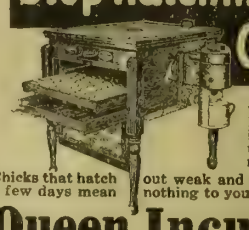

with cheap incubators. Remember, it is not how many you hatch that counts but how many you raise.

Chicks that hatch a few days mean out weak and wobbly, and live but nothing to you but trouble and loss.

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produce large hatches of strong, vigorous chicks that live and grow. The Queen is accurately regulated—taking care automatically without attention of a variation in temperature of 70 degrees without danger to the eggs. It is built of genuine Redwood—very scarce in these days of imitation. Redwood does not absorb the odor from hatching chicks. Cheaper woods and strawboard or composition lining in iron or tin machines, retain the odors, to weaken and kill the chicks of later hatches.

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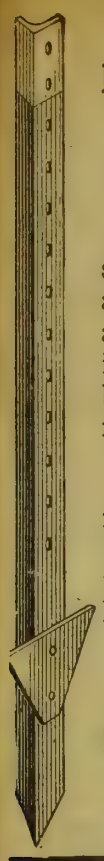

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dling poultry, it has been definitely decided by the board to postpone the handling of poultry for a year. While this may be a disappointment to some, I am sure that we will all agree that under present circumstances this is a wise decision.

STORRS EGG LAYING CONTEST

Storrs, Connecticut, November 22, 1921. Report for fourth week ending November 28, 1921.

Ice storms, rain, snow and continued cloudy weather do not stimulate egg production. The egg yield at Storrs last week was affected adversely, and the splendid start during the past month has been partly offset. The hens dropped a couple of dozen eggs behind the previous week's production and fell 20 eggs below the average for the last seven years. The total for all pens was 1385 eggs, or a yield of nearly 20 per cent. At the end of the first month there were two pens of barred Rocks, one of Columbian Rocks, three of White Rocks, one of White Wyandottes, and two of Rhode Island Reds which have not laid a single egg. Contrasted with these non-producing hens are 15 others that have laid more than 100 eggs each. Pullets are not of course expected in the beginning of their laying year to produce full size eggs. The fact is that during the first month their product will average from ten to 20 per cent under the standard two ounce eggs. There are, of course, exceptions to the rule. Three Rhode Island Red pullets laid last week eggs that average 36 ounces to the dozen instead of 21 or 22 ounce eggs as most of the birds are laying.

During the last week in November Charles H. Lane's pen of Rhode Island Reds from Southboro, Massachusetts, was in first place with a yield of 37 eggs.

The four leading pens in each of the principal breeds are as follows:

Plymouth Rocks

James F. Macdonald (White), 147; S. Bradford Allyn (White), 119; Merritt M. Clark (Barred), 87; Seven Hills Farm (Barred), 87.

White Wyandottes

Frank P. Matteson, 159; Benjamin F. Decker, 127; Woodbridge Orchards, 112; Clemens J. Diemand, 109.

Rhode Island Reds

The Orchards, 147; F. S. Chapin, 139; F. H. Sampson, 135; Pinecrest Orchards, 135.

White Leghorns

Small's Poultry Farm, 122; Meadowedge Farm, 114; Goshen Poultry Club, 111; L. E. Ingoldsby, 97.

CALIFORNIA FARM BUREAU EGG LAYING CONTEST

High pens, November 20 to December 1: H. H. Corbett, Santa Cruz, 75 eggs; Alex Stewart, Santa Cruz, 70; J. J. Shore, Santa Cruz, 70; Piper's Poultry Place, Santa Cruz, 59; Warren Wood, Santa Cruz, 55; Hanson's Poultry Farm, Corvallis, Oregon, 55; W. J. Neef, Santa Cruz, 54; Seabreeze Poultry Farm, Capitola, 52; Sunrise Poultry Farm, Santa Cruz, 50.

GUINEAS VS. HAWKS AND RATS

A Cultivator correspondent asks how to prevent hawks taking chickens. By keeping a few guinea fowl with his flock he may discourage and possibly prevent further hawk visits. If there are rats about the place they will move over to the nearest neighbor's ranch. Guineas are good fighters. I have known a man caught taking eggs out of their nests to have one fly 50 yards and hit him in the face like a baseball, leaving a mark where its breastbone hit him. Their "Buckwheat, Buck-wheat" song is pleasant to hear, and when a hawk comes they have another alarm call that will tell the owner, if he is a mile away, that there is a fight on.

JUDGING BY HIS HABITS

Visitor—Does Mr. Crawford, a student, live here?

Landlady—Well, Mr. Crawford lives here, but I thought he was a night watchman.—The Goblin.

DEATH RATTLES

They say jazz is dead. We thought it was dying from the weird noise it made.—Boston Transcript.

Poultry Queries

Conducted by Jean A. Koethen

Beet Pulp for Chickens

Please inform me if beet pulp fed to chickens is injurious or beneficial, or if it has any value as greed feed.—Subscriber, Morgan Hill.

According to Professor Jaffa's table dried beet pulp is 53 per cent starch and sugar and 25 per cent crude fiber, less than 10 per cent water and less than 3 per cent ash. This marks it as a fattening feed and one valuable for adding bulk to the ration, but maize and milo are better when fat is desired, and alfalfa meal contains protein and more fiber.

To Fatten Geese

What would make a good fattening ration for geese confined in a pen?—Subscriber, Chino.

The Cornell ration for fattening chickens is quite as good for geese: 50 pounds cornmeal, 20 pounds wheat middlings, 10 pounds ground oats. Mix to a batter fresh at each meal with buttermilk or skim milk. If milk is not available add 20 pounds meat scrap to the ground grain.

Scaly Leg

Some of my White Leghorns have scabby legs. What is the cause and how can it be cured?—Subscriber, Highland.

Scaly leg, as this scabby condition is called, is caused by a mite which burrows under the epidermis and throws up heaps of scales. It is quite contagious and is passed quickly through an entire flock when once it has entered it, but the underlying cause is always the same—filth. Scaly leg is rarely seen in yards that are kept clean and houses from which the droppings are carried regularly, hence thorough cleanliness is the one preventive measure. To cure the affected birds an ointment made of one part oil of caraway to five parts white vaseline rubbed into leg and foot every few days is the best remedy. A cheaper remedy and one more adapted to use in a large flock is one part kerosene to two parts raw linseed oil. This may be rubbed on the leg and foot or the birds may be taken from the roost at night and their legs dipped in the mixture for a moment. In using kerosene remember it will burn if it is allowed to touch the feathers.

For More Eggs

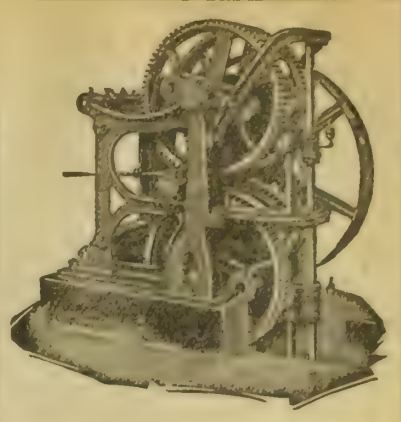
We have 800 Anconas on free range but are not getting a good egg yield. We keep millrun moistened with curd and whey before them in troughs all the time, also rolled barley in troughs, and feed white corn at night. How can I improve this ration?—Subscriber, Tulare.

Your ration is too fattening. Instead of the millrun, keep a good commercial mash dry in hoppers before your hens, and give them at night a scratch mixture of two-thirds wheat and one-third corn or one-half wheat, one-fourth corn and one-fourth barley, allowing not more than a quart daily for 15 hens. If you wish to use a moist mash in addition, moisten the same mash at noon with sour milk and feed just what the birds will clean up in a half hour. They have been getting too much grain, which is itself fattening, and too much corn, which is also very fattening, without sufficient mash to balance the grain. You may have to shut up your birds in order to get the best egg yield. The value of free range depends a good deal on the character of the range. Most commercial poultrymen believe their hens do better when they are confined.

Alfalfa Leaves

Are alfalfa leaves thoroughly soaked in water good for laying hens?—Subscriber.

(Continued on Page 643.)



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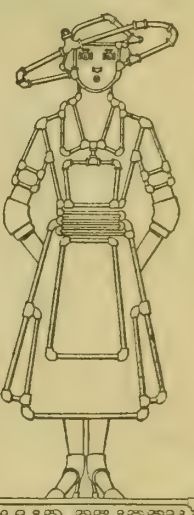

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LOG SAW Tree Saw fells trees; Limb Saw cuts branches. Other Saw Rigs and farm and shop engines from 1½ to 22 - H. P.

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THE E. Z. CLOVER CUTTER

For the small Poultry Plant.
Will cut **Dry** or **Green Alfalfa.**
Made of the best material. Weight 15 lbs., crated. If your dealers do not carry them, send direct to me. Price **$8.50. Postage extra.** Send for circular.

$8.50

R. W. W. GRIGSBY
125 West Avenue 29 LOS ANGELES, CAL.

Los Angeles Markets

Los Angeles, December 14, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price, 48 cents.

Dec.	7	8	9	10	12	13
'21	46	48	....	....	48	48

CHEESE

Brokers' prices:
California flats, 21@23.

EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 53; case count, 53; pullets, 52; pewee pullets, 35.

Dec.	7	8	9	10	12	13
'21	55	55	....	....	58	58

POULTRY

Price to producers: Hens, 25; colored, 29; broilers, 40; roasters, 27; old roosters, 16; fryers, 32; ducks, old, 20; ducklings, Pekin, 3½ up, 28; others, 28; geese, 28; turkeys, live, young tom, 40; dr., 47; old, live, 35; dr., 43; hens, live, 40; dr., 47; small hen and tom, 15; squabs, 60@70.
Belgian hares, 14@19; old, 8.

LIVESTOCK

Los Angeles, Dec. 13.—Weighed and delivered off cars without food or water:
Hogs (hard grain fed), 125 to 175 lbs., 8.00; 175 to 225 lbs., 8.50.
Cattle (on foot, gross weight): Steers, good, 6.50; medium, 6.00; cows, good, 5.00; medium, 4.50; bulls and stags, 3.00; calves, 125 to 150 lbs., 8.00; 150 to 225 lbs., 7.00.
Sheep: Ewes, 3.50@4.00; lambs, 7.00@7.50.

HIDES AND PELTS

Quotations furnished by California Hide Corporation for stock delivered to their warehouse at 1960 Santa Fe avenue.
Green salted hides—No. 1 steers, 7½ per lb.; No. 1 cows, 6½ per lb.; No. 1 bulls, 5½ per lb.; No. 2 hides, 1½ less per lb.; grubby hides, 1½ less per lb.; kosher hides, 1 less per lb.. glue hides, 1 per lb.; No. 1 horse hides, over 50 lbs., 1.75 each; No. 1 horse hides, 40 to 50 lbs., 1.25 each; No. 1 horse hides, 30 to 40 lbs., 75 each.
Green hides—No. 1 steers, 6½ per lb.; No. 1 cows, 5½ per lb.; No. 1 bulls, 4½ per lb.; No. 2 hides, 1½ less per lb.; kosher hides, 1 less per lb.
Calfskins and kipskins—No. 1 calfskins, under 15 lbs., 12½ per lb.; No. 2 calfskins, under 15 lbs., 9 per lb.; No. 1 kips, 15 to 25 lbs., 10 per lb.; No. 2 kips, 15 to 25 lbs., 8 per lb.; kosher skins, 1 less per lb,; glues, 1 per lb.; slunks, 20@40 each.
Dry flint hides—No. 1 hides, 16 lbs. and up, 10½ per lb.; No. 1 kips, 6 to 16 lbs., 11 per lb.; No. 1 calfskins, under 6 lbs., 11 per lb.; No. 2 hides and skins, 2 less per lb.; glue hides and skins, 2 per lb.
Pelts—Large, long wool, 50@80 each; medium, 25@50 each; short wool and shearing, 10@25 each.
Goat skins—No. 1 common, 10@50 each; No. 2, 5@10 each; badly damaged and small kids, worthless.
Tallow—No. 1 white and hard, 5 per lb.; No. 2, 4 per lb.; No. 3, dark and greasy, 1@3 per lb.
Wool—According to quality and condition, 6 per lb. and up.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, December 13, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.
Potatoes: Movement slow, market weak. Lugs mostly 90@1.00. Stocktons: Burbanks, per cwt., best, 2.35@2.50; poorer, low as 2.00. Idahos: Russets, best, 2.25; Rurals, mostly 2.00; Bakers, 3.00@3.25. Sweet potatoes: Market weak. Locals: No. 1 mostly 85@1.00 per lug; per cwt., No. 1, 2.25@2.50; No. 2, 1.00@1.50. Mississippis: 1.10@1.25 per lug.
Onions: Demand moderate, market firm. Stocktons: Per cwt. White Globes, best, cold storage stock, mostly 6.25@6.50; few 6.75; browns, 4.25@4.75; poorer, 3.75@4.00 Per lug, Whites, best, 1.90@2.00; poorer, 1.50@1.60; browns, 1.35@1.50; poorer, 1.00. Spanish sweets mostly 6.25@6.50 per cwt.
Garlic: Lb., 10@12.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock, December 13, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.
Artichokes: Doz., 1.25@1.40.
Beans: Demand moderate, market strong. Per lb., string, 15@17; limas, market firm, 13@14.
Bunched vegetables: Supplies of beets, turnips and carrots scarce. Per dozen bunches: Turnips, 40; beets and carrots, 50@55; radishes, 20; parsley, 15; spinach, 30@35; green onions, 12½@15.
Cabbage: Market steady. Per field crate, mostly 2.50@2.75; poorer, 1.50@2.00.
Cauliflower: Market steady. Best, mostly 2.50@2.75; few 3.00.
Celery: Market firm. Local, per cr., mostly 3.50; few 3.75@4.00; poorer, 2.50@3.00.
Cucumbers: San Diego: Market steady, mostly 2.00@2.50; poorer, 1.00@1.75; local hothouse, doz., 1.65.
Lettuce: Demand moderate, market firm. Locals: Field crates, best, 1.25@1.50; poorer, 75@1.00.
Parsnips: Lug, 85@90.
Peas: Market firm. Lb., fancy, 15@17; poorer, 12.
Peppers: Locals: Bells, green, per lb., 11@13; chili, 10@12; pimiento, 6@7.
Rhubarb: Lug, 75@90.
Squash and pumpkins: Market steady, movement moderate. Banana, 1@1¼ lb.; Hubbard, mostly 1½ lb.; cream squash, 2; Italian, lug, 1.50; pumpkins, 1@1½ lb.
Sweet anise: 60 doz.
Tomatoes: Market firm on good stock. Locals: No. 1, per lug, mostly 2.50@3.00; poorer, 1.00@2.25.

FRESH FRUITS

Apples: Demand and movement moderate, market steady. Locals: Romes and King Davids, 4@5; few best Delicious, Yucaipa section, 6@8 lb. Watsonville: Fancy, 3½ and 4 tier, Bellefleurs, 1.60@1.75; poorer, 1.50; 4½ tier, 1.40@1.50; B grade, 4 tier, 1.40@1.50; loose, per lb., 3½@4. Idahos, Washingtons and Oregons: Jonathans, extra fancy medium to large sizes, 2.75@3.15; fancy, 2.60@2.85. Oregons: Spitzenburgs, medium to large, extra fancy, mostly 2.60@2.85; fancy, 2.50@2.65.
Avocados: 50 lb.
Cranberries: Market steady. Massachusetts: Late Howes, 25.00 bbl.; New Jersey, Late Howes, 27.00 bbl.
Grapes: Demand good, market steady. Per lb., Malagas, 12; Red Emperors, 10@11.
Melons: Demand light, 2@2½ lb. for good stock.
Olives: Ripe, lb., 4@6.
Pears: Anjous, per lb., 6@8; Bartletts, 6@8.
Persimmons: Lb., 7@15.

CITRUS FRUITS

Grapefruit: Market steady. Californias, northern: Packed, box, 3.00@3.50; small, 2.50; Imperial Valley, 5.00@5.25. Arizonas: Seedless, 4.00@5.00, according to size and quality.
Lemons: Demand and movement slow, market weak. Locals: Special pack, mostly 4.00; market pack, 2.50@2.75; loose boxes, 1.00@2.00.
Oranges: Demand moderate, market steady. Navels, special brands, 216s to 126s, fancy, 5.25@5.75; choice, 4.00@5.00; orchard run, 4.00@4.25. Valencias, market pack, 3.00@4.50, according to size and quality. All varieties culls, field boxes, 2.00@2.50. Tangerines: Demand and movement good; best, 12@13 lb.

HONEY

Honey movement in the past two weeks has been comparatively light and demand has fallen off to some extent. Prices remain practically unchanged and the light supplies on hand are likely to prevent any weakening in the immediate future. Some 1920 sage still remains on hand, but everything else now being shipped is of the 1921 crop. The supply is gradually cleaning up and little honey is expected to be available by January except mixed cars of goods in glass and tin containers and straight cars of honey in two and five pound glass jars. Car lot prices, per pound, f. o. b. loading stations: White sage, 11; light amber sage, 8; light amber alfalfa, 6½@6¾; white orange blossom is nominally 12@12½ per lb., but straight carloads are unavailable except by combining small lot offerings. Beekeepers are being paid 6@6½ per lb. for light amber alfalfa, and there is said to be more business in this grade than in any other California honey. Car lots of Hawaiian honey are quoted f. o. b. San Francisco: White, 6; light amber, 5½; honeydew honey, 4. Both inquiry and movement of Hawaiian stock are reported to be moderate.
Beeswax is practically at a standstill, a few small lots being sold at 20@25 per lb., depending upon purity of the wax and its color. On account of foreign importations eastern demand for California wax is negligible. Many beekeepers have opened up substantial outlets for their supplies through roadside stands, and an increasing quantity of honey is being disposed of in this way each year. The average roadside price for light amber honey is around 50 cents per quart can.

GRAIN AND FEEDS

Grain Exch. price bid Dec. 13:
Barley: 100 ton lots, Dec. del., 1.37.
Milo: 100 ton lots, Jan. del., 1.30.

HAY

Alfalfa Growers of California report:
Market continued strong in all parts of the state and prices showed a further moderate advance. There is no change in the underlying situation, excepting that the factors of a limited production of marketing hay and of diminishing supplies in the hands of users, dealers and growers are making themselves felt more as the winter season advances. The lack of rainfall so far increases the current consumption to some extent, but has as yet not become a serious factor, as there is still ample time for plenty of rain. An outstanding feature of the present situation is that those producing and shipping districts which also have a considerable local market have ceased shipping to central markets, as growers have no trouble in selling f. o. b. ranch at from $3 to $6 a ton above central markets. There were 990 tons of grain and alfalfa hay received on the Los Angeles tracks the week ending December 10, with 90 tons held over.
Prevailing prices last week, delivered in the vicinity of Los Angeles:

No. 1 dairy alfalfa	23.00
Standard	18.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats	22.00@28.00
Barley	18.00@24.00
Alfalfa, Rabbit	24.00@28.00
Alfalfa, No. 1 Dairy	20.00@22.00
Standard	16.00@18.00
Straw	12.00

San Francisco Markets

San Francisco, December 13, 1921.

BUTTER

Extras	45

Dec.	7	8	9	10	12	13
'21	42	43	47	....	47½	45

CHEESE

Dairy Exchange quotations:

California Flats	24
California Y. A.	30
Oregon Trips	31
Oregon Y. A.	33

EGGS

Dairy Exchange quotations:

Extra	58½
Extra Firsts	55
Extra Pullets	54
Undersized No. 1	46½

Dec.	7	8	9	10	12	13
'21	63	59	60½	....	59	58½

POULTRY

Wholesale prices are:
Two carloads of Eastern geese arrived for holiday market.
Poultry: Young chickens, Leghorns, 1 to 1½ lbs., 35@38 per lb.; above 1½ lbs., 35@38; 2 lbs. and up, 26@27; heavy breeds, 26@28 per lb.; staggy roosters, 20@25 per lb.; old roosters, Leghorns, 16 per lb; heavy breeds, 18 per lb.; hens, Leghorns, large, 25@28 per lb.; small to medium, 23 per lb.; heavy breeds, 28@30 per lb.
Turkeys: 42@45 per lb.
Ducks: 22@25 per lb.
Geese: 25@30 per lb.
Squabs: Fancy, 50@55; do, common, per dozen, 3.50@4.00; old pigeons, 3.50 per dozen.
Belgian hares: Live, 16@18 per lb.; do, dressed, 25@28 per lb.

LIVESTOCK

Western Meat Co. quotes:
Weighed off cars at our yards in South San Francisco:
Cattle: No. 1 steers, 6@6½; do, second quality, 4¾@5¼; cows and heifers, No. 1, 4¾@5¼; do, second quality, 4@4¾; bulls and stags, 3@3½.
Calves: Light weight, 7½@8½; heavy, 6@6½.
Sheep: Wethers, 4@4½; ewes, 2¾@3¼.
Lambs: 7@7½.
Hogs: Hard, fat, grain fed, weighing 125 to 200 lbs., 8; 200 to 250 lbs., 7; 250 to 300 lbs., 6; light sows, 6½; heavy, 5.
California Farm Bureau Marketing Association reports:

No. Hogs	Av. Wt.	Dock	Price
Tulare, December 6			
104	156	.....	8.55
99	178	.....	8.55
98	180	.....	8.00
92	185	.....	8.00
71	228	.....	7.50
92	195	.....	7.45
7	336	100	5.75
1	450	.....	3.00
6 cars, 52 consignors, $7,023.15.			
Visalia, December 7			
106	159	.....	7.70
92	176	.....	7.65
92	177	.....	7.65
94	188	.....	7.55
87	200	.....	7.50
27	240	.....	7.05
25	276	.....	5.55
1	380	.....	5.00
6 cars, 32 consignors, $6,013.00.			
Hanford, December 8			
45	107	.....	8.60
41	168	.....	8.00
1	180	.....	8.00
68	193	.....	7.80
5	182	.....	7.75
90	181	.....	7.75
21	247	.....	6.50
2	255	.....	6.50
7	437	60	6.00
6	393	.....	5.50
3	357	90	5.00
3 cars, 20 consignors, $4,081.98.			
Corcoran, December 9			
82	178	.....	7.75
34	223	.....	6.50
8	334	70	5.00
1½ cars, 11 consignors, $1,769.67.			

Total for the week, 16½ cars, 115 consignors, $18,887.80.
These prices are f. o. b. shipping point

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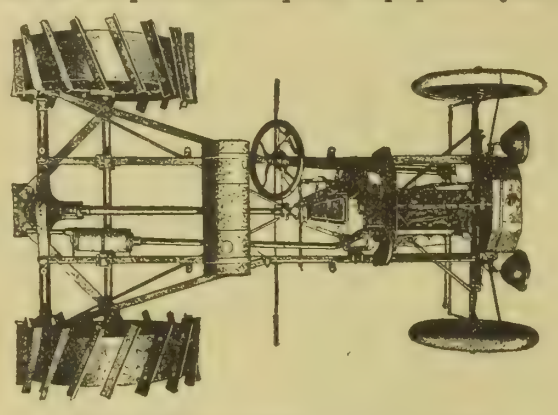
This is the lowest priced farm power equipment you can buy.



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Let your Ford do your plowing, cultivating, disking, harrowing and other field and orchard work. You can convert your Ford into a 3 or 4 horsepower tractor with the TRACFORD attachment and pull any implement that three horses will pull. You can buy a good used Ford car from $150 up. Easily attached—does not injure car. Price only $125 f. o. b. Los Angeles or San Francisco.

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Southern California Distributors

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THE FRESNO NURSERY CO. INC. TRADE MARK RELIABILITY QUALITY SERVICE FROM THE ROOTS UP

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FRUIT TREES

Our trees are grown under most favorable conditions in the choicest spots in California.

New Price List of Fruit Trees and Ornamentals ready for mailing.
Sent Free on Request

Fresno Nursery Co.

Fresno, California

$6.00 Barley Seed for $3.00 per hundred

The Heavy Yielding "4000" Variety
That Withstands Drouth

If you raise barley, why not plant at least a little "4000" and improve your seed? You can also sell it for seed. It has proven to be around 20 per cent better than ordinary barley. Plump, heavy kernels insure good germination. It weathered a hard dry spell last year and came out vigorously. Seed cost $6.00; we sell it for $3.00 per hundred sacked F. O. B. Alpaugh.

J. W. McClarren — Alpaugh, Calif.

to the farmer, while the prices quoted by the newspapers are off cars at their packing houses.

POTATOES AND ONIONS

Street prices:
Potatoes: River, fancy, 2.25@2.50; choice, 2.00@2.25; Oregon Burbanks, 2.65@2.75; Salinas, 3.75; netted gems, 2.75@2.90; British Queens, 2.25@2.35. Sweets, 3.25@4.00 per cwt.
Onions: Australian brown, nominal; crystal, 3.75@4.00; few fancy at 4.50@4.75; green, 1.50@2.00 per box.
Garlic: 2@5 per lb.

VEGETABLES

Wholesale selling price:
Artichokes: 18.00@20.00 cr.
Brussels Sprouts: 7@9 per lb.
Carrots: Sk., 1.00@1.25; fy., 2.50@2.75; do, bunch, 15@30.
Celery: 1.50@2.00 cr.; fy., 2.50; bunch, 10@12.
Cucumbers: Hothouse, 2.00@2.50; Southern, 1.25@2.00.
Eggplant: So., lb., 3@6.
Endive: 75@1.50.
Lettuce: Iced, 1.75@2.00 cr.; local, 75@1.00.
Mushrooms: 10@40 lb.
Olives: Lb., 5@7.
Peas: Lb., 5@12½.
Peppers: Bells, 10@12 lb.
Rhubarb: Southern, box, 1.75.
Tomatoes: Southern, 1.75@2.00 cr.; few fancy higher.

FRESH FRUITS

Apples: California: Bellflower, nominal; Newtown Pippins, 3½ and 4 tier, 1.75@2.15; 4½ tier, 1.65; B grade, 1.25@1.35; Spitzenburg, 4 tier, 1.40@1.60; 4½ tier, 1.15@1.35. Northwestern: Spitzenburg, extra fancy, 2.50@2.75; fancy, 2.25@2.50; choice, 1.75@2.00; Rome Beauty, fancy, 3.00@3.25; choice, 2.50@2.75; banana, extra fancy, 3.25@3.50; fancy, 2.75@3.00; Delicious, 2.75@3.00; Jonathan, extra fancy, 2.00@2.50; fancy, 1.75@2.00; Lady apples, 2.50@3.10.
Avocados: California, doz., large, 6.00@8.00; small, black, 2.00@2.50.
Bananas: Eastern, 6@7; Hawaiian, 6@7½.
Cranberries: Bx., 5.50@6.50; Cape Cod 24.00@25.00 bbl.
Melons: Casabas, 75@1.00 per doz.
Pears: Winter Nellis, 2.50@3.25 box; Beurre Clairgeau, 2.00@2.50; De Anjou, 2.00@2.50; Beurre Hardy, 1.50@2.00; do, fancy, 2.50@3.00.
Persimmons: 1.25@1.50 box.
Pineapples: 4.00@6.00.
Pomegranates: Box of ½ doz., 2.00@2.50.
Rhubarb: Box, 1.50.

CITRUS FRUITS

Oranges: Valencias, nominal. Lemons, 3.00@4.50 per box; lemonettes, 1.50@3.00 per box. Grapefruit: 2.50@3.50 per box for California and Arizona. New crop Navels, 4.50@5.50; do, choice, 4.00@4.50. Mandarins: Box, 2.50@3.00.

HONEY

Demand has been better and movement heavier during last two weeks. Market firm, better feeling. Stocks continue to decrease. The heaviest movement is on light amber alfalfa; supplies of other grades, especially white stock, limited. Due to late rains, colonies in Southern California have more brood than usual at this date, and as a result winter stores are being consumed too rapidly. Carloads f. o. b. usual terms at loading points: White orange, no sales reported, supplies nearly exhausted; white sage, mostly 11½; light amber sage, 8½; light amber alfalfa, 6½@7, mostly 6½. Considerable California honey being sold by producers in small lots at prices averaging 3@7 per lb. higher than carload prices. Hawaiian carloads, f. o. b. San Francisco: White, 6½; light amber, 5; honeydew, 4. Beeswax: Quiet. Too few sales to establish market.

BEANS

Below California Bean Growers Association shippers' prices choice recleaned:

Large Whites	5.00
Small Whites	4.75
Pinks	4.50
Mexican Reds	4.50
Red Kidney	6.60
Henderson Bush	6.50
Cranberries	6.75
Bayos	5.25
Blackeyes	4.40

NUTS

California Almond Growers Exchange's prices:

Languedoc	14½
Hard Shell	11

Manchurian walnuts, 17.
Chinese peanuts, fy., 10.
Pecans, 25.

HAY AND FEED

California Alfalfa Growers report:
Prevailing prices last week, f. o. b. San Francisco:

No. 1 Dairy Alfalfa	16.00
Standard	15.00

A. W. Scott Co. says:
Receipts past week, 522 tons. Stocks in yards and warehouses in San Francisco are light; indications are that the market will continue steady and values strongly maintained. Interior trade has been much better as the cold weather following the rain has been unfavorable to the ranges and the demand has strengthened considerably in every direction. Better grades of hay seem to be desired, particularly where the length of the shipment incurs high freight rates. Alfalfa is in active demand.
We quote today wholesale prices in carload lots as appear from dealers' transfers upon the markets in San Francisco (for prices to consumers, charges of switching, cartage, commission and handling expenses must be added, according to conditions).

Wheat hay No. 1	17.00@19.00
Wheat hay, fair grade	14.00@17.00
Tame oat hay	15.00@18.00
Wild oat hay	11.00@13.00
Alfalfa hay	13.00@16.00
Stock hay	9.00@12.00
Straw	10.00@12.00
Rolled Barley	29.00@30.00
Ground Barley	31.00@33.00
Oats, Rolled Feed	34.00@36.00
Bran and Millrun	25.00@28.00
Middlings	41.00@44.00
Coconut Meal	23.00@26.00
Alfalfa Meal	21.00@23.00
Cottonsed Meal	40.00@42.00
Sugar Beet Pulp	27.00@29.00
Molasses Tanks	21.00 Barr. 25.00
Milo Maize	31.00@40.00
Cornmeal and Cracked Corn	38.00@41.00
Scratch Feed	40.00@43.00

GRAIN

Sales on Grain Exchange:
Barley: Feed, 1.25@1.30; shipping, 1.30@1.45.
Wheat: Mill, 1.85@1.95; feed, 1.85@1.95.
Red Feed Oats: 1.55@1.60; seed, 1.75@2.10.
Corn: California yellow, 1.45@1.50; eastern yellow No. 2, 1.37@1.40; No. 3, 1.36@1.38; No. 3 kaffir, in bulk, 1.43@1.45; white Egyptian, 1.72½@1.77½; California red milo, 1.42½@1.47½.

Citrus Markets

Los Angeles, December 14, 1921.

New crop Navels are meeting a strong demand and are commanding very satisfactory prices. Some wind injured fruit is being shipped but not in sufficient quantity to materially affect market. F. O. B. quotations are around $3 to $3.50.
Lemons are meeting with limited demand and are commanding prices such as are not highly satisfactory to growers.

Shipments

Shipments of citrus fruits to date since November 1, 1921, Southern California: Oranges, 751 cars; lemons, 558; total, 1,309. To same date last season: Oranges, 929; lemons, 483; total, 1,412. From Central California to date this season: Oranges, 2,906; lemons, 13; total, 2,919. To same date last season: Oranges, 2,835; lemons, 27; total, 2,862. From Northern California to date this season: Oranges, 269; lemons, 2; total, 271. To same date last season: Oranges, 248; lemons, 1; total, 249.

AT THE AUCTIONS

December 7
New York: 8 cars Navels, 3.50@8.00.
Boston: 3 or., 1 lem. Nav. 5.70@7.25, lem. 4.20@4.95.
Cleveland: 3 or., 1 lem. Nav. 5.60@6.50, lem. 2.00.
Pittsburg: 2 or., 1 lem. Nav. 4.40@6.70, lem. 3.30@4.85.
St. Louis: 2 or., 2 lem. Nav. 5.20@5.55, lem. 2.87@3.85.
Cincinnati: 2 lem., 1.10@4.55.

December 8
New York: 4 Nav., 5.90@7.90; lem. 2.85@4.75.
Boston: 2 or., 1 lem. Nav. 5.75@6.40, lem. 3.55@3.85.
Pittsburg: 2 Nav., 4.65@5.90.
St. Louis: 1 Nav., 5.20@5.34.
Philadelphia: 3 or., 1 lem. Nav. 4.10@5.70, lem. 3.25@4.80.

December 12
New York: 17 Nav., 1 lem. Nav. 5.00@8.20, lem. 4.50@5.05.
Boston: 7 or., 2 lem. Nav. 4.40@7.30, lem. 4.30@5.10.
Pittsburg: 5 or., 3 lem. Nav. 4.05@6.55, lem. 2.00@5.30.
Cleveland: 4 or., 1 lem. Nav. 4.00@6.45, lem. 4.95@5.20.
St. Louis: 1 or., 1 lem. Nav. 4.90, lem. 3.30.
Philadelphia: 1 or., 1 lem. Nav. 5.90, lem. 4.65@4.90.
Cincinnati: 1 or., 1 lem. Nav. 5.80, lem. 4.05@4.85.

December 13
New York: 12 or., 1 lem. Nav. 4.95@8.15, lem. 4.05@6.60.
Boston: 5 or., 1 lem. Nav. 4.05@6.50, lem. 3.95@5.75.
Pittsburg: 2 or., 1 lem. Nav. 3.05@5.15, lem. 3.45.
St. Louis: 1 Nav., 4.10@5.10.

CALIFORNIA CATTLEMEN'S MARKET REPORT

San Francisco, December 5: Receipts at Chicago past week decreased materially, with very slight decrease in price. Receipts in San Francisco showed considerable decrease with steady price and strong demand. Strong demand still exists for all classes of stock.
Stock and feeder cattle are exceedingly short in California, and Nevada reports that practically all available stock has either been sold or is now on feed in that state.
Information received from the Middlewest is to the effect that there are probably 10 per cent less cattle on feed in that section than normally, but indications are that more cattle will be put on feed and that a considerable number have stopped en route for feeding at points a little farther west. The Middlewest seems to show a considerable decrease in number of sheep on hand and being fed. Information from the Northwest is to the effect that there is a considerable supply of Canadian cattle being fed, but the total number on feed at the present time is about normal and not in excess of last year.
Sales are reported about the same as last week, being 6½c in the valleys of California, with the bulk of sales at 5¾c in the northern and eastern part of the state. Some few sales are reported for higher figures. San Francisco buyers are contracting in Nevada for 6½c f. o. b. cars for delivery in March and April.
We regret that since our last report announcing that a 10 per cent reduction in railroad rates would become effective on December 1st, the whole matter has again gone before the interstate commerce commission for another hearing and the rate probably will not go into effect until January 1. A strong effort is being made to secure this 10 per cent reduction on short hauls, as well as to extend the 20 per cent reduction on long hauls.—R. M. Hagen, Secretary.

WEATHER REPORT

San Francisco, Dec. 10, 1921.

Stations	Rainfall Week	Rainfall Season	Rainfall Norm.	Temp. Max.	Temp. Min.
Eureka	.02	8.49	11.97	64	40
Red Bluff	.00	2.23	6.90	64	34
Sacramento	T	1.79	4.62	60	34
San Francisco	.02	2.42	5.15	63	45
San Jose	.02	2.10	3.91	64	32
Fresno	.00	.55	2.44	64	34
San Luis Obispo	.00	.72	4.10	80	32
Los Angeles	.00	1.26	2.88	82	48
San Diego	T	2.21	1.69	80	46

POULTRY QUERIES

(Continued on Page 641.)

All hens are fond of dry alfalfa leaves and they are good feed, but why soak them? No amount of water will make green feed of them and you have your trouble for nothing.

Sour Milk

Is milk which is sour but not clabbered apt to stop hens laying?—Subscriber.

Milk in any form is one of the most valuable feeds a hen can have and will help her to manufacture more eggs, but I think most hens like clabbered milk better than milk which is not clabbered, perhaps because it is more easily eaten. If the milk is used for moistening a mash it makes little difference whether it is sour or sweet, thin or clabbered.

Capons

Can you give me information in regard to capons? Does the market call for a large quantity and what is the average market price?—Subscriber, San Bernardino.

The capon market, I am told by breeders who have tried it, is not very reliable. If one can market his birds at retail prices in his own neighborhood or sell to clubs or restaurants on contract there is a good deal of profit in it, but if one must trust to selling through a commission merchant when his birds are ready there is apt to be disappointment. The capon market, like the squab market, is not well developed because the supply of capons is never large and always fluctuating, and possible customers, when they ask for capons and capons are not forthcoming, content themselves with hens or soft roasters and forget about capons. The price is a little greater than that paid for soft roasters, possibly 5 cents a pound more on the average, but this hardly pays for the extra months capons must be fed. The time will come, of course, when capons will be in as great demand in California as they are in the East, and that time will be hastened by an increase in capon production. It is worth while for the family table if for nothing else.

CALIFORNIA PLAN OF LIVESTOCK AUCTIONS

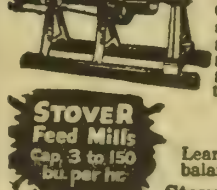
(Continued from Page 639.)

ground for disputing the statement that California breeders have been provided with a high class sales service, netting them average prices not surpassed in other sections and at the lowest selling cost in America.
In accomplishing the above results, no single case of by-bidding has been proved—and but a few suspected.
In four years' time but two bidders have defaulted in paying for their purchases and in each instance steps have been taken to prevent repetition on the part of the same buyers.
As stated before, only two occasions have arisen for the appointment of committees to adjust complaints.
Not the least of the service rendered sellers has been the prompt settlement of the financial details of sales. As a usual thing complete settlement is made within 24 hours.
As stated in a former article, at the time of organization it was unanimously agreed among the directors that the operations of the company would be directed strictly to the best service possible to render the breeders in its field, that no one of them would expect profit, salary or any other remuneration from the operations of the company, and that if any surplus should accrue it would be so handled as to benefit all breeders in its field.
That policy has been strictly adhered to. During the course of four years of operation a modest surplus sufficient to render the company stable and sound was accumulated, and January 1, 1921, a public announcement was made that from that time forward there will be refunded to the breeders selling through the organization the net surplus realized during each calendar year, said surplus to be prorated according to the amount of commission each breeder paid. The company's books for 1921 have not been closed at the time this is written, but it is understood that the refund will amount to at least one per cent of the commissions paid. Such a refund will further reduce the cost of selling to the breeders.
Ever alert to extend service to California breeders, the California Breeders' Sales and Pedigree Company, in March, 1921, reorganized in such a way as to be permitted under the California law to conduct a financial department for the financing of sales. At the time of the change an opportunity was extended various breeders to make investment.
The loan feature of the business has now been in force for about ten months, during which time the company has been able to extend liberal credit to men of moderate means who evidenced a desire to enter the pure bred business. This feature has also enabled the company to relieve the seller of any burden attached to carrying notes received in sale.
If measured by protection and service furnished the buyer or by satisfactory prices and low selling costs afforded the seller, or by well directed effort to extend in a sound and legitimate manner the influence of better livestock, it would appear that the California Breeders' Sales and Pedigree Company has justified the support California breeders have accorded it. Likewise, it would appear that no man or set of men, no paper or group of papers could fail to be impressed with the merit of this plan of selling over the more common practices prevalent in other sections—yet it is a fact that numerous attempts have been made to discredit the plan. Some of the methods resorted to have been assinine in conception and contemptible in attempted execution. Some of these activities will be discussed in a later issue.

Ranchers Plan Field Meets

Lower the Cost and Increase Production per Acre

A series of field meets is now being held throughout Southern California, following similar meetings held successfully by the ranchers of the northern part of the state. Fourteen or fifteen such field meetings already have been arranged from Camarillo on the north to Chula Vista on the south and other meetings will probably be arranged by ranchers in many sections as soon as the successful results of these meetings become known.
The plan of the meetings is to make an intensive study of the problems and conditions of each district and by study and discussion to overcome the peculiar conditions of soil and climate.
Among the different Los Angeles firms, who have assisted at these field meetings, the service department of the Dixon & Griswold Co., 130 No. Los Angeles Street, Los Angeles, have been conspicuous. Their La Crosse Orchard Disc and Mold Board Plows, which were designed in California especially to meet California conditions and which are, in fact, the ideas of prominent California growers, have been in almost daily evidence.
As the result of the series of field meets throughout the state it is expected that costs will be reduced and the production per acre of California ranches will be materially increased.
Ranchers who would desire to attend the meets or who are interested in the new La Crosse Orchard Disc Plow will be given dates and locations of the meets and descriptive circulars of the La Crosse Plows upon application by postcard to Dixon & Griswold Co., 130 No. Los Angeles Street, Los Angeles, California

STOVER

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Ground feed makes better stock—saves 25% of the grain. Stover Feedmills grind any grain to any degree of fineness. ½ H. P. to 40 H. P. capacity.
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Learn how to make a proper balanced ration for your stock.
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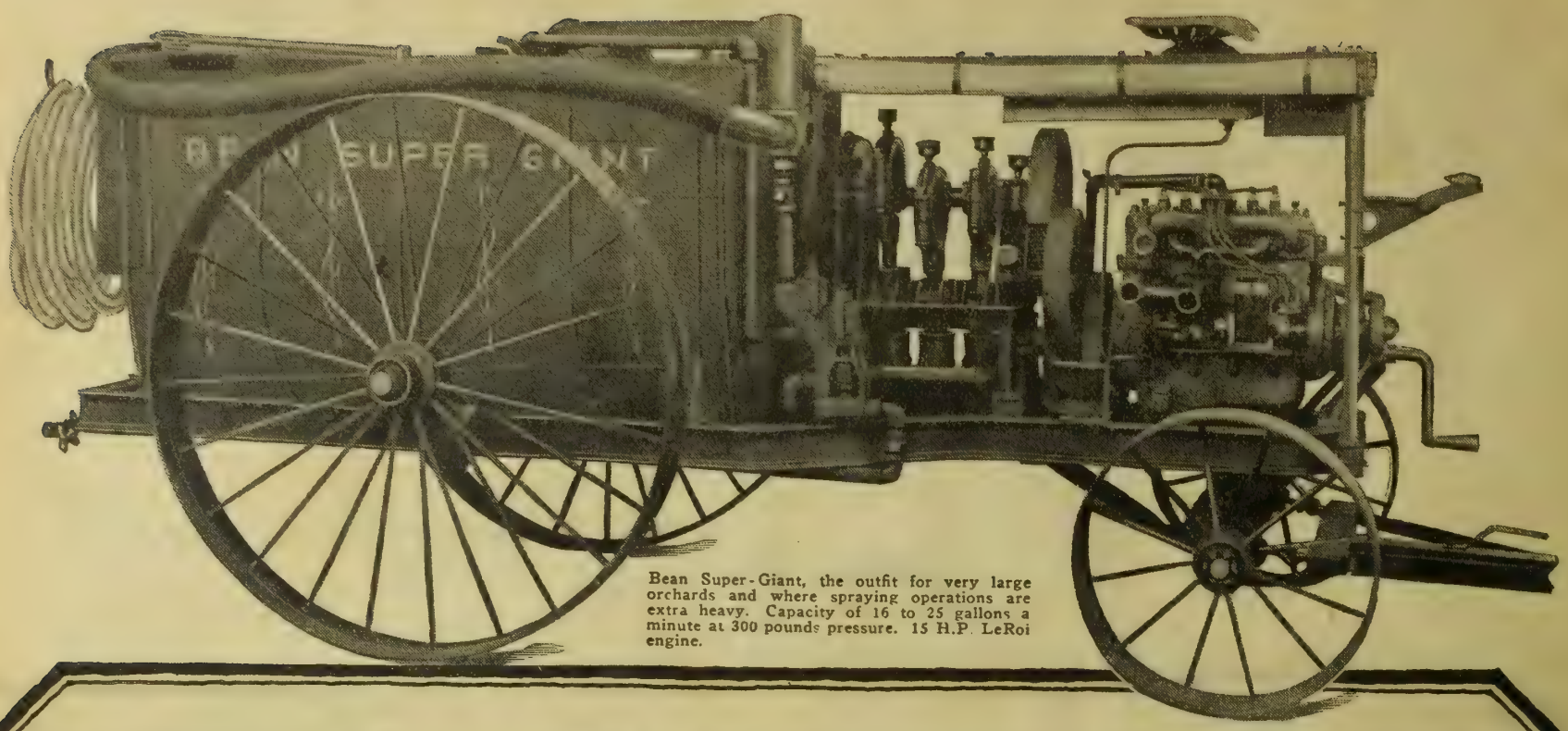
DEALERS EVERYWHERE



Bean Super-Giant, the outfit for very large orchards and where spraying operations are extra heavy. Capacity of 16 to 25 gallons a minute at 300 pounds pressure. 15 H.P. LeRoi engine.

Insure Your 1922 Crop with a "BEAN"

There's money ahead for the grower who takes good care of his trees. Thorough and energetic spraying is the only safeguard against tree diseases that reduce the crop, result in inferior fruit, and even kill the trees, if permitted to run their course unchecked. Adequate spraying equipment is vital. Makeshift outfits and old type rigs with insufficient pressure and too limited capacity will not do. You need a sprayer that will cover your orchard quickly and effectively with the least trouble and expense. In brief,

You Need a "Bean"

While retaining all the sturdy, dependable features which have made the Bean line famous, several important improvements have been made this year, including the Bean 6 H. P. engine, which is used on all our larger outfits with the exception of the Super-Giant, which has the LeRoi 15 H. P. engine. The Bean engine is the latest and best production of Mr. E. B. Cushman, noted as a designer of good engines.

Bean Troubleless Ball Valves

Bean Threadless Ball Valves can be opened up entirely and every part removed in less than two minutes. This is done without lowering the pressure, stopping the engine, or drawing the liquid from the pump.

Porcelain-Lined Cylinders

Used on Bean Sprayers since 1886 and proven to be the correct solution to the problem of long-wearing cylinder lining. These cylinders never need replacing under three or four years, and we have known them to wear for fifteen.

The Bean Pressure Regulator

The biggest single feature of the Bean line. It holds the pressure exactly where you want it, saves fuel in the engine, and wear and tear on the pump, and is absolutely safe and dependable. Fully described in our new catalog.

One-Piece Steel Bedplate

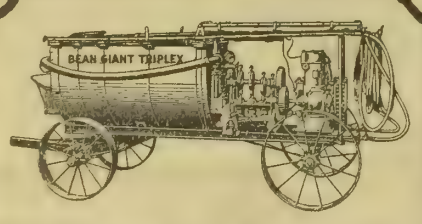
The Bean is the only outfit built today with a steel bedplate made in one piece, without wood floor. Every bolt from the engine, pump, and tank is secured to this frame, thus insuring the utmost rigidity. H. A. Watkins of Fruita, Colo., has just written us as follows: "I never knew my Bean to stop running when crossing creases as some others do. My rig runs absolutely without trouble."

Only Pump Without a Stuffing Box

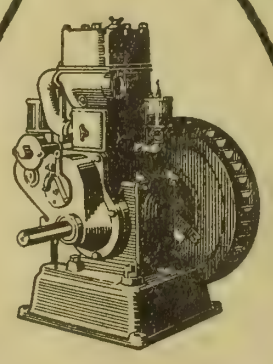
No stuffing box on a Bean pump, therefore no stuffing-box troubles. The cup-shaped molded plunger, an exclusive Bean feature, is held so close to the porcelain lining of the cylinder on the downstroke that no packing box is necessary. Less friction, too, on the upstroke.

Many Other Important Advantages

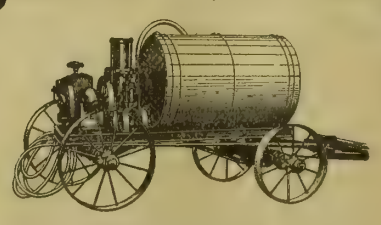
Get the new Bean Catalog, which illustrates and describes the entire Bean line from the mighty Bean Super-Giant, shown above, with its capacity of 16 to 25 gallons a minute at 300 pounds pressure right down to the little Bean Simplicity, the most popular little rig known to the fruit-growing world. Sign and send the coupon for your copy of the catalog.



Bean Giant Triplex, Outfit 629. Capacity of 12 gallons a minute at 300 pounds pressure. 200-gal. tank. Equipped with new Bean 6 H.P. engine.



Bean 6 H.P. engine, a lightweight, compact, self-contained engine, especially adapted to sprayer work. Runs surprisingly free from vibration, even under full power Standard equipment on our larger rigs. Can also be furnished to replace the engine on your old sprayer.



Bean Simplicity, Outfit 604. A handy, compact power rig for the small grower. Capacity 4¾ gallons a minute at high pressure. Can also be had without truck.

MANUFACTURED BY

BEAN SPRAY PUMP CO.

Originators of the first high pressure sprayer

121 WEST JULIAN STREET
SAN JOSE - CALIFORNIA

BEAN SPRAY PUMP CO.
121 West Julian Street, SAN JOSE, CALIFORNIA

Please send me a copy of the new Bean Catalog.

*Name*_____ *Street*_____

*Town*_____ *State*_____

*Kind of Fruit*_____ *No. Acres*_____

50-522

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LVII — December 24, 1921 — No. 26

DEC 29 1921

Insure Your Fruit Crop Now by Spraying
PIPE
WATER PIPE
ORDER YOUR FRUIT TREES & ORNAMENTALS NOW
Ornamentals
Fruit Trees
Roses
Further Reduction of More Than 10% in Prices of
TANKS
60300 Gallons of water per minute
"The hens that PAY are the hens that LAY"
Farm Engine Supremacy
Owners Who Spray Have Orchards That Pay
Implement Prices Down
ALMOND HULLER
TREES
Why the Farm Needs the Motorcycle
Longer Life For Tractors
Wagons, Silos and Farm Implements
The Home is the Supreme Human Gift
Each week the Cultivator brings its best into the Home. Today it brings a greeting from the many hands and brains that serve that Home. To each, from everyone, a hearty Christmas wish for Health, Hope and Happiness for the coming year.
Two Kinds of Saving
No Disappointments
To Realize Your Ideal Home— Give Thought to its Furniture
For the Farm
Reliable Power for Farm Service
Why not Have RUNNING WATER In YOUR Home?
Headquarters for FRUIT TREES
A Modern Home is a Wife and Mother Saver
-just dip in!
Concrete Costs Less than Corn
Correct lubrication for your tractor
Poultry Can Be Made Profitable
Install a good piano NOW in your home
REDUCED RATES
—to and from Eastern and Pacific Coast Points
A Small Cash Deposit
10%
MORE EGGS LESS FEED LOWER COST
Vigilance
"CERTIFIED" Electric Service
All Uncertainty Removed
No More Reason why You Should Milk by Hand than Harvest by Hand

Established 1877 Forty-fourth Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877
Combined with California Cultivator 1914
Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916

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The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

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Saturday, Dec. 24, 1921

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

Cultivator's weekly circulation If among the more than 40,000 any fail to find any article they desire to purchase advertised in the Cultivator's columns, a special request is extended you to let your wants be known to the California Cultivator and we will place you in touch with proper parties.

EDITORIALETTES

The cover hardly speaks for itself, at least not until the reader has thought a few minutes and perhaps read the article which appears on the opposite page. The idea in producing a cover illustration like that is to create an interest in the real literature which appears on nearly every page of the California Cultivator every week.

* * *

It is probable that Secretary of Commerce Hoover is about the most versatile and about the busiest man in President Harding's cabinet. Now he tackles another job, having been appointed government representative on the Interstate Colorado River Commission. A portion of the seven states have appointed their commissioners; let the rest get in line. Hoover is the kind that gets action. Let's Hooverize the Colorado.

* * *

It is raining. It seems to be the same kind that Noah prepared for, and a lot of Californians have either had to proceed as Noah did or else wade, and at present writing the clouds indicate that the wading will continue for some time. Many bridges have been washed away and occasionally damage has been visited upon farming lands, but as a rule farmers are possessed of one great happiness because of the drouth broken. It has been a general coast rain, thoroughly soaking from Rainier to San Diego. The precipitation at Mt. Wilson has reached nearly a score of inches. In producing sections it has varied greatly, ranging upward from two inches.

* * *

Los Angeles County flood control measures have served most admirably and the damage which in former years was great because of such a storm will be vastly lessened. Especially effective has been the Devil's Gate dam, which for the first time has impounded the flood waters and created an inland lake.

* * *

Nowadays we have an association for nearly every activity. If it hadn't been for this rain it is very probable we could have had an association for the promotion of a movement to secure greater precipitation. This would, of course, result in a special Rain Week, to supplement some of the "Weeks" we have been having for more perfect packages, fewer accidents, more raisins, cherries, oranges, olives and onions. These special days and weeks which we observe are all right. We fully endorse them, and as a further suggestion, how about giving us a rest week?

* * *

War taxes are going to be reduced on January 1, 1922. Some will be eliminated entirely. We will probably never get back to the 1914 basis, but it is certainly encouraging to know that our soda water and a few other things are to be exempt.

* * *

An Eastern exchange suggests: "It pays to warm up the drinking water for the dairy cow." What an awful shock it would be to California cows to see any such suggestion. However, the Easterner takes the matter quite seriously and suggests: "The ordinary tank heater used for warming water for the house is excellent for the purpose, and for fuel there are cobs, wood, or good old yellow corn."

MERRY CHRISTMAS

Peace on earth and good will to men seems nearer than ever before. With the conference in Washington and the world longing for opportunity to recover from the awful struggle, we hope that the "good tidings of great joy which shall be to all people" may yet be heard. California fields have been so wonderfully blest that there is at home a feeling of relief and even of happiness. The Cultivator wishes for every one of its readers the merriest and happiest of Holiday seasons.

COOPERATIVE STORAGE

One outstanding lesson of the past year is necessity of storage facilities and capital sufficient to hold crops from low markets. To a greater degree than elsewhere California growers through cooperative effort can store their crops. There are many associations with warehouses sufficient to store the crops of their members, but there are numerous crops in California that when produced must be sold immediately because the producer has no storage facilities. Speculators have taken advantage of this condition since time was. Usually wheat, barley, corn, alfalfa, beans and similar crops are lowest in price at the flood tide of harvesting or threshing. Many farmers must sell. After the rush is over, and the world's supply and demand is known, prices are usually better. Those who can store and hold crops receive the better prices. Those who are forced to sell early many times sell at an actual loss on cost of production. It would seem then that conditions would be more generally equalized if more storage facilities were provided. Elevators, warehouses, cooperative cold storage and packing plants owned by the producers will do more to do away with speculators than will legislation.

Let us resolve for 1922 to surround ourselves on these thousands of wonderfully productive California farms with buildings and similar facilities that will enable us to make the most of our labors.

MORE HOMES NEEDED

The year 1922 gives promise of being the greatest year of construction in the history of California. The year 1921 so far as records on building permits are concerned indicates that the past year has set a new record in both number and total value of buildings constructed. But early in the year labor was not available, and during the year several strikes among seamen who bring lumber by boat from the Northwest curtailed the supply of building material. Thousands withheld building operations waiting for lower prices. A building trades strike in the Bay district hampered operations in that section. Now it would seem we are fairly on our way to overcome the shortage of homes caused by the cessation of building during the war.

It is to be regretted that building permits cannot be registered in small cities and country districts so that actual conditions can be recorded. Only in the large cities have we accurate records of construction work. In the city of Los Angeles building activities during the year have exceeded those of any other year in the history of the city.

Pausing a moment, we ask why is there so much construction work at this time? There are reasons on every hand. First, California's population has increased 1,049,312 in the past ten years, filling all vacant properties and all that could be built. It is stated on good authority that the buildings being constructed now are not exceeding the requirements of the increased population. From all over the United States people are coming to California. Its fame increases from year to year as people who come here to live write back to their home folks to come and share in the climatic riches and fortunes of the Golden State.

And when they come it means more homes, more apartments, more bungalows, more farms and more population.

This increasing population insures the value of properties. Construct a home, and if you cannot occupy it there are others who will be glad to purchase it or pay a rental that will insure a good return on the investment. The demand for homes brought about by the increasing population in California makes an investment in a home a most wise investment.

A MODERN FARM

A California farm home may be possessed of all the advantages of city conveniences and avoid the inconveniences. Living in the hubbub and turmoil and traffic of the big city is driving, or rather alluring, many well-to-do city men to the country. They go to the country for the freedom they can enjoy and stay there because of it and because they can enjoy in the country home all the so-called modern conveniences. Our grandfathers sawed their own wood and many of them dug their own coal. Conveniences then consisted of a fireplace, some tubs, a baseburner, maybe a coal bucket. There is scarcely a person who reads this but has thawed out a pump back East to start the day's proceedings.

Contrast this with our thousands of modern California farm homes. Available now are running water in the homes, electric lights, either from current or the very efficient home lighting systems that have become so popular, furnaces, gas, wood, coal and oil heaters of all kinds, the automobile that takes one quickly to and from trading centers, churches, schools and gatherings, and all the new devices that make life the more enjoyable.

What have all these modern conveniences to do with our country life in America? This one big fact is apparent: Where a decade ago the tendency was to farm only because it offered a remuneration for hard work, and farmers quit farming by the thousands as soon as they were financially able to do so, moving to town to retire, now the tendency is more to appreciate a farm and a home in the country. The business of farming is succeeding the drudgery of farming. Inventive genius realizes the tremendous market in 54 per cent of all the homes in America—farm homes—and skill and genius have given the farm home all the comforts of the city dwelling.

The automobile is without doubt the greatest convenience of the farm. Power from gas engines applied to the dynamo gives light and electric current, water under pressure and power for the electric washer, the electric iron, the electric fan, the sewing machine, the cream separator—everything. The only reason more people do not have good farms and good farm homes is because they are poor and have to live in a big crowded city.

The day is coming when there won't be farms enough to go around in this great state of California. If you have one, keep it. Make it just as comfortable as you can and as profitable. If you haven't one, get one if possible. Indications are that they never can be secured for less money than now and no doubt will cost more. Build your home on a California farm for permanent comfort and satisfaction.

Uppermost in the minds of the publishers is the desire to give to each subscriber a full dollar's worth of information in each week's issue, regardless of the yearly subscription price of the California Cultivator. Suggestions from subscribers along the line of articles desired published are always welcome. The Cultivator guarantees the reliability of its advertisers and each of the advertisements contains valuable information that should be made use of by every reader. Advertisers are willing to give further information on request where California Cultivator is mentioned.—Business Office.

California Cultivator

Vol. LVII, No. 26 | Los Angeles, December 24, 1921 | One Dollar Yearly

Make the Farm House a Real Farm Home

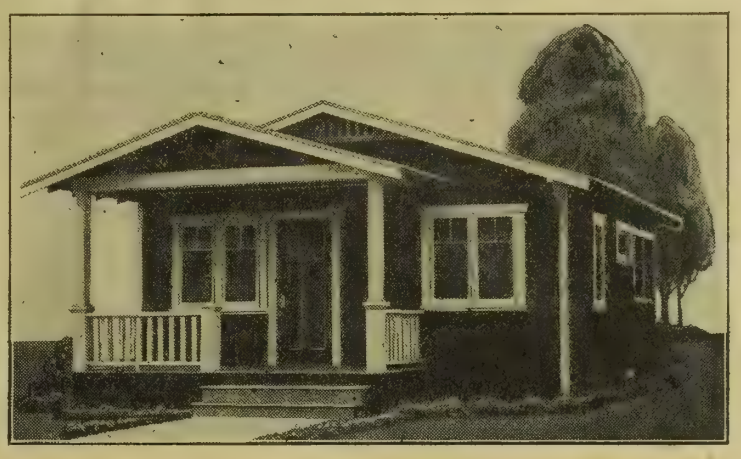
THE time is past when the farm home is a crude and illy built affair while on the same farm there are great fine barns and stables for the livestock. This does not mean that the money making end of the farm is less efficiently equipped, but it does mean that home efficiency and home atmosphere have improved. And the whole movement has been a money making movement. It is possible this step forward has been more pronounced in California than in Middle Western states for certainly California homes are well built, artistically designed and efficiently equipped. From necessity the pioneer felled the forest trees or, in the language of the day, made a "slashing" which after months or perhaps years was burned off and crops planted. The pioneer in California rarely has necessity for the removal of forest trees, but he sometimes confronts desert and other conditions calling for equally as strenuous a life. Under such conditions existence is the prime factor, and comforts come only after years of work.

Still, pioneering today, even in the reclamation of the desert, does not require, or at least should not, such sacrifices as did the pioneering of a few generations ago, for today with good roads, the telephone, the conveniences which come from hydro-electric power and light delivered in nearly all sections of the state, the comforts of an up-to-date urban community are found in many desert sections.

It's worth while occasionally to stop and take stock of our blessings, hence this week we refer at some length to the comforts and necessities of a California home as they have been often touched upon in an advertising way in the columns of this paper during the past few months. So we refer first to the cover, a hodgepodge of nothing at first appearance, yet, more carefully looking it over, seen to be made up of catch phrases from Cultivator advertisements which call attention to many a home comfort which is today becoming a home necessity.

We hope that page will call attention to the excellent reading matter in advertisements. Some of the most instructive and interesting and valuable reading matter in the papers and magazines today is that which is ordinarily termed advertising. Americans have become readers of advertising, and we believe it is to their profit. The per capita consumption of California fruits is safely double that of a decade ago, and this because of advertising campaigns inaugurated and persisted in. On the other hand the homes of California fruit growers have been made more livable and filled with comforts because of the appeal made in advertisements of manufacturers and dealers in those things which go to make for comfort and efficiency.

Not to give a list, but merely to mention some of the comforts, there is music. Of course, the proper place to begin enumerating would be the foundation, but we believe we are justified in suggesting that the bride and groom of today in planning for a new home, even in a remote portion of the desert, will begin with those things which the former generation would consider entirely non-essential. The bride of today wants it understood that she will not participate in hardships such as were endured by her mother who, while her husband was doing his best to reclaim the desert under most adverse circumstances, would go out and gather mesquite or greasewood in order to get out the week's family wash. So in planning for the new home she insists that some of the brighter things shall be hers, the phonograph, or the piano or



at least some of the so-called luxuries —and she gets them. In the more humble of homes today it is the exception to find one into which real music does not enter.

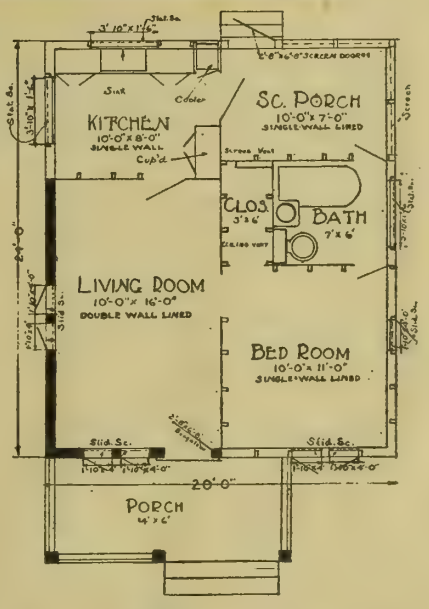
But to proceed in a more orderly way—to begin with the foundation. Mudsills formerly sufficed; today it's brick or concrete, and concrete with present day prices of cement isn't so expensive but it should be under every home. Its dependability has been proven through its use for lining in irrigation canals, for irrigation pipes, stable floors, silos, milk houses and all over the farm, and now we are getting it under our houses. Some have gone so far as to construct the entire home of it, even to the roof, but this is perhaps more expensive than the usual frame construction, and for that California offers lumber at prices and of such quality that no other section can excel us. In this connection it may be well to remember that high priced labor is not essential to concrete construction. Cement makers have supplied us with such complete directions and specifications that our concrete, mixed with a liberal supply of common sense, makes possible construction by the farmer himself.

After the foundation is in and before the frame goes up, attention should be given to the plumbing, and if not possible to carry to completion the plumbing it should at least be roughed in with an idea as to future needs.

Cesspools, septic tanks or even deeply laid drainage pipes carrying to distant portions of the place enable the farm to have all the plumbing conveniences possessed by the sewered city. All we can say regarding the conveniences to be added to the farm home in the form of up-to-date plumbing has been well said in many an advertisement appearing in the Cultivator during the past six months.

As to plans, it is possible today to buy ready made houses. We would not deny to every home maker the pleasure—one of the greatest in life—of planning the home according to cherished ideals and making the dreams come true, but fortunately the ready made house folks are supplied with architects who will work into and make a feature of their houses such changes as are desired.

Then comes the paint. And next to real conveniences nothing is more essential to attractiveness and to service than real paint. The painters have used the slogan, "Save the surface and



A Complete Little Cottage

Modern home for small ranch or for housing ranch help. Ready cut or portable houses are inexpensive and save both time and material.

you save all." And surely in the matter of appearances many a dilapidated looking structure has been made a thing of beauty by a bit of color applied in the form of paint. And above all is the roof worth preservation. It costs money to re-roof a house. And with the painting for preservation don't forget the paint which is necessary for appearance and sanitation on the inside. There are enamels, varnishes and paints for every purpose, and let us be sure the kitchen has its quota.

As is noted about the plumbing, if electric lighting fixtures, vacuum cleaners, electric washers, irons and all other electrical labor savers may not be installed at once, the out of sight wiring may at least be done and these added later.

But further details are hardly necessary. The idea in making this little talk on home matters between ourselves is not to give plans and specifications or work out all the details of more conveniences and "more necessities," but is simply to inspire to thinking and demanding of ourselves more which leads to greater comfort and happiness on the farm.

To secure these details we believe we are entirely justified in referring our readers to the scrap book on the cover page. It is somewhat of a puzble, but will offer many a suggestion which will be found more completely given in advertisements appearing in former issues and which will appear in issues to come. Also let us not lose sight of the fact that "home" is not simply within the four walls of the house. The shrubs, the flowers, the bluegrass, the clump of trees behind the house, the equipment in barns and buildings, all unite in making the comfort of a home. And for all these needs there are suggestions in those scraps of advertising. Besides the music box, the piano, the camera, the telephone, house furnishings, electric appliances and other things essential for the inside of the home, there are suggestions for fruit trees for the home orchard, tanks and plumbing equipment, concrete paints, oils and greases for the tractor, hullers for almonds and walnuts, spraying equipment, farm engines, cream separators, poultry feeds and remedies, milking machines, pumps, tractors and implements, autos and motorcycles, and after all the rest are enumerated a sip of chocolate and a slice of raisin bread.

Let us make it a real farm home as well as a farm house. Let the boys and the girls learn that their home offers even more than the average town home in opportunities and in real enjoyment. When that is done the slogan, "Stay on the farm," will be unnecessary.

KILLING TREES

The most effective method of killing trees has been proved, according to the New Zealand Journal of Agriculture, to be a combination of ring barking and arsenical poisoning. This method consists in making a series of downward cuts with an axe, completely girdling the tree as near the ground as possible. None of the chipped wood is to be removed. The object is to make a kind of basin to hold the liquid. Poisoning should be done while the sap is down, the best time to treat willows being when the leaves are falling. To make the arsenical liquid, boil 3 pounds washing soda and 1 pound white arsenic in 1 gallon water; keep stirring till dissolved. Take from the fire and add 3 gallons cold water. A quart of this mixture is sufficient for a fairly large tree. If preferred 2 pounds caustic soda may be used in place of 3 pounds washing soda. In this case boiling is not required, as the heat generated by the caustic soda is sufficient to dissolve the arsenic. This liquid is very poisonous, and, as it is practically impossible to cleanse the vessel in which it is boiled, great care should be exercised in its future use; water from it would poison any animal. Instead of this mixture any of the proved weed killing specifics may be used. A strength at least double that advised for killing weeds would be necessary. This would save the trouble of making a special solution.

Agricultural News Notes of the Pacific Coast

Northern California

Colusa has hopes of securing a cannery for next season.

G. M. Homans, for many years state forester, died last week.

Shasta County is planning the building of three fine highway bridges.

A farm bureau center has been organized at Graton, Sonoma County.

A thousand new members are to be added to the San Joaquin County farm bureau.

The almond growers are still valiantly fighting for protection on the 5-15 basis.

The state university offers a short course in gas tractors at the Davis farm school January 2-7.

The Bodega-Valley Ford farm center is planning for a dairy cattle show soon after the new year.

Stockton potato growers report at least 2,500 acres of potatoes not to be dug because of low prices.

San Joaquin County planted 4,865 acres of vines during the past year. Of this 2,888 were Tokays.

A rumpus in the Glenn-Colusa irrigation district is resulting in agitation for recall election of the directors.

New directors have been appointed for the San Joaquin Fair and plans are starting for a fair to be held in the early fall.

Sonoma farm bureau has been conducting a series of pruning demonstrations under direction of Prof. Whitten.

Placer County farmers are discussing matter of farmers' mutual fire insurance under direction of J. A. Teagarden.

The Petaluma Cooperative Creamery manufactured 71,000 pounds of butter in September, 1921, as against 42,000 pounds in 1920.

Sonoma and Marin Counties are highly pleased at the winnings of the Pacific Slope Dairy Products Show held recently at Stockton.

Four long pruning demonstrations were given in Placer County last week under arrangements made at the Placer fruit growers convention.

The Rice Growers Association is keeping growers posted on conditions of the market so that they will not be induced to sell at lower prices than market justifies.

Farm Adviser Leonard of Sacramento County is preaching the gospel that the strength of the farm bureau movement lies in maintaining policy of non-partisan, non-sectional interest.

Last week at Stockton five conventions were held, all connected with dairy interests; ice cream manufacturers, milk dealers, California Dairy Council, creamery operators and California Butter, Cheese and Ice Cream Makers.

The annual convention of the California Cattlemen's Association was held last Saturday at the Palace Hotel, San Francisco. Representatives were present as well from the state department of agriculture and the forest service.

Residents of Tehama County are moving to reduce the number of grade crossings on railways. This movement has been started by the terrible accident in which a train struck a bus load of high school pupils, killing instantly ten. Four others have died since and only one of the load is still living.

Central California

Annual fig growers' convention and institute at Fresno, January 13-17.

The Fresno County farm bureau is forming a cow testing association.

San Joaquin Valley's Citrus Fair at Visalia last week brought out a big attendance.

Eighty-five applicants for citizenship are to be examined at Fresno on December 29.

Creameries at Hanford, Lemoore and Riverdale paid for November deliveries $370,000.

The Tulare Cooperative Poultry Association last month shipped $6,400 worth of poultry.

The citrus fair at Visalia last week brought out a large attendance from all valley sections.

The Waterford-Hickman farm bureau will give its annual dance at Hickman, January 7.

The Reedley, Fresno, chamber of commerce is arranging for a community Christmas tree celebration.

It is estimated that about 70 cars of fruit daily are leaving Porterville over the Santa Fe and Southern Pacific.

Proposal to transfer ownership of the fair site and buildings at Tulare to the county has been turned down.

Three days of pruning demonstrations were given in Stanislaus County last week under auspices of the farm bureau.

The federal census shows that out of Fresno County's 8,917 farms, 7,792 are irrigated. The farm acreage is 1,319,531.

Tulare County orange growers say no harm was done the fruit by recent cold weather; it but served to hasten coloring.

Because of the slow olive market growers of Yuba County are considering establishing a community cooperative pickling plant.

The sixth annual fig institute will be held at Fresno, January 13 and 14. Many entries have already been received for the dried fig contest in connection with the event.

Experts in long pruning from the university farm at Davis will give demonstrations in Santa Cruz County during the Christmas holidays, under auspices of the farm bureau.

Railroads compute carload shipments of grapes from California this season at 28,800, distributed in 6,200 cities and towns. The total value is estimated at over $50,000,000.

The Sun-Maid Growers is pushing its raisin sales in Europe and the Orient. It is planned to open offices in London and in one of the larger cities of China soon after the first of the year.

Prof. Bioletti of the state university gave four days to demonstration of vine pruning in Fresno County last week. Tree pruning demonstrations were given later in the week by G. L. Phillips of the pomological department.

The San Benito County farm bureau, although one of the youngest in California, has already done some excellent project work. The Farmers Mutual Fire Insurance Company of San Benito County has been a direct outgrowth of farm bureau work. The cow testing association is coming to a point where it is self supporting. Mr. Screaton is the official tester.

Southern California

The demand for lima beans is increasing; last week it went from $5.60 to $5.80.

The Yucaipa News reports an increasing number of orchardists using subsoilers.

Cotton gins of the Palo Verde Valley of Riverside County are running to fullest capacity.

Many citrus growers from other counties attended the Orange County citrus institute at Santa Ana last week.

Tests of various fertilizers will be made in Los Angeles County orchards the coming year under direction of the farm bureau.

The California Walnut Growers Association has distributed among its members $2,000,000 as final payment on this year's crop.

Orange County supervisors have called for bids on paved highway connecting the county park with the county highway system.

H. M. Armitage of the Whittier insectary is making plans to liberate colonies of parasitic enemies of red scale in citrus orchards of Orange County.

The Associated Chambers of Commerce of Riverside County is planning a big "Dairy Day" program when all phases of the dairy business will be featured.

President O'Neill of the Imperial Valley Vegetable and Melon Growers Association says outlook for the lettuce crop is very promising and in general the pea crop shows very good stands.

The chamber of commerce of Calipatria, Imperial County, is asking that the sheriff appoint deputies to be stationed at Niland to intercept the crowd of tramps and shady characters who are coming into the valley.

Apple growers of the Yucaipa Valley of San Bernardino County are getting together in an effort to secure one selling agency for their fruit, such as the California Fruit Growers Exchange or the Mutual Orange Distributors.

The report of the reconnaissance soil survey of the central southern area of California made by the bureau of soils, United States department of agriculture, in cooperation with the state of California, has been published and is now available.

Exposition Park Corporation has purchased 80 acres at San Luis Obispo and will put it in shape this winter to hold the county fair next fall. It will have an auto race track one mile long, barns and sheds for stock, a landing field for airplanes and a baseball diamond.

Tractor schools are announced by the farm agents of Los Angeles at Covina high school, January 16-23; Orange County at Santa Ana high school, January 30-February 4; Imperial County at El Centro, February 13-18; San Bernardino and Riverside Counties, time and place to be determined.

Another road meeting of the chamber of commerce of northern San Diego County was held at Ramona, December 2. It was decided to ask the completion of the road from San Diego through the northern mountains of the county, making a loop from Lakeside through Ramona, Julian and Descanso back to Lakeside.

The Coast and General

Oranges from the Yuma Valley of Arizona are showing beautiful color.

Regular shipments of lettuce are being made from Glendale, Arizona.

Florida expects to have over 7,000 acres planted to cabbage for the 1922 season.

Nearly 20,000 carloads of apples have been shipped already from Washington.

Arizona has more than 5,000 registered Herefords, nearly 3,000 bulls in service.

Light frosts in the Salt River Valley of Arizona have slowed up growth of alfalfa.

About 20 per cent of the fall grain had to be resown in Klickitat County, Washington.

Snow in Northern Arizona and New Mexico has put ranges in good condition. Some were in serious need.

Apple shipping records at Wenatchee, Washington, were broken recently when 300 carloads were shipped out in 24 hours.

It is reported that 75 per cent of the potato crop of Coconino County, Arizona, is being stored by growers in the hope of getting $3.

The national convention of the Farmers' Union at Topeka, Kansas, re-elected as president Chas. S. Barrett of Union City, Georgia.

Yakima Valley, Washington, sheepmen have marketed about 200,000 mutton sheep this year at an average of about $5 each net to the producers.

Olives left on the trees in Arizona were nipped by recent frosts and are being used exclusively for oil; the pickling season is practically over.

The Washington experiment station at Pullman will give a one week course in berry growing January 16-21; another in tree growing, January 23-28.

The government census report indicates the number of pure bred hogs in the United States as 2,049,900. Of this number 1,545,620, or over 75 per cent, are Poland China and Duroc-Jersey.

Governor Alcott of Oregon has called special session of the legislature to consider a special election on tax levy for the proposed world's fair at Portland in 1925. The special session convenes December 19.

The annual six weeks' farmers' winter school will open at the Western Washington experiment station at Pullman, January 2, 1922. Six weeks' course in poultry management and in dairy and livestock farming are offered.

According to figures announced by the federal bureau of markets at Spokane, Washington, Oregon, Montana and Idaho shipped a total of 43,215 cars of fruit, produce and vegetables during the six months ending October 31. It is estimated that the four states will ship a total of 75,000 cars of orchard and garden products before the present season is over.

During the week ending today six agricultural conventions were held at Spokane, Washington, including those of the Washington and North Idaho wheat growers associations, Washington State Horticultural Association, Northwest grade and pack conference, Washington and North Idaho Farmers Union, Northwest potato conference, and State Non-partisan League.

Calimyrna vs. Kadota

By Ira J. Condit

THE pendulum of progress in the California fig industry has been swinging back and forth from one variety to another for many years. We hope it will keep swinging until it is able to stop at a more decisive point than is possible at the present time; for the discussion regarding fig varieties is still being waged by intending planters. The former topic of "Calimyrna vs. Adriatic" has now in many sections given way to "Calimyrna vs. Kadota," or "Kadota vs. Mission."

The chief advantage of the Smyrna fig from a commercial standpoint is due to the excellent quality of the dried fruit. No other fig growing country has been able to produce dried figs of other varieties which approximate the Smyrna in flavor and quality. Figs of Italy, Spain and Portugal are all inferior and are exported to other countries mainly for cooking purposes. Since the trade and the consuming public have recognized this superior quality dried Smyrna figs have always been in greater demand and are quoted at higher prices than white figs of other varieties. The reputation of the dried Smyrna fig is based on quality and the California fig growers must learn to produce a dried Calimyrna second in quality to none, or else accept lower prices in the fig markets of the world.

The fresh Calimyrna fig at the proper stage of consumption has no superior among other fig varieties. Its golden yellow color, thin skin, amber pulp and rich flavor make it unexcelled as a fresh fruit. When picked in the proper stage the fruit can be marketed fresh not only on the Coast but by modern methods of packing and refrigeration, in distant markets as well.

Calimyrna fig trees grow as rapidly and bear as early as those of other varieties except possibly the Kadota. A few figs are frequently produced the third season but the trees cannot be expected to produce profitable crops until the sixth or seventh year in the orchard. The trees do not bear a first crop since the few figs which appear on the old wood cannot be caprified commercially by any of the varieties of caprifigs so far developed. Some of these first crop or breba Calimyrnas set and mature without caprification but they are seldom abundant enough to be of commercial value.

Experiences of growers in various parts of the San Joaquin Valley have shown that the Calimyrna tree will bear as heavily as the Adriatic at the same age if the former is properly caprified, by which I mean sufficiently to cause all or nearly all of the fruit to set and mature. Caprification is a detail in fig culture which must be attended to at the proper time and in the proper manner to get best results. Growers must secure the best varieties of caprifigs and provide against loss of crops by frost in order to reduce the cost of production and insure profitable crops.

The Kadota fig has been most commonly planted in Tulare and Fresno Counties where orchards from one to ten years old are common. The small immature fruit seems to be susceptible to heat damage in June and July, from 10 to 40 per cent of the crop being damaged or ruined in some seasons. For this reason the most extensive plantings of Kadota figs are being made in Merced, Stanislaus and San Joaquin Counties and in portions of the Sacramento Valley where the temperature is more uniform and the humidity higher.

The Kadota tree is a rank grower when given an abundance of water. Continued frequent irrigations are practiced in order to encourage a vigorous growth of the tree and a heavy production of fresh fruit. The figs are resistant to splitting and souring, faults which are so common with some other varieties.

The trees, like those of the Mission, Brown Turkey and most other varieties, bear two distinct crops of fruit. The first crop is produced on old wood, mainly of the previous season, and the fruit matures in June in the warmer parts of the interior valleys. In the southern coast districts the cooler weather causes the fruit to mature much later. The figs of the first crop are of large size, pear shaped, smooth skinned, green in color and somewhat glossy. The pulp is of a light strawberry color tinted with violet, is juicy, sweet and excellent in flavor. It is valuable for fresh fruit markets and for jam making but is mostly too large and perishable for preserving or canning.

The second crop is produced mostly on wood of the present season, the fruit beginning to mature in July and continuing to ripen as long as new figs appear in the axils of leaves and the weather remains favorable for their development. As with many other varieties, immature figs often hang on the tree throughout the winter and if injured by cold, ripen in early spring. The fruit of the second crop is of medium size, globular in shape, becoming smaller as the season advances; it is of a light lemon yellow color and sweet but lacks character and flavor. When eaten for comparison with either the Mission or the Calimyrna, the fresh Kadota is disappointing to most palates. Some people prefer it, however, on account of the absence of seeds and the lack of the peculiar flavor common to most figs.

The Kadota fig of the second crop has a tough skin underneath which is a white meat or rind of rubbery consistency to which the good qualities of the fruit are largely due. This rind and tough skin preserves the fresh fruit from bruises, prevents rapid decay or deterioration, holds its color well when cooked and is the prime factor in making the Kadota a leading fig for preserving purposes. This thick rind, however, is responsible for making an inferior leathery product when dried. Ordinary dried Kadotas are, therefore, not to be considered as much of a factor in making a Kadota fig orchard profitable.

The rapidity of growth and early development of the tree, its heavy bearing qualities and resistance of its fruit to unfavorable climatic conditions have placed the Kadota among the four leading fig varieties of California. The fruit can be readily marketed fresh both to local and distant markets. It can be preserved or canned or made into jam, such products finding wide favor and good demand. The dried Kadota, while tough and inferior, is a clean and sweet product; with more careful methods of processing it can be marketed to advantage.

Experience during the past season has demonstrated that fresh figs can be picked and packed in California, precooled, and delivered in Chicago or New York in good condition for market. The Calimyrna fig is especially adapted to this fresh fruit trade on account of the large size, fine quality and attractive color of the fruit. The Kadota will carry still better on account of its firm texture, but the comparatively smaller size of the fruit will mean lower prices for it in competition with the Calimyrna.

Many tons of Calimyrna figs as well as Kadotas were sold to canning and preserving plants this season. The main objection to the Calimyrna for canning under present conditions is the large size of the fruit. It is possible that in future a premium will be paid for large, fancy figs, as for peaches, but this is not true now.

The canned fig put up in a light syrup will provide an outlet for a large tonnage of fruit whereas the preserved fig put up in a heavy syrup will be more of a delicacy. The uncaprified Kadota is not regarded as of very much value for drying. The caprified Kadota, however, is of excellent quality dried and is resistant both to splitting and souring.

On account of its large first crop of fresh figs and the second crop of figs which can be harvested fresh for preserving or caprified and allowed to dry, the Kadota seems to be the nearest approach to an all purpose fig which so far has been grown commercially.

Development of the Lower Colorado

By E. C. LaRue, Hydraulic Engineer, U. S. Geological Survey

THE Colorado River with its drainage basin comprising 244,000 square miles affects the states of Wyoming, Utah, Colorado, Arizona, Nevada, California, New Mexico and the Republic of Mexico.

Last year I said that the Colorado River was formed by the junction of Green and Grand rivers in southeastern Utah. This statement is no longer correct. The congress has changed the name Grand to Colorado. Therefore we should say that the Colorado River has its source on the western slope of the continental divide in the state of Colorado. It flows in a southwesterly direction, passing into Utah, where it receives an important tributary, Green River. The area of the Colorado River basin above the Green is 26,000 square miles, while that of Green River is 44,000 square miles. In volume of flow the Grand, now Colorado River, is the larger stream, having an average annual runoff of about 7,000,000 acre feet, as compared with 6,000,000 acre feet from Green River. Is it not possible that some map makers may call the Grand and Green rivers the east and west forks of the Colorado and thus divide the honor between the states of Wyoming, Utah and Colorado?

Survey of Canyon

In 1914 I made a boat trip to the junction of Green and Grand rivers, followed by another trip in 1915 through 150 miles of the canyons of the Colorado to Lee Ferry, Arizona. About six weeks ago I completed a third trip through 350 miles of the canyons of the Green and Colorado rivers. This region is almost inaccessible except by boat. I had an opportunity to observe any changes that might have taken place in the canyon since 1915. It is true the name Grand River has been changed to Colorado River, but I can positively swear that our pathway was not obstructed by dams completed or dams under construction. The proposed dam sites offered no obstruction to the boats except at one site where bedrock appears at the surface in the river channel. So it is apparent that the great engineering problems of the Colorado River are not yet solved. Complete development of this great river basin will place under irrigation nearly 6,000,000 acres of land, 2,000,000 acres of which are now irrigated. Less than 100,000 horsepower is now developed in the basin, but at some future time this may be increased to more than 5,000,000 horsepower.

Irrigation Features

Many important undeveloped irrigation, storage and water power projects are located in the upper basin in Wyoming, Utah and Colorado. The development of these projects will have an important bearing on the plans of development of the lower river, but the magnitude of the projects on the lower river would not be seriously affected. For 700 miles the Green and Colorado rivers flow through canyons in a region where irrigation development is not possible.

At present more than 500,000 acres of land below Boulder Canyon are being irrigated with the waters of the Colorado. With ultimate irrigation development this area may be increased to more than 2,000,000 acres. Along the lower river the demand for water for irrigation is increasing each year, and if a shortage is to be prevented the low water flow must be increased by means of storage. The Colorado annually discharges into the Gulf of California more than 13,000,000 acre feet of water, which is not only a waste but a serious menace to irrigation interests on the lower river during the annual spring floods. The estimated value of the irrigation development and allied industries below Boulder Canyon is approximately $100,000,000. This property needs protection from the ravaging floods, and the low water flow of the river should be increased to make possible the irrigation of an additional area of more than 1,000,000 acres of barren desert land. It is thus apparent that the matter which is most urgent is the building of storage works to provide protection from floods and the regulation of the flow to conform to the demand for water for irrigation. Fortunately the storage works may serve a third purpose in making possible the development of a large amount of hydroelectric power.

Water Power Development

During recent years there has been a rapid growth in the water power market in the southwestern part of the

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United States. For example, in California alone the available power from hydroelectric and steam plants is about 1,000,000 horsepower. Applications filed with the federal power commission affecting the state of California call for the development of more than 3,800,000 horsepower. It has been estimated that the utilization of these undeveloped power sites will take care of the demands of the state of California until about 1935. There is at present a demand for cheap power in the mining districts of Nevada, Arizona, Utah, New Mexico and southwestern Colorado. In northern Arizona and southern Utah there are many mining projects which cannot be operated successfully until cheap power is made available.

Flood Control

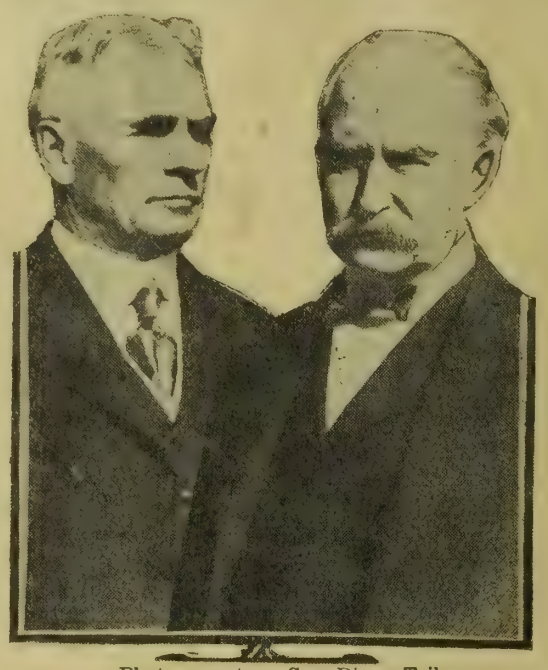
While the matter of flood control and the regulation of the flow to conform to the demand for water for irrigation is most urgent there is also a demand for power. These three important phases of the project should be given serious consideration by those who are entrusted with the responsibility of determining the most feasible plan of development for the lower river. A study should be made of the whole Colorado River basin. Any contemplated development on the lower river should fit in as a part of a comprehensive plan for the development of the water resources of the Colorado basin from Wyoming to the Gulf of California. Such a plan, at least in tentative form, should be available before a decision is reached regarding the development of large storage projects on the Colorado below the mouth of the Green River.

Attention has been called to the amount of water annually wasted into the Gulf of California. I will suggest a plan which if carried out would make possible practically full utilization of the waters of the Colorado from the mouth of Green River to the gulf. Making due allowance for complete development in the upper basin, some such plan as the one given below must be carried out if the enormous waste of water in the lower Colorado is to be prevented.

One of Plans

1. It is suggested that a dam may be built on the Colorado River immediately below the mouth of Green River to raise the water 170 feet, or to an elevation of 4,050 feet above sea level. The storage capacity of such a reservoir would be 3,000,000 acre-feet. If this project were developed in this manner it would not interfere with the proposed irrigation development at Green River, Utah. The town of Moab, Utah, would be submerged, but it would not be difficult to relocate this town at a higher and better site on Mill Creek. This is primarily a power project. However, its development would have an important effect on the flood flow of the lower Colorado. The water power capacity of the project would be about 110,000 horsepower.

2. We may now drop down the Colorado 210 miles. There are a number of dam sites on this section of the river which should receive careful study. The final analysis of the projects in this region, however, may show that the most economical development may be had by building a high storage dam on the Colorado at Lee Ferry. If this plan were followed 210 miles of the Colorado and about 90 miles of the San Juan River would be utilized as a storage reservoir. A topographic survey of this great reservoir site is now being completed by the United States geological survey. The results of these surveys are not yet available. Complete development of the Lee Ferry project calls for a dam to raise the water 700 feet, or to an elevation of 3,820 feet above sea level. The estimated capacity of the reservoir is 50,000,000 acre-feet. The power capacity of the project is 1,000,000 horsepower, with the flood flow of the river reduced to a maximum of 20,000 second feet. About 90 per cent of the flow of the Colorado at Yuma passes the Lee Ferry dam site. The Little Colorado and Virgin rivers join the Colorado below Lee Ferry. These tributaries are subject to occasional floods. There is a reservoir site at Tolchaco in the lower basin of the Little Colorado, where a dam to raise the water 50 feet would control the entire flood flow of this stream, making possible the regulation of the flow to 600 second feet or less.



Photo, courtesy San Diego Tribune.
For the Conservation of the Rio Colorado
At the reader's right, A. B. Fall, secretary of the interior, and recently in California investigating as to the needs of the Southwest. At the left Arthur P. Davis, chief of the reclamation service, department of the interior.

Marble Canyon

3. Between Lee Ferry and the west boundary of the Grand Canyon national park the Colorado falls about 1,300 feet. Surveys have not been made to determine the most feasible plan to develop power on this section of the river. It may be feasible to build a dam in Marble Canyon at a point about 15 miles above Little Colorado River to raise the water about 230 feet. By constructing a 32 mile tunnel this water could be carried to Tapeats Creek and dropped under a head of 950 feet. It would probably be necessary to allow the low water flow to pass through the Grand Canyon national park, leaving about 16,000 second feet available for power purposes. Under these conditions about 1,280,000 horsepower could be developed. The development of this project would be expensive. Many years may pass before it may be necessary to develop this section of the river, at which time the national park service might welcome the construction of dams within the park in order to make the Grand Canyon of the Colorado more accessible. It seems probable that the available water power of the Colorado between Lee Ferry and the west boundary of the Grand Canyon national park may be more economically developed by constructing a series of low dams. This is purely a power project and would have but little effect on the flood flow of the lower Colorado.

Private Parties

4. Private parties are now investigating the feasibility of building a power dam on the Colorado immediately above the mouth of Diamond

Creek. I understand that it is proposed to construct a dam to raise the water about 250 feet. However, maximum development of this site calls for the construction of a dam about 500 feet in height. It may be more economical to develop power on the Colorado between Diamond Creek and the west boundary of the Grand Canyon national park by constructing two dams, each dam to raise the water about 250 feet. The maximum power capacity of this project is about 830,000 horsepower, assuming that the flow of the river is regulated by storage above. Without storage the maximum capacity of the Diamond Creek power project would be about 200,000 horsepower.

5. The United States reclamation service has made investigations to determine the feasibility of building a high storage and power dam at a site in Boulder Canyon a short distance below the mouth of Virgin River. It may prove feasible to build a dam at this point to raise the water 550 feet, creating an available storage capacity of 26,500,000 acre-feet. The plan of development calls for the regulation of the flow to meet the demand for water for irrigation and the regulation of the flood flow to 50,000 second feet or less. About 600,000 horsepower may be developed at the dam. The cost of the storage dam is estimated at about $50,000,000. There are one or two dam sites on the Colorado between Boulder Canyon and Fort Mohave where it may be feasible at some future time to build dams for the purpose of regulating the flow for irrigation and provide for the development of possibly 150,000 horsepower.

Summary

Attention has been called to the urgent need for storage in order that the irrigation interests on the lower river may be afforded protection from floods and that the flow of the river may be regulated to conform to the demand for water for irrigation. The desired regulation of the flood flow for irrigation and flood protection may be had by building a high storage dam at either Boulder Canyon or Lee Ferry. The conditions at Boulder Canyon have been pretty thoroughly investigated. The engineering investigation of the Lee Ferry project has not been completed. The data now available indicate that the Lee Ferry project located above the Grand Canyon with its large storage capacity and favorable conditions at the dam site may be the key to the plan for complete development of the lower river. It would seem that a report on the flood control, irrigation and power problems of the lower Colorado would not be complete if it did not include an engineering report on this project.

It is my opinion that the federal government should at the earliest possible date prepare a report showing a comprehensive plan for the development of the water resources of the entire basin of the Colorado River. Each approved project would then be a unit of the major project. When such a comprehensive report is available and has been approved by the interested states and the Republic of Mexico, some real progress will have been made. Proceeding in this manner a large project on the lower river, being a unit of the major project, could be selected for immediate construction without fear of serious opposition.

INFERTILE PERSIMMONS

There has been an unusual number of complaints during the past season of dropping of Japanese persimmons when but partially grown. On many standard varieties there is a paucity of fertile blossoms, that is, they have pistillate blossoms largely in excess of the staminate or pollen bearing. If the pistillate blossoms (having only a pistil in center of flower and no staminate or pollen bearing organs surrounding pistil) are pollinated by hand a good crop will result. But this is impossible beyond the limit of one pet tree. The remedy in the orchard is to plant an occasional tree that produces an abundance of staminate blossoms over a long blooming period so that bees, wind and other agencies may fertilize the flowers. The best variety for this purpose is the Gailey. Some Japanese varieties are sufficiently self fertile, but even these vary with treatment and climate.

Home Pickling of Ripe and Green Olives

By W. V. Cruess

ON ACCOUNT of the general business depression the sale for ripe olives has been curtailed. For this reason fresh, unpickled ripe olives may now be purchased direct from the grower at very moderate prices. The pickling process is not difficult to follow and very excellent pickled ripe olives may be produced in any home without special equipment. The state university offers the following recipe:

Ripe Olives

Use firm ripe olives of the Mission or the Manzanillo varieties. Place these in a wooden bucket or a glass or stoneware jar or crock. Do not use metal.

Prepare a lye solution containing two ounces of lye to a gallon of water, or approximately one-half pound to five gallons of water. Use a good grade of lye, such as Red Seal or Babbitt's. Thoroughly dissolve the lye in the water before adding the solution to the olives.

Cover the olives with this solution. Stir the olives once an hour and allow the lye to remain on them until it has penetrated the skin of all the olives, but has not entered the flesh of the olives more than one-sixteenth of an inch. The fruit may be cut with a knife from time to time to note the progress of the action of the lye. The flesh will be discolored, that is, turned yellowish brown, by the action of the lye. It ordinarily requires about four hours for this action to proceed far enough.

Remove the lye solution but do not discard it. Expose the olives to the air in the vessel in which they have been treated, stir them three times a day and leave until jet black in color, usually about four days.

Return lye solution to the olives and allow it to stand until it reaches the pit of the olives. This will usually be about eighteen hours. If it is found that the lye does not reach the pits of the olives it should be drained off and to each gallon of the liquid one-half ounce of fresh lye should be added, or about one-fourth pound to five gallons.

When the lye has reached the pits of the olives remove it and discard it. Cover the olives with fresh water which should be changed three times a day until the olives are free from any taste of lye, usually a week.

Prepare a brine of one-quarter pound of salt to a gallon of water, allow the olives to stand in this about three days. They are then ready for use or for sterilizing.

Place the olives in jars or cans and add boiling hot to them the brine in which they have been standing. If cans are used seal them at once; if jars are used place on them the scalded caps and the best rubbers obtainable, such as the Cold Pack rubber or the Good Luck rubber—cheap rubbers cannot be used. Screw the caps on the jars loosely. Place the jars or cans in a pressure cooker and heat to ten pounds pressure for forty minutes. Turn out the fire and allow the retort to drop to zero pounds pressure. Remove the jars while still hot and seal at once.

If a pressure cooker is not available sterilize the olives in the jars or cans in a wash boiler for two hours at the boiling point and then seal them. In this latter case, however, it is necessary to boil the olives for twenty minutes after the jar or can is opened for serving. Olives sterilized in boiling water cannot be offered for sale.

Green Olives

Use olives that have reached full size but are still hard and green.

Prepare a lye solution of one and one-half ounces per gallon of water or approximately one pound of lye to ten gallons. Use granulated lye such as Red Seal or Babbitt's.

Place the olives in this solution and allow to stand until the lye reaches within a very short distance of the pit. Stir the olives frequently during this treatment.

Remove the lye solution and cover the olives with fresh water. Change the water daily until the taste of lye is removed and until most of the bitterness has been washed out of the olives. This will require about seven days.

Place the olives in a barrel or in ordinary fruit jars and cover with a brine consisting of half a pound of salt to a gallon of water. Fill the barrel or fruit jar full and seal.

Set aside until the proper flavor has developed, usually about five or six months.

Fermentation is improved if to the brine is added a small amount of good vinegar; about half a pint per gallon of brine.

SAN LUIS HAS FARM BUREAU

San Luis Obispo County has at last formed a county farm bureau, and the supervisors have appropriated the money necessary for a county agent who will probably start his duties the first of the year. The officers of the county farm bureau are: E. R. Lewis, Edna, president; Alex. McMillan, Shandon, vice president; A. R. Sprague, Atascadero, secretary-treasurer.

Farm centers are now organized at Edna, Cholame, Shandon, Los Plitas, Park Hill, Union, Arroyo Grande, Atascadero and Templeton. Other districts are being organized, using school districts as units.—Warren C. Day.

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2,000	48	8	1½	5	11	975	52.50
2,500	60	8	4	6	11	1,145	60.75
3,000	71	9	1½	6	11	1,270	69.00
3,000	71	8	5	7	11	1,290	69.00
4,000	95	9	10½	7	11	1.555	87.00
4,000	95	9	2½	8	11	1,580	87.00
5,000	119	10	11	7	11	1,745	98.25
5,000	119	10	3½	8	11	1,790	98.25
6,000	143	11	4	8	11	2,010	111.00
7,000	166	12	1½	8	11	2,160	118.50
8,000	190	12	8	9	11	2,375	130.50
10,000	238	13	7½	9	11	2,770	150.00

Made from 3-Inch Clear Air-dried Redwood

Capacity Gals.	Capacity Bbls. 42 Gals.	Outside Dimensions Diameter ft.	Diameter in.	Height ft.	Height in.	Shipping Wt. Lbs.	Price
10,000	238	13	10½	9	11	4,660	$ 225.00
12,000	285	13	10½	11	11	5,370	258.75
15,000	357	15	6	11	11	6,080	303.75
20,000	476	17	10	11	11	7,280	352.50
25,000	593	18	4	13	11	8,510	412.50
30,000	714	20	2½	13	11	9,800	465.00
40,000	952	23	0	13	11	11,300	557.25
50,000	1190	24	0	15	11	13,400	675.00
60,000	1428	26	8	15	11	15,100	742.50
70,000	1666	28	4	15	11	16,700	843.75
80,000	1904	30	3	15	11	18,000	922.50
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100,000	2380	30	0	19	11	21,100	1102.50

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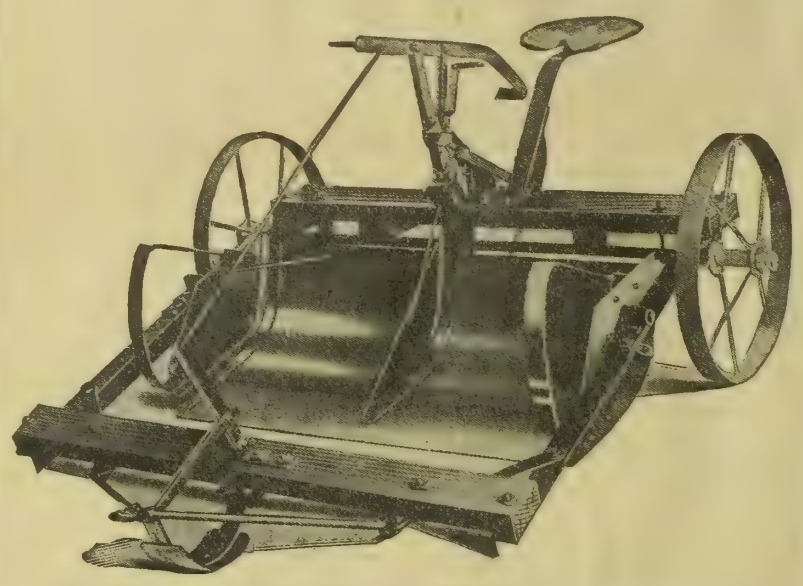

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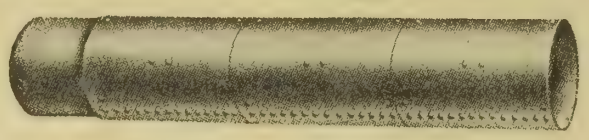

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Vineyard Fertilizing

By Fred K. Howard

WITH the prospect of lower prices for all varieties of grapes in the near future, vineyardists are giving more attention to the problem of fertilization at the present time than has ever been given this very important matter in the past.

Intelligent fertilization programs will undoubtedly be planned and applied to large acreages in the vineyard districts, beginning with this season. Attention to this work is not coming too soon since growers have consistently taken off large crops of fruit annually and have, except in rare cases, put little or no plant food back into the soil.

Continued irrigation, particularly in the lighter soils, has had much to do with the rapidly decreasing humus content of soils in irrigated districts, and growers are now finding that they must use larger quantities of irrigation water to properly mature their grapes than ever before. This condition is due largely to deficient humus or organic matter, and the only remedy which can be relied upon to correct the trouble is, not more water, but organic fertilizers. With incorporation in the soil of such fertilizers the vineyardists may expect a corresponding decrease in the amount of water required and a very marked improvement in the quality and quantity of their product.

Another factor which has had much to do with the decreasing organic content is the continued turning over and too much deep cultivation of the lighter soils during the hot weather. Many soils due to this mistaken cultural practice are now in such shape that the application of irrigation water does little more than wet the soil to a depth of a few feet, which rapidly leaches away or evaporates. Consequently the vines get very little value from the soil moisture in the way of soluble plant foods because that water is not held long enough around the soil particles to get much of the available plant food in solution.

Undoubtedly the answer to this problem is the application of organic manures of some kind. Chief among these is perhaps stable manure, but with the rapidly increasing demands for this material in the vineyard sections the supply will probably not be sufficient to meet the needs, therefore every effort should be made by dairies producing this material to conserve it in such a manner that it retains its full fertilizing value. Dairy and stock men should therefore seriously consider maintaining compost piles and realize that part of their income can be acquired through the sale of manure.

Cover crops or, properly, green manure crops, are a source of organic manure which is becoming more and more popular each year. The problem of growing cover crops, however, in the vineyard districts is one which requires considerable thought and attention to detail, since in many of the older vineyards the leveling was not properly done before planting and it is difficult or sometimes impossible to irrigate in such a way that any quantity of the seed of these cover crops will germinate. Where irrigation is impossible the grower must depend on the rainfall and this, unfortunately, is an uncertain quantity. Green manure crops have been found to be very difficult to start in soils which are extremely deficient in organic matter. Very often attempts to secure such crops are complete failures the first season, but if persisted in, the second season satisfactory results are usually obtained. In this connection it is interesting to know that planting of some winter growing cereal along with the legume seed often gets results which are satisfactory from every standpoint. One of the best cereals to use for this purpose is rye. While this plant is not a nitrogen gatherer it does furnish large quantities of organic material and thus improves the physical condition of the soil so markedly that better results may be obtained with legumes. Commercial fertilizers may be used in vineyards to good advantage, particularly when the grower is attempting to start a green manure crop. These materials are usually in quite quickly available form, and in worn out soils a liberal application may mean the difference between success and failure in producing a profitable tonnage of green manure and also help to produce quantity and quality grapes during the succeeding year. In fact, anything that offers reasonable returns on the investment in the way of fertilizers should not be overlooked at this time by the vineyardist. His only question should be whether or not he is getting these materials at the best possible price.

Seedling Avocados

By Ernest Braunton

IT IS folly for one expecting to grow avocados for market to plant seedlings, no matter what the seeds are, even though taken from the best named varieties. Experimenters having plenty of soil area are planting the best of these varieties but are labeling all trees to see what results are obtained, how much like the parent the resultant fruits are, etc.

William Hertrich now has a bearing tree from a select fruit of the Murrietta, an excellent named variety. The fruit on the seedling is a small Mexican thin-skin. W. A. Spinks has this year fruited the first seedling from the Spinks, a tree of unusual vigor and of large size for its age. The fruit is a rather small thin skinned Mexican, nearly globose in shape. About 99 out of every 100 choice seeds planted bring but disappointment.

But the size and quality of the fruit is only a small part of the troubles that beset the planter of seedlings. A recent visit to the largest seedling orchard known in California revealed the fact that but 29 out of 100 have fruited at 12 years of age. Some may never fruit, a few more may each year, even to a quarter century old. Such lack of crop would prove a death blow to any fruit industry. In addition to this, not one of the trees has produced fruit as good as any of the best 25 varieties now in the market, and all are greatly inferior to the official list of five.

This seedling orchard contains trees of every possible form, from lofty, slender columns to low, spreading shrubs. The foliage also varies much in form and size and somewhat in color. The fruits are still more variable and nearly all poor in appearance and quality. Some are long, slender, crooked in form much like small "crookneck" squashes, others pear shaped, oval or round. On the whole results are a great disappointment to the planter. The seeds were saved from the tables of a leading Los Angeles hotel and were from many sources, including the best California grown varieties. The intending planter had best stick to the preferred list. Some who know claim the Dorothea superior to the Pueblo and there are several good varieties not in the list that are proving sufficiently promising to warrant planting. The variety committee of the avocado association is watching these closely and will no doubt each year report on a few of the best.

In the opinion of all best qualified to judge, when varieties better than those we have are found they will come from the seedling orchards now growing from seeds of the best varieties we have or from seeds of fine types sent here from Guatemala. Not much is now expected from budwood imported, for of the last 20 named varieties sent from the Central American field by government explorers not one that has fruited locally proves better than the five named varieties most popular with planters.

Legal Queries

Louis B. Stanton, attorney, 343 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 317 Central Ave., Los Angeles.

Pipe Line

Eight years ago the owner of land granted to me a right of way for a pipe line. The land has since been taken over by a mortgagee. Can the right of way be revoked by the new owner? If the earth above the line becomes shallow through cultivation so that tools injure the pipe, who is responsible for mending it? Must I bear the cost of taking the pipe up and relaying it? Would the fact that I have given the right to a side pipe line to the grantor's own property in any way change my rights?—Subscriber, Orange.

If the right of way was given by a grant prior to the date of the mortgage and that grant was recorded prior to the date of the mortgage, it would take precedence over the mortgage; that is to say, the owner of the land could not give a valid mortgage which would in any way convey this right of way any more than he could give a mortgage for any other land which he had already conveyed, nor can subsequent transactions in respect to the grantor's land whether by mortgage, deed, or otherwise in any wise affect the right of way given. But if the grant was made subsequent to the mortgage or recorded subsequent to the mortgage, then the mortgagee would in no wise be bound thereby and would be entitled to require you to take up your pipe line. In cases where a right of way for a pipe line has been given, the owner of the pipe line is entitled to have this right of way observed by the owner of the adjacent land and in case of any injury thereto, the land owner would be required to repair such injury, if it occurred particularly in the manner mentioned in the question. The pipe line owner is entitled to have his pipe line remain in exactly the position in which it was placed and he has the right of ingress and egress thereto in order to make incidental repairs, which repairs, of course, would be at his own cost. He is not entitled to change the way, so that it will be different from that which was granted.

Collecting

A resident of adjoining state has sold personal property to a party located here, upon an installment contract. The owner of this property owes me and I desire to know if there is any method of collecting the moneys arising from this installment contract.—Subscriber, Coachella.

An action may be commenced in your township or county court, as the amount of the demand requires, and attachment or garnishment levied upon the property owned or person purchasing it. Publication of summons may then be made on the defendant residing in an adjoining state and if he fails to appear, default may be entered and his interest in the personal property and the amounts accruing thereon acquired and the execution issued upon this judgment. It is necessary in this class of cases that an attachment be made.

Make a Will

I have two daughters and a son. How can I leave nearly all of my property to my son?—Subscriber, Van Nuys.

This may be done by will properly executed.

Bankruptcy Proceedings

How does one proceed to take bankruptcy? We own nothing but household goods. — Subscriber, Carpinteria.

A petition is filed setting forth the fact that a person is insolvent and desires to be declared bankrupt, to which is annexed a schedule of debts owed and assets which the party may have. This is filed in the federal district court. As the form of such petition and schedules is very particularly set forth in the federal bankruptcy act it would be probably necessary for you to consult an attorney. Your household goods and also wages would be exempt from the payment of the debts.

Probate Estate

My mother recently died in Kansas, leaving real property in her name. There are no debts or other heirs. Another farm had been sold upon contract, in which contract my father, who is still living, has an interest. What steps are necessary to take to convey this interest and settle the estate?—Subscriber, Bakersfield.

It would be necessary to have the estate probated and the court declare that there are no debts or heirs other than yourself. In such probate the court would authorize the administrator to collect the moneys due upon the farm sold under contract and give a deed therefor.

Tax Title

Have been paying taxes on abandoned lands. How long is it necessary to pay such taxes before securing title? How does one get such title?—Subscriber, Kingsbury.

It is necessary to do a great deal more than pay taxes on lands in order to obtain title. The only right for such purposes is to found a claim for adverse possession. As no claim is here made under written instrument it is necessary for the party desiring to obtain such lands to protect them by substantial enclosure and to cultivate or improve them in the usual manner for a period of at least five years, and during all of such period he must continuously pay all taxes, state, county, or municipal, which are levied or assessed upon such land. After that period an action may be commenced in the superior court of the county wherein the land is located, joining as defendants all parties who may appear to have ever had any interest in this land, setting forth the facts constituting the facts of adverse possession, and this action must then be prosecuted to a judgment. The judgment is then the title on which the claimant under adverse possession must rely, if he can obtain it.

Pasture Land Unfenced

Four adjoining sections of mountain land are surrounded by one fence, but there is no cross fencing. One party owns 640 acres; another 950 acres. The owner of the section pastured some 400 head of cattle, who, wandering from their own land, have denuded the pasture of the other party's land and have thus prevented him from using any part of his land for pasture. Has he any claim for damage?—Subscriber, Visalia.

As the owner of the larger portions

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of land did not have his land under fence, it does not appear that he has any right as against the straying herds from the 640 acre owner. He might have had the right to take up these straying cattle and empound them if he had found them on his land, but as he did not do this and damage is done, it appears that he has no claim.

Soldiers' Homestead

I am an ex-soldier with 22 months of service and desire to take up a homestead. How long will I be required to stay on the homestead and how much improvements will I be required to make?—Subscriber, Cottonwood.

The time which the homestead settler has served in the army, navy, or marine corps shall be deducted from the time required to effect title. In case of any discharge on account of wounds received or disability incurred in the line of duty, then the time of enlistment shall be deducted from the time required to effect title without reference to the length of time he may have served. He must reside upon the land, improve and cultivate it for a period of at least one year after he shall have commenced his improvements. The usual period of residence upon homestead lands is five years from the date of entry. At the expiration of that time or within two years thereafter, the entryman must prove that he has resided on and cultivated the land for five years. It seems that there is no exemption from the cultivation requirements for ex-soldiers other than the lessening of the time.

Riparian Rights

What are riparian rights?—Subscriber, Herndon.

Several very large dry books have been written upon the rights of riparian owners of land. In short, a riparian owner is entitled to have the water in a stream come to him unpolluted in quality and undiminished in quantity and subject to the right of upper owners to such use as they are entitled to make of the water. A riparian owner is entitled to use water as it passes his land for domestic purposes and take out a reasonable portion for irrigation of his abutting land.

Distributing Irrigation Water

Our land has been in an irrigation district for a number of years and has had no water as the main laterals are three miles away. The directors say that it will be necessary for us to put in these laterals at our own expense, although they have put in other laterals at the cost of the districts. Can we compel the districts to bring water to our land?—Subscriber, Crows Landing.

A question involving as much as this does necessarily would require a much more careful investigation than it is possible to give in a medium of this character. An inspection of the act would seem to indicate that it in itself contains certain remedies. The irrigation act was made in order that a convenient method could be adopted for the irrigation of any given territory embraced therein. Section 18 of the act expressly provides that all waters distributed for irrigation purposes shall be apportioned ratably to each land owner upon the basis or ratio which the last assessment of said owner for district purposes within the district bears to the whole sum assessed upon the district. Under the powers of the directors it is stated that the board of directors may construct necessary works for the collection of water and do any and every lawful act necessary to be done that sufficient water may be supplied to each land owner in said district for irrigation and domestic purposes. At another point the act provides that in case the money raised from bonds is insufficient for the completion of the plan of the works it shall be the duty of the board of directors to provide for the completion of the plan by levy of assessments therefor. Then there is a provision that the boundaries of any irrigation district may be changed and tracts excluded therefrom by the filing of a petition with the board of directors of the district, stating the reason upon which it is claimed that the land shall be excluded. There is an elaborate provision for the procedure thereafter, which it is unnecessary to state. It would seem, therefore, that an action would lie to compel the irrigation trustees to carry out the duties which are imposed upon them; that is to say, providing for the distribution of water over the whole district.

Upkeep of Mortgaged Property

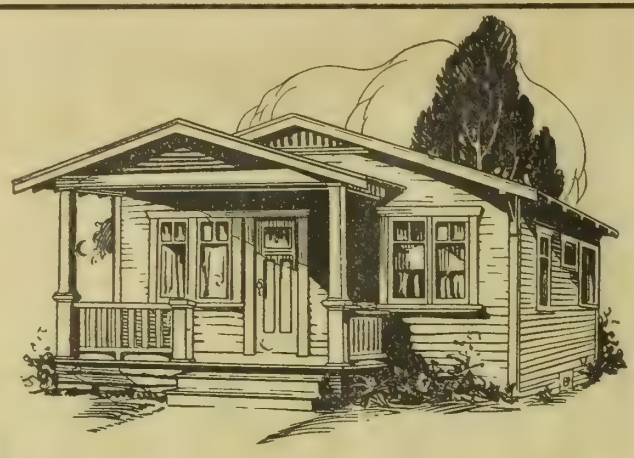
I hold a mortgage on a piece of property, the owner of which has left the country. In case I supply moneys for the upkeep of the livestock and trees upon the place, would I be able to recover this money on foreclosure of the mortgage?—Subscriber, Tecnor.

The usual mortgage provides that moneys expended for such purposes constitute a lien and may be recovered on foreclosure proceedings.

Verbal Contract

I am raising chickens for broilers. A party desired to select good pullets, stating that he would be willing to pay a little above the market price. He now desires to purchase them only at the market price. I refused to sell them. The amount of contract is something over $500 and is merely verbal. What are the rights of the parties?—Subscriber, San Gabriel.

An agreement for sale of goods, chattels or other personal property at a price not less than $200 is invalid unless the contract or some note or memorandum thereof is in writing and subscribed by the party to be charged or by his agent or unless the buyer accepts or receives part of the goods or chattels or the evidences or some of them, or other personal property, or pays at the time some part of the purchase money.



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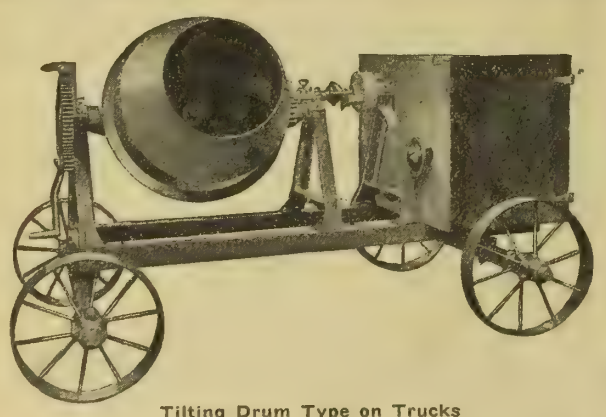

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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Apple Seedlings

If I plant apple seeds in greenhouse now about how large will plants be by May? Where can I get Mammoth red raspberry plants?—Subscriber, Fresno.

The size of the apple seedlings will depend much on treatment, temperature, etc., but will grow only a few inches at best. Greenhouse conditions do not seem very favorable to apple trees, and so soon as weather is warm in spring would move them out into full sunlight, whitewashing the bare stems to prevent sunburn of tender bark. We do not know of a red raspberry by the name of Mammoth; the St. Regis is the largest red raspberry we have seen, though some selected Cuthberts bear equally large fruits.

Pruning Quince and Persimmon

Would like information regarding pruning of quince and persimmon trees. Does the long pruning system of pruning (Dr. Whitten's) apply or the old stub system?—Subscriber, San Diego.

The long pruning applies to all trees as it consists largely of thinning to allow light to enter and give all parts of the tree the same chance to bear fruit. It may therefore properly be called natural pruning or what the tree should itself do if left alone and even what some do when in an uncultivated or wild state. We would not "stub" or short prune either of the trees named. Prune both to leave outward and upward branches of drooping tendency.

Manure in Furrows

I am interested in article by A. D. Shamel in your issue of September 17, on application of stable manure in furrows. I want to try an experiment in my small orchard at home place to see how it works out, but there are some points that are not quite clear to me, and I would like to have some further light on the subject. Now you say to use five cubic feet of manure to the tree. I can not see how you can get five cubic feet of manure in a furrow only eight inches deep, and you do not say how wide the furrow should be, whether a foot, or 16 inches, or how wide. Another thing, if manure is put in an eight inch deep furrow you would plow nearly all of it up when you commence to plow in February. Before I commence on it I would also like to know if the plan I had in mind would be in any way harmful. It is as follows: Dig a ditch along the drip of the tree, the way I irrigate, about 18 inches deep, and fill the ditch with manure to within six inches of top and then cover with soil. Ditch would be 18 inches wide also.—Subscriber, San Fernando.

Mr. Shamel answers: The five cubic feet of stable manure or its equivalent in other organic matter is distributed on both sides of each tree in the furrows. Furrows best adapted for this purpose are made with a middle buster type of plow which throws out the soil so as to leave a wide and clean furrow. These furrows, made by several makes of plows especially adapted for this purpose, are often from six to

eight inches in width near the bottom and from 10 to 14 inches across near the top. In such furrows it is easily possible to distribute two and one-half cubic feet of stable manure on each side of the tree or five cubic feet for each tree. Some growers report that they have used from 10 to 15 cubic feet of manure per tree in such furrows. If manure is distributed in the fall or winter it decomposes to such an extent that by the time of spring plowing little or none is likely to be pulled out. Of course, if the manure is distributed in the furrows shortly before plowing or cultivating, some of it is likely to be turned or pulled out when the land is plowed or cultivated. In this case the furrows should be deeper than ordinary in order to avoid disturbing the buried manure. As the buried manure decomposes, as it does rather rapidly under favorable conditions in our orchards, the danger of disturbing it by cultivation is soon removed. An examination of the manure in the furrows several weeks after its distribution where it has been kept moist usually reveals only the dark decomposed matter as a thin line near the bottom of the furrows. I think that the cost of digging 18 inch furrows or trenches would be almost prohibitive under most conditions. Furthermore, my experience has been that this depth is not as efficient as a more shallow one. It would be desirable perhaps to try it as an experiment, particularly if it was compared with a shallower furrow. Eight or ten inches under ordinary conditions breaks through or breaks up the plow sole, if present, and when the manure decomuoses it is usually out of danger of being seriously disturbed by subsequent cultivations. I am also of the opinion that reasonable and rather frequent applications of manure are likely to be preferable to very large amounts used at infrequent intervals.

Protecting Citrus Trees

Please tell me the best methods of protecting citrus trees against the cold. I am wrapping or rather covering them with sorghum stalks on the south and east sides and leaving the northwest open and have been told that if we keep the sun from shining on them the next day that even 10 or 12 degrees below freezing will not injure them. How many degrees of freezing will a young citrus tree stand if kept shielded from the rays of the sun the next day?—Subscriber, Brownsville, Texas.

The degree of cold which citrus trees will stand depends upon the weather, condition, variety and age of the trees. The first factor with this we take it would be the variety. From what we have been told we believe the Texas planting of citrus trees is usually of the Satsuma orange. This of course will stand far lower temperatures than the Navel or Valencia. Neither of these varieties would tolerate the temperature mentioned for any length of time. The protection suggested by the inquirer is perhaps the best that can be secured unless one can provide regular orchard heating equipment. We would suggest to our Texas citrus grower that he write the Texas Agricultural Experiment Station, Beeville Substation, Beeville, Texas, and ask for Bulletin No. 148, "Report on Experiments with Citrus Fruits at the Beeville Substation," by A. T. Potts.

Castor Beans

I would like to find out all about castor beans, how they produce in rich silt land and how they are grown and harvested.—Subscriber, Linden.

Castor beans do best in the rich silt land though they will tolerate and thrive in coarser, gravelly soil. In fact soil is not so much a consideration in the castor bean industry as markets. Under stress of war demands Californians grew a limited quantity of beans in 1917 and 1918. The return was far from satisfactory and presumably castor bean culture will never be general in this state.

Weed Pests

My neighbors, by carelessness and lack of cultivating, raise plenty of tumble weeds, also sand berries, all over their fields. Whenever the northwest wind comes up it brings all that mass into my vineyard. Can I make them clean that up or keep that stuff off of my place?—Subscriber, Wasco.

We think you may secure relief by reporting the matter to your horticultural commissioner at Bakersfield. He has power to enforce the cleaning up of certain weed pests and while tumble weeds may not be included in those pests the commissioner may be able to make suggestion as to proper steps to take in this matter. Of course without question there is cause for damage in this case, but to prove the amount of damage is sometimes difficult.

CONCRETE UNIVERSALLY SATISFACTORY

In the gradual evolution of irrigation from the open ditch to the wooden flume, then to the concrete flume and finally to the underground concrete pipe, it has been the experience of irrigationists that completely successful results are dependent to a large extent upon the concrete pipe being of a proper quality.

The manufacturers who originated the valve system of irrigation, which method first made use of concrete pipe, learned through broad experience over a long period of years the importance of this principle; and, with a view to insuring a proper quality of concrete pipe and thus protecting the ranchers in the installation of an irrigation system which will prove permanent, manufacture also a concrete mixer, which is reported to be absolutely efficient and dependable in every way.

One type of these mixers is specially designed for mixing concrete for use in pipe manufacture, another for use in general building construction, and a third for a combination of the two types. This combination mixer is designed for use on jobs where small amounts of concrete or plaster are to be thoroughly mixed and is particularly adapted to use on ranches.

For building of foundations, irrigation systems, silos and even entire buildings concrete has come to be almost universally accepted as an entirely satisfactory material in California. In this state where weather conditions are not extreme there is little trouble caused by frost or moisture.

Extensive tests have been made to determine the percentage of loss of water through seepage and pressure in concrete pipe, and it has been shown that where the formula is right and concrete carefully mixed there is comparatively little loss. Concrete silos have proven successful, and they are in use in certain sections of the state in considerable numbers.

For housing help some of the fruit exchanges have built considerable numbers of all concrete dwellings of small sizes and have found them economical to build, sanitary and durable. On every farm there is almost daily use for concrete for lining irrigation ditches and many other forms of construction.

Inexpensive machinery is available for making concrete blocks, bricks, pipe, etc., and very efficient concrete mixers are built sufficiently small to be practical for the average farm.

One feature which should be given careful consideration, however, is the mechanical construction of the mixer. Be sure that it is properly balanced and that it has ample bearing surface on the shaft in order that it can be operated with a minimum of power. It is advisable to have a concrete mixer built so that moving parts are easily changed for new ones when wear makes changes necessary. A great deal of the success in the use of concrete depends on the efficiency of the mixer. Use a good formula and mix thoroughly and the results will prove satisfactory and lasting as well as economical.

When every man's home is the sweetest place
On earth for a man to be;
When every man's wife is the sweetest wife
In all the world to see;
When every man's child is the dearest child
That ever drew breath—ah, then,
We shall have better children and women and homes
And a darned sight better men!
—Baltimore Sun.

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This is a small, sturdy Mixer designed for mixing small batches of concrete and plaster.

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All steel and iron—no wood.

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3784. Misses' Dress—Cut in three sizes: 16, 18 and 20 years. An 18 year size requires 5⅞ yards of 40 inch material. The width of the skirt at the foot is about two yards. Price 10 cents.

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3400. An "Easy to Make" Apron—Cut in four sizes: Small, medium, large and extra large. A medium size will require 2¾ yards of 27 inch material. Price 10 cents.

3505. Child's Short Clothes Set—Cut in four sizes: 6 months to 1 year, 2, 3 and 4 years. A 1 year size will require 1¾ yards for the Dress, 1⅜ yards for the Petticoat, and ⅝ yard for the Drawers of 36 inch material. Price 10 cents.

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Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cents) stamps for each number. In order to furnish our readers with the very best NEW YORK styles, all patterns ordered are filled in NEW YORK. Do not expect patterns under **Two Weeks** from date of order.

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PATTERN DEPARTMENT

California Cultivator Los Angeles

Household Department

MY HEART IS BUT A LOWLY INN

My heart is but a lowly inn
Like that of old in Betlehem,
Where busy cares come wayfaring,
And vagrant fears their clamor bring,
And traders barter silk or gem.

And craving wants, like cattle dumb,
Wait at their stanchions to be fed,
While service, clad in homely clout,
All the long day speeds in and out
And late and weary creeps to bed.

Yet, Lord, if through the flushing night
I, too, may see Thy moving star,
And feel, as then, the air astir
With breath of frankincense and myrrh
By pilgrim wisdom brought from far;

And if the radiance grow and glow
Through every mean and humble place
Till, touched by that unscathing flame,
In penitence and tender shame
I know the Christ-child's beauteous face,

Then shall the drowsy servitors
Straightway arise and shout and sing,
And all my heart's poor hostelry,
Transformed by love and praise, shall be
A palace for the new-born King!—Mary A. P. Stansbury, in Christian Advocate.

FATHER 'N MOTHERTOWN

(Concluded.)

The next two days did not leap ahead as to a joyous third day but somehow they passed. Sarah had paid the rent of her bargains in advance and her inherited sense of thrift would not let her "waste" the money. To Asher's silent astonishment, she installed the poor useless bargains in the living room. The cookies she set away in a stone crock but the cooky man broke her heart. She did not unmake Aurora's bed because she could not bring herself to go into that little ready room.

Aurora herself was very busy getting ready to take the new and magic train. Aunt Roxanna was a dear! A whole hotel week of sights, sights! The Great White Way on Christmas eve!

She had been obliged to write home hurriedly but she promised herself she would write every day from the city, between sights. She would tell Father and Mother all about everything and send them something New York-y and Christmasy. Father and Mother were dears, too. Everybody was dear. So excited and thrilled was the real Aurora that she did not think to turn upon the other Aurora and demand if she thought she was dear!

At the station at last Aurora found that her magic train was an hour late. A girl about her own age was waiting too. It was no one Aurora knew. The girl was nervous and kept walking about. She walked up to Aurora.

"Oh, could you tell me which track the train to Podunk's Corner goes out on? I don't suppose you know where Podunk's Corner is but it's home. It's where I'm goin'! Mother's goin' to be terrible surprised. An' tickled—goodness! You see I'm in a ten-cent store and this is our busiest time but I fainted dead away so I'm going home. They let me. That was a pretty lucky faint! I needn't tell mother that. I don't suppose you're surprising your mother? I bet she's all cooked up for you! I bet she's a tickled mother too!"

The girl danced away to the other end of the room and studied a huge train list decorating the wall. She moved elastically, joyously; she did not seem in peril of fainting now. Suddenly she cried out in pleased enlightenment:

"I've found it! Here's a place not a great way from Podunk's on the same road. Goodness, of course it is Berrytown! I guess I wouldn't forget Berrytown. When I was little I went there and thought it was Boston or New York. We've got one store at Podunk's."

There were 29 in Berrytown. Aurora reckoned rapidly in her mind. Berrytown was Father 'n' Mothertown. The girl was dancing back now.

"Berrytown's where my father and mother live," Aurora found herself saying to her. "There are 29 stores if you count old granddaddy Jim's cobbler shanty."

"Your town? Honest? Then we'll go together! I get off first, you see," explained the ten-cent girl. "I didn't come here on the railroad or I hope I wouldn't be such a goop's not to know how to go back. I came all the way by trolley because it was cheaper. I saved a whole hat!"

The train that went to Father 'n' Mothertown was whistling down the line. It was ahead of the belated express to New York and Aunt Roxanna and the sights.

"Is that our train? I'm beginning to get excited." As if she had not been all along! "Come on out on the platform ready to jump on. It's a race for mothers, isn't it? An' I'll beat and my mother will be more surprised than yours!"

Wait! What would Mother say if in spite of Aunt Roxanna and the sights—Aurora started as though she had heard Mother saying, "My girl! My girl!" She saw Mother's radiant, surprised face. Little stoopy old fashioned Mother——

"Aren't you coming? Here's our train!" chattered the girl outside, poising an instant in the doorway.

"I'm coming!" Aurora called.

The ending of that journey was to be more unexpected even than its beginning to Aurora Potter. It was to be a journey of adventure, unhappy and undreamed of. For the train to Father 'n' Mothertown ran into a drifting, clogging snowstorm. Hour by hour passed, difficulty of passage increasing. The train was crawling when it reached the little flag station of Podunk.

"Good-bye!" the ten cent girl said. "I wish you was home, too. I'm there! Our house is just a little speck of a way off. See that light? You poor thing—it's stormin' big guns. Good-bye!" She was off.

Suddenly, after a gallant charge ahead into the teeth of the storm and a victory of a few more miles, all progress ceased. Something had given out or the engine had lost its

Let us hold fast the Christmas spirit for 365 days.

courage and its nerve. The trainmen consulted and shook their heads.

"Stuck!" proclaimed the conductor. "Engine called a strike. There's some kind of a big building out there if anybody wants to make a try for it. I'll go with 'em. Or you can snuggle down in the seats here."

Only Aurora wanted to make a "try" for the big building. She would not stay in this stuffy car! Ten minutes later she was getting her breath in a big bare lighted room, a kindly woman trying to assist.

"Some storm, ain't it? Sit right down. I'll get you something hot."

It was good strong ginger tea and as Aurora sipped and smarted and "warmed up" the woman talked steadily on, excited and pleased by her part of the adventure.

"This is the poorhouse. I don't suppose you mind shelterin' in the poorhouse, do you, not in this storm? We're all out of paupers anyway. I've been here 17 years and we never had more'n two or three at a time. I tell 'em I remember every livin' one an' which was tallest an' shortest an' homeliest and han'somest.

"The han'somest pauper looked a lot the way you do, I declare. Just about the same age an' all, the prettiest thing! She was our star pauper——"

Aurora choked a little over the ginger tea.

"I declare, same looks! She warn't here but two or three weeks an' died an' somebody took her little baby. I remember plain how glad I was for it to have a reg'lar home to grow up in, instid of a poorhouse. The poor mother didn't only have time to kiss it an' name it an' die for it. She wouldn't give it any last name and the first one was terribly outlandish. I told 'em she thought she's makin' up to the baby."

The cup was empty and Aurora set it down. For politeness' sake she entered the conversation.

"What was the name?"

"I can't remember. I tell 'em that's the only thing I ever forgot. Specializin' so in paupers."

"Was it a good while ago?" Aurora's question was put to stem the returning tide.

"Seventeen years. I remember the date plain. But the outlandish little

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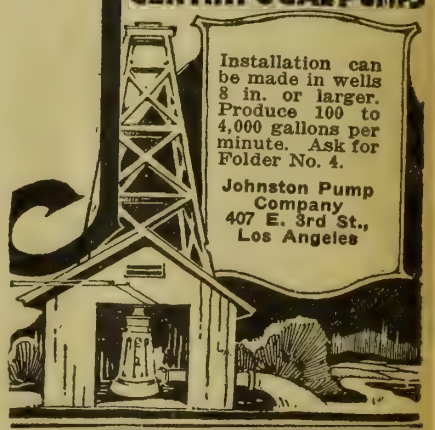

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name — it meant light, I remember that."

"Meant what?"

"Light, brightness — somethin' like that, she said. She was such a foolish little thing I don't believe she knew what it did mean. I don't know's she was all there. But Mis' Potter was goin' to keep the name she said. She said——"

"Tell me—tell me that date," Aurora said thickly. Her blood pounded in her temples. What was this thing she was going to find out? She would shut her ears, she would plow her way back to the stalled train out there!

It was her date.

Mis' Potter was Mrs. Asher Potter of Berrytown. Aurora sank back in the pauper chair and struggled with thoughts. They swarmed up over the bulwarks of her pride. Her secure little city of life was taken.

That was what Mother had done for her. Oh, she was "Mother!"

It was Christmas eve. She wanted to see Mother. She wanted to see Father. She wanted to hang her stocking up! She wanted to put her face in Mother's neck and be glad she had come home instead of going to New York.

Bells jingled outside. A powdered snow man bustled into the room.

"Well, if I don't declare! What do you think you're doin' out o' doors!"

"Give me a boiling hot drink. I've got to go on to Berrytown—very sick patient. A snow shovel too. I'll have to shovel my way through the drifts."

On her feet a starry eyed young creature faced him.

"I'll help shovel. I've got basket ball arms. I've got to go to Berrytown too."

They went together to the sick patient and to Mother. Aurora never forgot the sleighride nor the aching young muscles, for she insisted on doing her turns. She gloried in her basket ball arms. She gloried in the sting of the wind and the snow in her face. She was going home to Mother.

It sang in her heart like a beautiful warm tune in that tempestuous cold.

"My girl! My girl!" She had known Mother would say that and shine like that!

"Asher, she's come! Aurory's come! She's snowed down. Oh, Asher, do you think you could hobble in and set a match to the living room grate while I undo my girl?"

It was Mother who stole in a little later and set the Welcome Home music going. It came tenderly to Aurora.

The girl had made her decision on the way home.

She would not let Mother know she knew; instinctively she realized the comfort it had been to Mother to spare her girl that humble enlightenment. She would spare Mother but she would put her face in Mother's neck.

"Do you hear what it's playing, Aurory? It's playing Welcome Home to Christmas!"

Aurora did it then. Her face was wet in Mother's neck.

The stocking was hung and yet the happy three lingered in the firelit room. Aurora was looking among the records Mother had rented. Suddenly she caught one up and put it in the machine. She turned the handle eagerly. Aurora was used to machines. Presently a sweet and tender song began. It was Aurora's soul singing, too, in accompaniment:

"I love the dear silver that shines in your hair,
And the brow that's all furrowed and wrinkled with care;
I kiss the dear fingers, so toilworn for me,
Oh, God bless you and keep you, Mother Machree!"

CHRISTMAS WISHES

"These are the gifts I would wish you, borne upon swift wings of love;
Courage and Patience and Purpose, steadfast as planets above;
Work for the long hours of waiting, Peace in the interval's rest,
Joy in each morning's awaking, Gladness when gladness is best."

"'Tis the thought of a friend
To the heart of a friend,
And Hope in the thinking.
The prayer of a friend
To the God of a friend,
And Faith and Believing."

Sing the song of great joy that the angels began.
Sing of glory to God and of good will to man.

LEFTOVERS FROM THE CHRISTMAS TURKEY

Turkey Soup

Take bones and scraps left from roast turkey. Scrape meat from the bones and lay aside any nice pieces no matter how small. Remove all stuffing and keep it separate. Break bones and pack closely in kettle. Cover with cold water. Add 1 small onion, sliced, 1 teaspoon salt and a little pepper. Simmer two or three hours until the bones are clean. Strain and remove the fat. Put liquor on to boil again and add for every quart of liquor 1 cup cold meat cut fine, and half a cup of stuffing. If the stuffing is omitted thicken the soup with flour. Simmer until meat is tender and serve at once. This is better than boiling meat, bones and stuffing together. The stuffing absorbs the oil and gives the soup a strong flavor.

Scalloped Turkey

Make one cup sauce, using 2 tablespoons butter, 2 tablespoons flour, ¼ teaspoon salt, few grains pepper and 1 cup stock. Cut meat into small pieces. Sprinkle bottom of buttered baking dish with seasoned cracker crumbs

> It's a beautiful season if we make it so.

and turkey meat, pour over sauce and sprinkle with buttered cracker crumbs. Bake in hot oven until crumbs are brown. For this amount of sauce about a cup and one-half of the meat should be used.

Minced Turkey

To one cup cold roast turkey meat cut into small pieces use 1-3 cup soft stale bread crumbs. Make one cup sauce as by above recipe. Season with salt, pepper and onion juice. Heat turkey and bread crumbs in sauce. Serve on small pieces of toast and garnish with poached eggs.

A HOLIDAY PARTY

An indoor nutting party may be arranged by decorating a small tree with bags of nuts of all kinds. If you can't get a real tree, use a tall clothes tree, to which branches or leaves are wired. This tree may be as Christmasy as you wish. There should be a candle on top, and a few sprigs of holly among the branches.

The bags that hold the nuts are of all sizes and fabrics. The guests at a signal are told to strip the tree and the person who secures the greatest number of nuts is promised a reward. The joke is that the larger bags do not contain the greatest number of nuts, for some of the bags hold lone coconuts or doughnuts. Some very small bags hold quite a number of peanuts. The nuts are all counted before the prize is awarded.

SOME SIMPLE SOUPS

By Mrs. Robt. L. Davis, Reedley

A favorite soup in my household is a vegetable beef soup which admits of many variations. The foundation is as follows:

Vegetable Soup

Get a joint and part of the shank with a marrow bone. Put on to boil in cold water in a deep vessel. Watch closely when it boils and skim well.

Prepare vegetables and put in as soon as the skimming is finished, and cook all together for several hours—on back of stove is best.

Be sure to use onions, tomatoes and potatoes. Turnips, cabbage and celery, if desired, add much to the flavor; also green peppers, corn, celery root and chopped parsley. Just before taking up, chopped green onions are good. When ready to serve the soup may be thickened if desired. The bones should be taken out when the meat has slipped off. Add salt to taste when meat is cooked. The broth may be strained and served as clear soup, the thick part put through a sieve and served as puree or poured over cooked macaroni or spaghetti, the meat taken out, chopped and added to this dish. If desired the tureen may be rubbed with a slice of garlic. This soup is conveniently made on baking day as it requires no attention after vegetables are put in and salt to taste is added.

Asparagus Soup

Asparagus should be put on to cook in boiling salted water for five minutes, then this water poured off and more water added. When cooked till tender take out asparagus and prepare for serving as desired.

To the broth add a cup of soup stock and you will have a deliciously flavored clear soup. Or add a cup of new milk or thin cream, thicken with flour and water thickening, add a tablespoon butter and you have a fine asparagus cream soup suitable for any dinner.

Tomato Soup

Put a cup of canned tomatoes through a strainer and add two cups soup stock. Season with salt and pepper. Chop very fine small green onions, parsley leaves and a few tender celery stalks; put into tureen or soup plates, pour hot soup over and serve at once.

THE SINK EFFICIENT

This is the very suggestive title of an article by Mildred Maddocks in November "Good Housekeeping." It will have particular appeal to the woman of medium and over-medium height, for the old fashioned sink seemed almost universally to have been built for little people.

"The selection of a kitchen sink does not so much concern the question of materials as it does the design of the sink itself. It should of course be selected of one of the sanitary materials. But above all it should be of a double drainboard design. This not only proves more convenient in washing dishes but actually saves breakage. In the single drainboard sink there is a tendency to pack soiled dishes in the sink around the dishpan and it is here that the nicking and breaking occur. If the soiled dishes could be packed neatly at the right of the worker and washed toward the left, or vice versa, depending upon the direction of the dining room door, there would be no tendency to crowd the dishes in the sink, and breakage would be actually reduced.

"No other expenditure would repay you quite so much as the installing of your kitchen sink at the proper height for most convenient work. This height can vary only to a limited extent. A sink set 35 inches from the floor to the bottom of the sink is convenient for workers ranging from five feet to five feet six. We consider, therefore, that 34 inches is as low as a sink can be set and still enable the worker to stand straight with no strain on the muscles of the back, only the shoulder or upper arm muscles being involved in work done at the sink.

"Therefore, even if the sink which you have is satisfactory as to material and design, yet is too low in height, an expenditure required for raising it will be amply compensated. If you measure only a total of two hours a day at the sink, still the tired back muscles will react during the entire day. Its cost is the plumber's time plus the cost of the increased plumbing, and it is an outlay that can fairly be reckoned as an investment to any owner of a home. It is an outlay that is warranted even in a rented home, through the individual return in comfort to the tenant. It is possible to secure on the market sinks that can be set with leg supports at the proper height, but if you should have one without length enough in the leg support, supplement it with plain metal piping. This can be painted and enameled so that it can hardly be distinguished from the sink design."

The message of Christmas morning is as universal as it is personal and present. It is addressed to each man; it is addressed to all men. It is destined to shape the private conduct and to impress and mould the life of society. Divine in its content, it has an earthly relation and significance; whilst holding out a promise of the greater things which shall be revealed in us hereafter, it is not without action in time and influence upon the world around us.—Cardinal Gibbons.

There is nothing that people will thank us more for at Christmas time than a little pains taken to understand them.

E. C. SIMMONS KEEN KUTTER CUTLERY TOOLS

You can be sure of tool quality —if

If you ask for KEEN KUTTER tools and make sure that they bear the KEEN KUTTER trade-mark you will always be sure of getting highest quality.

KEEN KUTTER tools and cutlery are made to give permanent satisfaction to every user.

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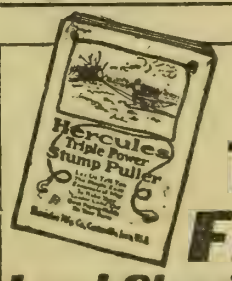

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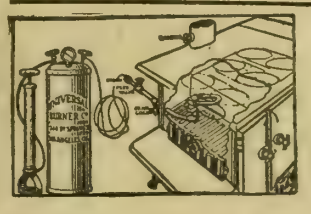

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The California Plan of Livestock Auctions

By R. P. Royce

IT WILL be recalled that in former articles dealing with the matter of public sales of livestock one of the abuses mentioned as having caused considerable grief in Eastern states was the domination of breeders by a certain class of auctioneers, field men and agricultural journals. This domination operated to the end that breeders were sandbagged into spending money for advertising and other sale expenses out of all proportion to the volume of business transacted.

Hundreds of instances might be cited to substantiate the above claim. As a matter of fact during the "boom times" of recent years the game of bleeding the breeders grew to such proportions that more than one of the leading Eastern agricultural journals voiced a protest over the activities of their less scrupulous contemporaries.

One of the ideas back of the formation of the California Breeders Sales and Pedigree Company was to head off any such practices in this state, and for the most part the plan received the support of the principal publishers who were anxious to see the livestock business developed along sound and practical lines and who, fortunately, did not look to the business solely as a new field in which to develop advertising accounts. From the first the California Cultivator organization regarded the California plan as essentially sound and has never seen any reason for withholding support. The journal has solicited sale advertising on the same basis as other business. We believe that all California agricultural journals and papers save one have followed the same policy. That particular journal has, almost from the beginning, sought to disrupt the organization. During all their activity, notwithstanding the fact that from time to time information came to hand that representatives of the paper in question were continually shying bricks our way, no protest has been made for the simple reason that such attacks were in no way hurting our standing with the livestock fraternity, which in general was aware of the motive; but since this journal has veered its attack to the California Holstein Association; has editorially charged that the public sale business of California is a "well stacked game" and that the California Cultivator is the apologist for and promoter of such a game, and that we enjoy a "special privilege," we can be pardoned for setting forth the facts—not for the benefit of the established breeders, for such men are already informed, but for the information of men just entering or considering engaging in the purebred livestock business.

At the time the California Breeders Sales and Pedigree Company was organized by a group of breeders, C. L. Hughes, then publisher of the Livestock and Dairy Journal, was importuned to accept the management of the new organization. In order to accept the position he found it necessary to dispose of his publication and it was offered to the publisher who has since been most active in attempting to discredit the California plan. The offer was flatly refused. Subsequently the publisher of the California Cultivator purchased the Livestock and Dairy Journal. The purchase was nothing more than a business deal and carried with it nothing but the name, subscription list and good will.

At the time of consolidation this publisher referred to paid his respects in the following neighborly fashion: "The Livestock Journal, recently of Sacramento, fell into the cutter and has been conminuted and blown into the silo of one of our southern contemporaries, where it will ferment into oblivion, along with other journalistic stover which had previously taken the same course."

Since that time the aforementioned publisher has waged a lone fight on the efforts of California breeders to set up and operate a selling organization. In view of the fact that that paper has constituted the only opposition encountered it may be pertinent to inquire as to its motives.

It would seem that the only reason justifying criticism would be based on the failure of such a selling plan to render protection to the buyer or satisfactory service to the seller.

It has been demonstrated in former articles that no plan in America affords the public sale patron as much protection as is available under the California plan, therefore there can be no legitimate criticism on that score. From the seller's standpoint the success or failure of a selling plan is determined by the financial results of a sale. The fact that 95 per cent of the registered cattle sales of California have been held through this service, and that the breeders themselves, with but a few exceptions, were entirely satisfied, would indicate that there is no ground for criticism on that score.

The only other motive actuating opposition to such a plan must rest in the desire to gain a selfish advantage not obtainable under existing conditions. The only manner a journal can profit through the sale of livestock, aside from service to its readers, is from advertising receipts. It can be taken for granted then that when a journal, finding no ground for complaint as to services rendered buyers and sellers, wages a continual war on such a plan that it does so because of a desire to increase its revenues.

Another fact that leads to this conclusion is the fact that of all the California agricultural and livestock journals, that heretofore mentioned is the only one to raise a howl. Can it be assumed that it alone is the sole protector of the livestock industry and that all other journals are incompetent to the point of having the wool pulled over their eyes? The plain, unvarnished truth is that many breeders are convinced that the paper referred to seeks to undermine the sales organization for the reason that to date it has been unable to jimmy large amounts of advertising.

In order to create dissension and opposition its activities have taken devious ways.

One of the first arguments used was to the point that the plan of selling through a central agency had little to recommend it. That under such a plan the seller lost his individuality and had too little to say in regard to the management. About the time registered beef cattle sales were initiated in California, this publisher began to see some merit in the new plan and he dispatched emissaries about the state in an effort to interest owners of Shorthorns and Herefords in forming a sales organization to handle beef cattle. The argument used was that an organization dealing principally in dairy cattle sales could not render efficient service to beef cattle breeders. No progress along that line has been made.

Occasionally they charged that the sales manager received a rebate on advertising placed in the Cultivator and pointed to the fact that his name appeared as an associate editor in our livestock department. They still maintain that such connection gives this journal undue advantage over other journals. We don't know—maybe it does; at least our contemporary ought to know from experience whether or not such prestige is worth anything—they enjoyed the rare privilege of using a dean of the University as editor for many years.

More recently our indignant friends became convinced that the Holstein-Friesian breed was about to be wrecked in California because the sales manager of the California Breeders Sales and Pedigree Company was also secretary of the California Holstein-Friesian Association.

About the time that idea developed representatives of our contemporary interested themselves in the local association of Holstein breeders of Stanislaus County and for nearly two years have aided, abetted and otherwise encouraged that group of breeders to develop a Holstein selling organization. Attempts have been made to convey the idea that the Stanislaus County breeders have been unfairly treated by the state association. The motive back of our contemporary's activity on behalf of the Stanislaus association is pretty generally understood by everyone save the members of that association. The interested attitude of our friends is due to the fact that, after being rebuffed every time they have attempted to destroy the efficiency of the established selling organization, they seized upon the county association in the hope that they could use that organization as a pry to greater advertising appropriations.

The charge that the business of selling registered cattle in California is in the hands "of an inner circle" that gets a "rake-off from what an outer circle produces" is not only laughable but untrue. That this journal enjoys any special privilege at the hands of the California Breeders Sales and Pedigree Company is equally false and is based on nothing more than a narrow minded envy generated by the fact that this journal, through liberal and fair policies,

TRAVIS B. MINGS
HOLSTEIN DISPERSAL
65 Registered Cows and Heifers
El Monte, Calif. Thursday, January 5, at 10 A.M.

Fay Tritomia Hengerveld, a 30 lb. daughter of Mutual Fobes Longfield De Kol, selling heavy with calf to a richly bred son of Sir Pietertje Ormsby Mercedes.

Marion Hengerveld Pontiac, out of Fay Tritomia Hengerveld, the 30 lb. cow shown at left, and sired by the $12,000 bull, King Korndyke Pontiac 20th.

In the face of a strong demand for registered Holsteins there is almost the assured fact that fewer of these cattle will be offered for sale in California during 1922 than for any of the past five years. Buyers will therefore use good judgment in attending the early sales of the year.

Mr. Mings is dispersing an excellent herd, rated on breeding, type, production, and the attractive physical condition in which they will be offered.

Every animal is guaranteed a breeder, every one over six months old tuberculin tested and sold subject to retest by the buyer.

The sale managers, California Breeders Sales and Pedigree Co., will extend the usual liberal terms of one-third cash, balance in 3, 6 and 9 months to responsible parties who arrange for credit before sale.

Among some of the good ones in the sale are:

Four daughters of the $12,000 bull, King Korndyke Pontiac 20th.

Four granddaughters of the four times grand champion Bridgford bull, King Segis Alcartra Prilly, sired by one of his 30 lb. sons, a full brother to the junior champion at the 1920 California National.

Five granddaughters of Maid Tuebie Segis, the great cow that made 1,140 lbs. butter from 28,383 lbs. milk in one year.

Several daughters of King Segis Pontiac Jannek, the grand champion in this year's Southern California shows.

Over twenty cows and heifers with official records up to over 30 lbs. butter in 7 days.

A granddaughter of Adirondac Wietske Dairy Maid, whose 41 lb. record is the largest ever made on the Pacific Coast.

The sale will be held on Mr. Mings' farm, two miles south of El Monte, under cover, rain or shine.

RHOADES & RHOADES will be the Auctioneers.

Applications for catalogs or credit should be addressed to the Sale Managers, California Breeders Sales and Pedigree Co. 211-212 Ochsner Bldg., Sacramento, Calif.

Santa Anita Rancho
Pure Bred Registered Percheron, Arabian and Thoroughbred Horses, Holstein-Friesian Cattle, Southdown Sheep, Big Type Poland China Swine, Mammoth Jacks and Jennets.
Young Breeding Stock of All Kinds
Every Animal Guaranteed
Santa Anita Rancho
and Anoakia Breeding Farm
SANTA ANITA Anita M. Baldwin, Owner CALIFORNIA

WE WILL CONSIGN FIVE BULLS TO THE
T. B. MINGS SALE
Registered Holsteins January 5, 1922
They are out of cows with records up to 32.24 pounds butter in seven days, and by
Sir Aaggie Hiske Walker—Sir Aaggie De Kol Mead—Sir Aaggie Mead De Kol
Be Sure and Be There—They Will Go Cheap
Write for Pedigrees
TOSANTOS HERD
E. D. Barry, Jr. R F D 1, Box 10 Covina, Calif.

OUR Hampshire Swine
Francis T. Underhill of the
Ortega-Underhill Rancho
Has built up a truly great herd of this breed. He urges all who are interested to visit the ranch.
Thos. T. Dinsmore, Mgr.
SANTA BARBARA, CALIF.

enjoys wider support at the hands of California breeders.

The California Cultivator has never at any time participated in the formation, or attempted formation, of any selling organization, whereas our friends who set up the whine of special privilege have on several occasions attempted to organize such agencies. Furthermore, various members of their staff have been urged as sales managers and not a few times have attempts been made to build a selling plan around an individual auctioneer.

LIGHTING FOR COUNTRY HOMES

By Charles E. Poyer

READERS of the California Cultivator who have gathered the idea that electric lighting is costly or inconvenient would do well to disillusionize themselves of this idea. It is a good idea to get rid of because it is apt to prevent one from enjoying to the full the many advantages and conveniences, as well as the safety from fire, which are offered by an efficient electric lighting system.

When Thomas A. Edison perfected the commercial electric light he foresaw a great future for it on the farm. He realized that it was not necessary for a rural home to be on a central station line in order to enjoy electric light and power. He spent many of the best years of his life in perfecting a storage battery lighting system for country homes.

Mr. Edison realized that a home lighting system would be used by persons who had not the time or inclination to study the technicalities of electricity and hence it would have to be simple, durable and "foolproof," as well as reliable and inexpensive to install and operate.

Electric lighting can be provided nowadays at reasonable expense for moderate sized houses, and service may be supplied for the full 24 hours without requiring the operation of the generating apparatus for more than a fraction of that time. Perfection of service and economy of operation are now combined. Country and city are alike the beneficiaries of modern progress in lighting methods.

There is an erroneous impression prevailing among some people to the effect that a home electric lighting system is hard to take care of. On the contrary, it is easier to look after than any other system of lighting, especially when you consider the trouble of filling and cleaning kerosene lamps and looking after other systems.

It is possible to have an electric lighting system of such a character that it is not necessary to operate a dynamo simultaneously with the generation of the light. With the storage battery the current may in effect be stored up to be used when the dynamo is quiet. The storage battery is charged by operating a dynamo. The battery then becomes a source of electricity which may be drawn upon at any time desired. With the best batteries no attention is required during the period when the current is being consumed. In the practical operation of a small electric lighting system this feature becomes of very great importance.

There is no reason why any owner of a rural home, if he desires it, cannot install an electric light plant at moderate cost, and the improvement in living conditions, convenience, cleanliness and freedom from fire risk make the original investment sink into insignificance by comparison.

THE CHRISTMAS TREE HARVEST

THE time of the great winter harvest is at hand, reports the forest service. It bears a crop requiring from five to 50 years to ripen. Arriving late by a single day it is worthless, yet its failure would mean sadness and disappointment to all the dwellers in childhoodland. It is the Christmas tree.

The history of Christmas tree usage extends far into the mists of antiquity and its origin is difficult to trace. Some say it is connected with the legendary Tree of Time, Ygdrasil, the great tree of Norse mythology, within whose roots and branches heaven and earth are bound. Some say the custom may be traced to the Egyptians who at the time of winter solstice decorated their portals with branches of the date palm, the symbol of life triumphant over death.

An ancient legend of the Scandinavians relates how the Christmas tree owes its origin to the "service-tree" which sprang from soil once drenched with the blood of two slain lovers and how each night during the Christmas season mysterious lights played among its branches. To this legend may perhaps be traced our custom of illuminating the tree when darkness comes. Among the Greeks, Christmas is known as the feast of lights.

To people of different localities the term Christmas tree may mean fir, spruce, pine, cedar, or even magnolia, for each region makes use of the most suitable species found near its markets. In the vicinity of Chicago a short needle pine found in Michigan and Wisconsin may be used. On the Pacific Coast the white fir finds favor while throughout Ohio Norway spruce is largely used. In Maryland and Virginia the scrub pine finds its way into many homes, and farther south cedar and holly.

But the Christmas tree de luxe is the balsam fir. Of little use for lumber, it possesses ideal characteristics for holiday purposes, beautiful and symmetrical with long horizontal branches and deep green foliage, each tiny leaf and bud of which sends out a breath of aromatic fragrance.

Yearly a crusade is started against the Christmas tree idea, usually protesting the waste of timber and the destruction caused to our young growth through their removal. The forest service in answer to these protests points out that 5,000,000 Christmas trees are used annually within the United States. Each year a "Christmas tree fleet" makes its way down Lake Michigan with a tree at the mast of each vessel in token of the cargo it carries.

Five million trees of the size used for the holiday festival is, relatively speaking, a drop in the bucket, for that number could be grown on 5,000 acres of land. The lumber industry cuts over a thousand times this acreage in a single year. If on December 25, 1921, the nation's timber cutters should begin work two hours late, the resulting decrease in acreage annually cut would be equal to the area exploited by the Christmas tree industry for the entire year.

The annual cutting of 5,000,000 trees is insignificant as compared with the loss through forest fires which each year sweep over 12,000,000 acres, causing a yearly wastage of about $20,000,000.

In addition, it is pointed out that the lands from which a large portion of the trees are taken is often more suitable for pasture and is more valuable after the timber crop has been removed than it was before. In the European forests the removal of Christmas mas trees is made to serve the welfare of the forests when at the holiday season the cutting of the small trees is in the nature of an improvement thrinning and at the same time a source of revenue. The removal of Christmas trees from our own national forests, under the supervision of forest officers, places a tidy sum in the nation's pocket each year and results in a more healthy and faster growing stand of timber remaining.

It has been demonstrated that by cutting Christmas trees of certain evergreen species above the lower whorl of branches the remaining limbs turn abruptly upward and often reach a height of six feet in less than two years. If a crop of Christmas trees can be cut without actually destroying the parent tree and a new crop sprouted within two or three years, the system may become of considerable economic importance to the industry.

But so far as discontinuing the Christmas tree is concerned, the foresters are against it. Their creed is to put each acre of ground and every tree to its highest use, and to what better use can a tree be put, they ask, than to bring joy to the hearts of children on their greatest holiday?

WINDBREAKS FOR AVOCADOS

Heavy winds prove destructive to avocado fruits and to the trees in general. The fruits are large, on long stems, and so are easily damaged by swaying and beating against surrounding twigs and branches. Leaf stems are brittle and break outright rather than part from twig at base of stem.

When visiting Yorba Linda orchards a few days ago, E. E. Knight told the writer his orchard and those of the district suffered severely, that he had just returned from an automobile trip extending from below San Diego to Ventura and that all orchards had been injured, though a few little pockets or coves had escaped. Mr. Knight strongly advocates planting boundary windbreaks of seedling avocados, the seeds to be taken from the best named varieties. These may be planted thickly and allowed to grow until fruiting or at least until too thick for healthful development. Then every other tree may be cut out or such trees as have not fruited or have borne inferior fruits. The avocado is so heavily foliaged, so large of leaf, that it is a good wind arrester, but when in fruit it is more vulnerable to crop damage than any other orchard tree.

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Will not run, crack or peel.

It will renew your old roof and save the cost of a new one. It fills and seals all holes, cracks and crevices. Especially adapted for shingle roofs.

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Ferti-Lime — THE MASTER KEY TO THE SOIL — THE TRUE AGRICULTURAL LIME

LIME

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BREEDING DATE BOOK--FREE

We have issued a convenient little book for the keeping of breeding dates of cattle, hoping to aid the breeder and cattle owner in maintaining accurate records. We will gladly mail you a copy free if you request it. A postal will do.

CALIFORNIA BREEDERS SALES AND PEDIGREE CO.

C. L. Hughes, Sales Manager

Sacramento Cal.

WE Solicit Your Order For Nursery Stock

Because

—We have been in this business over 40 years in California.

¶ ¶ ¶

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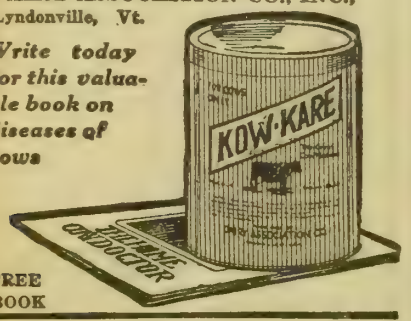

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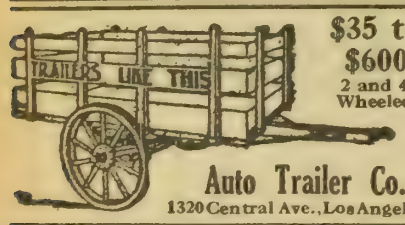

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The Shell and Pea Game

By A. L. Spellmeyer

AT ALL rustic country fairs not a vast number of years ago there was a game played with a few shells and one small pea. The shorn were supposed to guess what shell covered the pea, but always guessed wrong.

Today in this United States the farmer who raises food and livestock is the shorn, the one who always loses, and he is forced to a gamble on every crop planted, on every livestock deal and on every turn, that no bank or other business in this great country would consider.

The livestock man is forced to gamble on drouth, on markets and against loss and disease. The killer doesn't gamble when he buys a steer nor the retailer when he sells it. To ask any business man to sell an article at cost would draw a mighty protest, but to ask a cattle man to sell an animal at a third of its cost is merely a usual custom in these times.

I know a man who planted string beans. He irrigated and cultivated industriously, then he planted and weeded and sprayed and cultivated. Finally he picked and hauled into the market and secured two cents the pound for his string beans from a produce merchant. Later in the day he visited a produce house and saw string beans sold wholesale at 6 cents the pound. That was one month ago.

I know of hundreds of acres planted to olives, costly land with costly water and bearing a good crop, but there is no sale for the olives, not even at picking cost. Yet oil is anywhere from $3 to $7 per gallon when you buy it.

Now I know many bean growers and I don't know one who did better than break even and many are broke. I have seen thousands of acres planted to sugar beets that grew a fine crop, unusually good, and did not pay the cost of it.

Why is the farmer forced to gamble for a living against odds he can't surmount? I have seen potatoes this year going to rot without sale at 50 cents per sack and within two weeks after the supply was bought up sell for $3. We have seen lemons dumped by the car and trainload in washes within a year and today we see lettuce and garden truck being dumped the same way. Big yellow pumpkins cover fields in districts where enough to gather and haul them cannot be realized. While the man with large association prune orchards and a drying climate or dehydrating plant now secures a good price, in the prune season I know men who could not sell their few acre crop for two cents per pound. The farmer must be a seer and crystal gazer in order to live or else be a fool for luck.

There is to pay on most California land interest on investment or rental on a valuation of $10 per acre on range land, and it takes 20 acres to feed one cow all year. Without taxes, labor or loss $16 goes into that cow in one year. The average yearly upkeep of California range cattle is closer to $20 than any other mark. In Arizona with $2 land and government grazing it's $10 a year or more. Today a man can get possibly $30 for a cow. He can get $14 for a calf for veal but would have to add $60 to that calf in order to sell it as a cow at $30. No other business in this land would keep on under such abuse and handicap.

Now if you want to build a house, every part of that material pays its cost and profit, and every man who handles it adds a percentage. The idea of selling all these materials at a 50 per cent loss would be intolerable. As a farmer said who came to a new district, he was sure happy and pleased, as he lost money there slower than he had lost it any place for several years.

While there is no question but that association marketing is the cure for these conditions as the present prosperity of the citrus, walnut and other such efforts fully prove, there is but one conclusion to draw, a change must come or our agricultural class will drift to the peonage and serfdom found in other countries.

At the present time our banks have reached the pinnacle of power and authority. Great food trusts control products, government is more costly each year, cities lower tax rates and increase amount collected. It's "Gamble for a living, you farmer or livestock man, and be darned, but we want ours or we won't do business." As there is always an up after a down perhaps a few years from now the producer may come into his innings, and if he does he will be out to collect.

Livestock News Notes

A wonderfully bred bull calf is the latest arrival in the herd of registered Holsteins owned by A. W. Morris & Sons Corporation, Woodland, born to the famous young cow, Miss Aaggie Acme Burke, and sired by Sir Aaggie De Kol Mead, one of the great sires owned jointly by the Morris firm and Fred Hartsook, Lankershim. This youngster has the tremendous average of 1137 pounds butter in one year for his seven nearest dams. It will be noted that he is out of the same dam as the $41,000 bull, King Korndyke Pontiac Acme, now heading Anita M. Baldwin's herd at Santa Anita. He is a beautiful calf about three-quarters white, and represents a small fortune in value.

When T. B. Mings, El Monte, disperses his herd of 65 head of registered Holsteins on January 5 there will be presented an opportunity to secure members of more famous families than are found in the average sale. Among the attractions are four daughters of the $12,000 bull, King Korndyke Pontiac 20th, two daughters of Prince Riverside Walker, the noted son of Aaggie Acme of Riverside, a granddaughter of Adirondac Wietske Dairy Maid, the great Bridgford cow whose 41 pound record is the largest ever made on the coast; four granddaughters of the four times grand champion Bridgford bull, King Segis Alcartra Prilly; several daughters of King Segis Pontiac Jannek, grand champion bull in this year's southern California shows, and a half sister to Lady Aaggie Ormsby of Rock, grand champion at this year's Pacific International at Portland.

Pottenger Sanatorium Co., Monrovia, has recently completed a number of excellent official records in its registered Holstein herd. Orndyke Duchess De Kol Gerben, a junior four year old, made 26.37 pounds butter from 620.5 pounds milk in 7 days, milking 109 pounds her best day. Miss Aralia Pontiac Burke, a 6 year old, made 25.89 pounds butter from 737.7 pounds milk in 7 days, milking as high as 115 pounds in one day. She went on test five weeks after calving, and in 30 days milked 3001.2 pounds. She is a daughter of Aralia De Kol Pontiac Segis, a son of Aralia De Kol, and her dam is Riverside Sadie Burke, a 954 pound yearly record daughter of Riverside Sadie De Kol Burke, thus giving her an average of 1060 pounds butter in one year for her three nearest dams. De Kol Gerben Orndyke Gem, a junior three year old, made 24.06 pounds butter in 7 days from 568.4 pounds milk, while her twin sister, De Kol Gerben Duchess Gem, just finished a 305 day record with 634 pounds butter from 17,050 pounds milk as a junior two year old. These last two heifers, and the 26 pound four year old noted above are all out of the same dam, De Kol Gerben Roxana Gem, a 22 pound daughter of the great Arizona sire, Roderick Lincoln. Lady Alice Juliana Burke, a mature age cow, made 21.48 pounds butter in 7 days. She is a daughter of Admiral Burke and Minnewawa Juliana 2nd. All four of the females recently completing 7 day records are being continued on yearly test, with Orndyke Duchess De Kol Gerben and Miss Aralia Pontiac Burke both keeping well over 100 pounds milk per day.

Everything points to a strong demand in California for registered Holsteins during the late winter and early spring. California Breeders' Sales and Pedigree Company has already had a number of inquiries as to the probable offerings after January 1, prospective buyers stating they have in mind purchases ranging from two or three head up to 30 head. While the demand expressed in these letters shows a partiality for producing cows or springers, there is also evident a market for heifers, as a great many are rightly figuring that the coming year will be an especially favorable time for the establishment of new breeding herds to take care of the enormously increasing demand for registered Holsteins in this state.

Members of California Holstein-Friesian Association have all been furnished with blanks upon which to report to the association the conduct of official test supervisors sent out by California agricultural college. It is intended through these reports to keep a more accurate check upon the men supervising tests, establishing more firmly the conscientious, capable men and uncovering the careless and those who are otherwise undesirable.

Announcement was recently made that no surplus resulted from the 1921 National Holstein Sale held at Syracuse, New York, last June, and there will consequently be no refund to the various states that consigned cattle. This was the second national cooperative sale, the first one held in St. Paul in 1920 having resulted in a surplus of around $30,000, of which the California Holstein-Friesian Association received over $5,600.

Dairymen in California are buying registered Holstein bulls consistently in spite of the weakness that developed in the bull end of the public sales toward the end of 1920. The owner of one of the largest herds of registered females in the state reports only one bull calf on hand, while another owner of a large herd, who had around 70

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bulls on hand late in the spring, has sold down to 15 calves. Dairymen everywhere want better cows and are gradually learning that the only way to get them is through the use of better registered bulls.

The demand for really good grade Holstein cows was never stronger than at present in California, and only the money shortage holds prices down. Rhoades & Rhoades, Los Angeles, recently sold one herd of 40 grade Holstein cows for an average of $199.65, and another of about the same size for an average of $220, both lots containing a few tail ends.

The animal husbandry division of the University of California has purchased a foundation flock of Cheviot sheep to be used for class and experimental work. Few, if any, flocks of this old breed are to be found in the West.

Fred Hartsook of Lankershim has added another world champion to the ranks of California Holsteins. Miss Aaggie Ormsby Segis, a senior two year old daughter of King Pontiac Ormsby Segis, passed the old record, of 19,060 pounds milk in 305 days, and in 284 days has to her credit 20,075 pounds milk. The final figures are not yet announced, but she will finish with a good margin. As noted above, she is a daughter of King Pontiac Ormsby Segis, a 31 pound son of King Pontiac Netherland Segis. Her dam is Moorland Josephine Colantha.

Rosamaines Pontiac Beauty, a senior yearling in the Hartsook Holstein herd, has just hung up the very creditable seven day record of 22.24 pounds butter eight months after calving. At present she is averaging close to 80 pounds milk per day.

From all reports another world record in the Holstein breed is on the way to a California herd. Bessie Veeman Alcartra Prilly, a senior two year old owned by the Bridgford Holstein Company, Patterson, promises to establish a new record in the 365 day division with an estimated production above 27,000 pounds milk. She is a daughter of King Segis Alcartra Prilly.

While attending the International Livestock Show at Chicago, Alex McDonald of the university farm purchased for T. S. Glide of Davis the junior Shorthorn bull calf Devide Raider. This youngster won his class and headed the winning young herd in a class of 15. He was sired by Meteor, a son of Edgecote Toft, and therefore a grandson of the celebrated sire, Earl of Kingston. His dam, a Bruce Mayflower, is Devide Marigold by Second Thought.

Howard Vaughn, Dixon, owner of the Mountain View herd of Shorthorns, is now en route from the East with a shipment of two carloads of Shorthorn females to add to his herd.

Ormondale Ranch, Redwood City, has purchased from Caledonia Farms, West Sacramento, the Shorthorn senior bull calf, The Caledonian, that went through the show circuit without defeat. He is a son of Imp. Caledonia and is out of Rosa Cumberland 2d. In addition to the Caledonia calf Ormondale has secured a two year old son of Imp. Kingwood from Thomas E. Wilson, Chicago packer.

One of the recent acquisitions to the herd of the Los Angeles County Farm has made good with a bang. Hollywood Lilith Palmyra Abbekerk, purchased from the Carnation Stock Farms at the California Guaranty Sale last spring, is the sixth daughter of her sire to make over 30 pounds butter in seven day test under full age. This record was made after calving at 4 years 9 months, when she produced 30.448 pounds butter from 685.9 pounds milk, or an average of 98 pounds milk per day. Her best day's milk was 106.1 pounds and her best seven days' milk was 704.8 pounds. Continued on 30 day test she made 125.019 pounds butter from 2902.7 pounds milk, showing unusual persistency.

CULTIVATOR PRIZE FOR NOVEMBER

By Prof. F. W. Woll

Five grade cows owned by W. F. Early of Grizzly Bluff, Humboldt County, had the highest average production of butterfat of similar groups in herds entered in the state dairy cow competition during the month of November, viz., 48.72 pounds, and the California Cultivator prize for that month was accordingly awarded to him. The production of the individual grades for the month was as follows:

	Days in Milk.	Milk Lbs.	Butterfat, %	Lbs.
Rosy, Mixed Grade..	241	837	6.9	57.75
Pencil, Mixed Gr.....	242	768	7.2	55.30
Lineback, Mixed Gr.	245	645	7.4	47.73
Little Darling, Gr. J.	253	627	6.8	42.64
Buck, Gr. J.....	245	423	9.5	40.19
	245	660	7.38	48.72

The prize winning grades were all mature cows and were either grade Jerseys or of mixed breeding with considerable Jersey blood. It will be seen that their production ranged from 40.19 to 57.75 pounds butterfat, the average production of milk being 660 pounds, with an average fat content of 7.38 per cent (average distance from calving at the beginning of the month, 245 days). These cows stood first among similar groups of five grades in 15 dairy herds in different parts of the state that competed for the Cultivator prize the past month.

The average production of five of the groups came to above 40 pounds butterfat for the month, viz.: W. F. Early, Grizzly Bluff, 48.72 pounds; M. L. Pontini, Arcata, 47.93 pounds; Peter Iversen, Grizzly Bluff, 47.79 pounds; J. A. Genzoli, Loleta, 46.90 pounds, and F. F. Pellissier, Whittier, 43.53 pounds.

This is the seventh time that the Cultivator prize goes to a Humboldt County dairyman, and honors are now even between this and Los Angeles County, as regards the award of this prize. Although no grade was considered more than once in the award of this prize, there is, however, this difference in the status of the two counties, that the prize was won by five different dairy farmers in Humboldt County and by three different Los Angeles County dairymen.

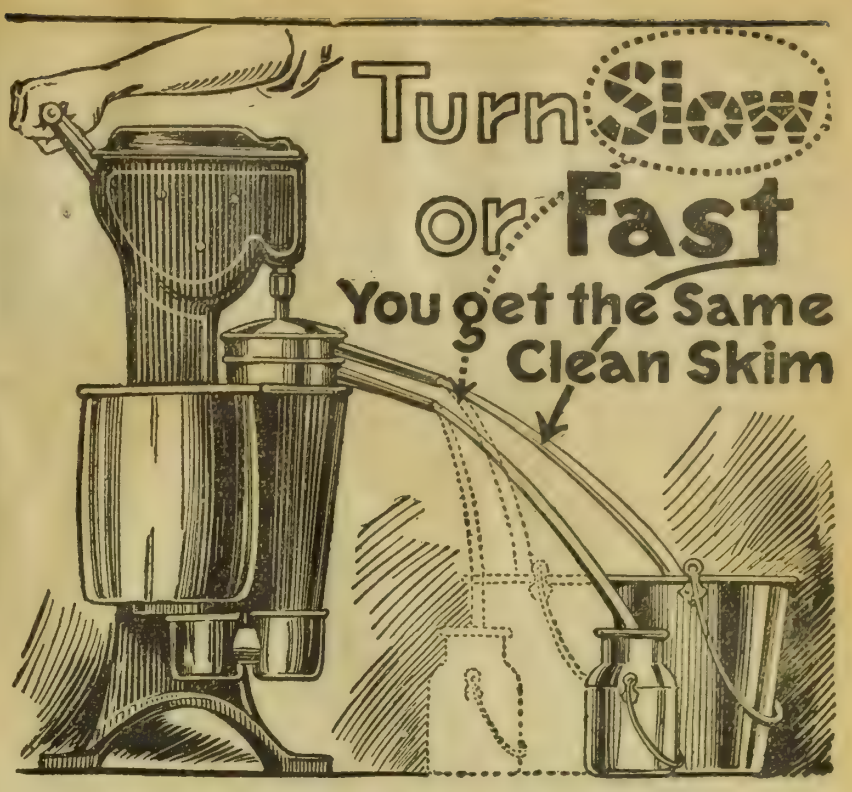
The production of the prize winning grades of the past month was especially remarkable on account of the advanced stage of lactation of the cows, as all had been milking over eight months. The average quantity of the milk produced by the grades was also remarkable, being extremely high, even for Jerseys.

U. C. STUDENTS WIN PRIZES

Osgood Lovekin, Riverside, freshman student in the college of agriculture of the state university, won first prize in the Saddle and Sirloin Club medal essay contest. The first prize was a $100 medal. Ralph Anderson, a freshman student from Oakland, won the third prize of $25 cash. This contest, which is open to all undergraduates in agricultural colleges in the United States, is one of the highest honors obtainable by agricultural college students. This is the first time that a University of California student has won this contest. The subject for the 1921 contest was, "Livestock as a Factor in Eliminating Waste in American Agriculture." The winning essay was chosen from over 100 turned in by students all over the United States. The committee choosing the winner was composed of several noted livestock men, including Dean C. C. Curtiss of the college of agriculture of Iowa state university.

EXPLANATION OF HIDE AND BRAND LAW

The California department of agriculture will shortly issue an explanatory synopsis of the hide and brand law and the act providing for the sale of estray branded cattle. The compilation, prepared under the direction of James B. Newsom, secretary cattle protection service of the department, is now running through the press and will be issued at an early date.



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Finest Hatchery in the World at Pebbleside Poultry Farm. Baby chicks and hatching eggs from our own selected heavy layers. Visit our farm and have a look. Pebbleside Poultry Farm, Sunnyvale, California.

Watch Us Grow—Baby Chicks. We are now booking orders for the season of 1922. Brown and White Leghorns, Rhode Island Reds, Barred Rocks and Anconas. Safe arrival and satisfaction guaranteed. E. W. Ohlen, Campbell, California.

Baby Chicks—Barred Rocks, Rhode Island Reds, Single Comb White Leghorns. Book your orders now for January and later deliveries, from our own stock. E. A. FISCHER POULTRY RANCH, Route 2, Compton, California.

For Sale — Baby chicks, Barred Rocks, Rhode Island Reds, Brown and White Leghorns. Safe arrival and satisfaction guaranteed. Tobener Hatchery, Route 2, Box 306, San Jose.

Hatching Eggs—We are now booking orders for Eggs from our well selected and mated heavy laying stock S. C. White Leghorns only. Pine Tree Poultry Farm, Los Gatos, California.

Book Orders for Baby Chicks from R. I. Reds (Owens Farm), White Leghorns and Anconas; also official strain of White Rocks. Los Angeles, R.F.D. 1-958. Phone Garvanza 1941.

Hatching Eggs from well Hoganized Walter Hogan strain White Leghorns. Will run 96% fertile. $1.50 for 15 or $8.00 a 100. C. M. Bradford, Hemet, California.

For Sale — White Minorca Roosters and Cockerels, $5.00 for Roosters, $3.50 for Cockerels, all blue ribbon stuff. L. W. Pray, Durham, California.

Hudson White Leghorns made official 200 egg records in Oregon, Washington and last Missouri contest. Hudson Poultry Ranch, Escondido, California.

Baby Chicks—Thoroughbred White Leghorns, Hoganized. No dead or weak ones charged for. Schellville Hatchery, Schellville, Sonoma County, California.

Baby Chicks Hatched Right, sold right. Order now for 1922 Standard Varieties of Purebred. Maxwell Hatchery, Madera, California.

Los Gatos Hatchery solicits your order for purebred White Leghorn Chicks. Shannon Station, Los Gatos, California.

Silver Campines—Males $5. Eggs setting $5. Roy Ward, Lindsay, California.

Pit Games—Old and young trios. R. H. Crane, Santa Rosa.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

FARM LAND FOR SALE

READ THIS!
20 acres, 1½ miles from town, located on good county road.
10 acres in 5-yr.-old Thompson Seedless vines, all staked.
About 4 acres in 10-yr.-old almonds.
About 4 acres in 3-yr.-old almonds.
About 2 acres in drying yard and around buildings.
The house is small and can be used for temporary home until you build a permanent home. Beautiful shade trees where house will be built. Good well with enclosed tank house and windmill. Barn and hulling shed. Several fruit trees around buildings.
This place can be bought for $10,000. The vineyard alone is worth this much. Write us for complete set of photos of this place, if interested.
NELSON REALTY COMPANY
Arbuckle California

WE WANT "GO-GETTERS"
Sutter Basin is ready for "Go-Getters." It is a practical farming project in crops today. Deep, rich soil with irrigation and drainage system, river and rail transportation. In the heart of the Sacramento Valley. Very liberal terms to men who know how and will work. Write today. Sutter Basin Company, California Fruit Building, Sacramento.

Real Estate and Government Farm Loans. We sell Real Estate and make Federal Farm Loans at 6% int. on long term of years. It will pay you to see us before you buy any real estate or make a farm loan. We have some very good bargains in San Fernando Valley lands. Planalp & Gardner, 446 Bradbury Bldg. Phone Main 8531. Los Angeles, California.

Farmers, Attention—Literature, newspapers and price list of farm lands of Colusa County, the banner County of the great Sacramento Valley, free for postal card. F. B. Pryor, Colusa, California.

For Sale—Dairy, 20 acres, fully equipped, 23 cows, fine buildings, plenty water, milking machine, silo, leased for oil, cheap. Route 3, Box 28, Santa Ana.

For Sale—One acre up, any quantity; plenty of water, terms. Yours for a square deal. W. E. Speer, Manteca, California.

For Sale — Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

DUROC-JERSEYS

Weanling Boars and Gilts by Pathfinder Wonder (Great Wonder I Am ex an 800 lb. Pathfinder sow) for $10 each. Bred sows and gilts. Derryfield Farm, Capital National Bank Bldg., Sacramento, California.

Greenwood Farm Durocs — Moderate prices on bred gilts and weanling boars. Select individuals. Most popular breeding. H. C. Witherow, Mgr., Live Oak, Sutter County, California.

Boyana Big Type Durocs — Breeding stock, priced right for sale. Inquiries invited. Satisfaction guaranteed. J. Boyd Harrold, Dixon, California.

Big Type Durocs—Better Durocs at right prices. Harvey M. Berglund, Dixon, California.

Winsor Ranch Durocs—The best of stock at reasonable prices. BONITA, CALIFORNIA.

BERKSHIRES

Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Calac Orchards, Martinez, California.

POLAND-CHINAS

Big Boned Poland Chinas—Bred gilts and young boars priced to sell at once. Young stock, either sex, for sale at all times. Bassett Bros., Hanford, California.

MISCELLANEOUS

A Complete Outfit, never used, of "Star Litter Carriers" including 2 Star Carriers, about 300 ft. of tracks, besides curves, switches, hangers, etc. Can be bought reasonably. Apply at Oakland Art Pottery, 2237 E. 12th St., Oakland, California.

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

Powerene—County Rights Free. It equals gasoline at 5c. Adds power, prevents carbon, saves repairs. Guaranteed safe and harmless. To introduce, the equivalent of 20 gallons prepaid $1, if ordered now. P. Barnes, Dept. E, Santa Rosa, California.

Hemstitching and Picoting Attachment; fits all sewing machines. Price $2.00. Checks 10c extra. Light's Mail Order House, Box 127, Birmingham, Ala.

Avoid Law Suits by having your property lines properly surveyed and established by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

HORTICULTURAL PRINTING

Catalogues and Booklets, office forms and correspondence stationery for the nursery, seed and florist trade; half-tone cuts of many standard plants. Correspondence invited. The Kruckeberg Press, 236 Court St., Los Angeles.

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Save Your Roof for 15c a gallon with Asphaltoid. Direct from producer to consumer permits this low price of 15c a gallon. The finest roofing and preservative paint under sun. This is a natural product—why pay more for acid treated asphalt that eats your roof? Mail orders, barrel lots promptly shipped. Equally good for shingle, paper or metal roofs. Woolner Oil Co., 4th and Commonwealth, Los Angeles.

Roofing Paper—
Firsts, complete with nails and cement.
1-Ply $1.25; 2-Ply $1.60; 3-Ply $2.20.
Lead and Oil Paint.....$2.20 a gal.
Roof Paint Special..... 35c a gal.
Prompt Deliveries on Mail Orders.
ANGELUS ROOFING & PAPER CO.
764-766-768 So. San Pedro Street,
Phone Bdway. 5401. Los Angeles, Calif.

SEEDS AND PLANTS

ROOTED VINES
For Sale — Alicante Bouchet, Malaga, Thompson Seedless, Zinfandel and Emperor rooted vines. These vines are guaranteed A No. 1, true to name, certified and from clean producing vines. We are also booking orders for cuttings. CHAPMAN & SON, Modesto, California. P. O. Box 906, Phone 663.

For Sale—Seedless Thompson Malaga Muscat and Almeria (Ohanes) grape rootings. Cuttings came from the finest vineyards of Tulare County and guaranteed to be A No. 1. Write for prices per thousand lots. J. Murray, 7050 Kester Ave., Van Nuys, Los Angeles County, California.

Sweet Clover Seed For Sale—Buy direct from the producer and save money. Small quantity of highest grade seed yet for sale by the largest producer of the State. Quality and variety guaranteed. Write for sample and price. Address George Forest, Standish, California.

Raspberry Snell Has It—The wonderful Giant everbearing Red Raspberry La France. Many of the berries are one inch in diameter, delicious flavor. Order your plants now from Ralph L. Snell, Mountain View, California.

D. Lotus Good Seed, direct from the Methodist Missions in China. MANCHURIAN STOCK for Japanese persimmons. Fred. W. Kelsey, Route 1, Box 491, El Monte, California.

Cory Thornless Blackberry—Large vigorous, well rooted plants from experienced grower. Satisfaction guaranteed. Illustrated price list. Write Chas E. Mortensen, Lodi, California.

Wagner's Giant Winter Rhubarb, 1 year old, per dozen 50 cents; 1 year old, per hundred $3.00; 2 year old, per dozen $1.00; 2 year old, per hundred $7.00. Currier Bulb Co., Santa Cruz, California.

Cory Thornless Blackberry—Extra large, well rooted plants now ready. You get the genuine from the Pioneer Grower. Wm. Mortenson, Route 1, Lodi, California.

Cory's Thornless Blackberry Tips, extra fancy, 15c each or rates by the thousand. Corner Inglewood Ave. and Arborvitae, Inglewood, California. C. C. Bryson.

400,000 Rootings, Thompson, Malaga, Emperor, Muscats, Sultana and Cornichon and cuttings, also wine grape cuttings; 4 kinds of alfalfa seed. Box 501, Fowler, Cal.

For Sale—Brandywine Strawberry Plants, fifty cents per hundred, postage extra. E. A. King, West Fourth Street, Riverside, California.

Cory's Thornless Blackberry—10,000 selected, well rooted tips. Write us or call. Sylvan Nurseries, Lincoln Highway, Roseville, California.

Cory Thornless Blackberry Plants, shipped from Cory Mountain Pass Ranch. 10, $2.00; 25, $4.00. G. S. Wills, Jamestown, California.

Alfalfa Seed — Certified Hairy Peruvian, Smooth Peruvian, Common. Write for samples and prices. Delta Seed & Feed Co., Yuma, Arizona.

Garlic—For sale, good large, fresh garlic sets, per pound 15c. Orders of 10¢ lbs. or more postpaid. C. J. Baden, Garden Grove, California.

For Sale—400 Black Mexican Avocado Seeds @ $4.00 per 100. Mrs. A. B. Phelps, Sherman, California.

MACHINERY

For Sale—Rebuilt windmills, tanks, pumps, cylinders. Make galvanized tanks, 400 gal., $16.25; 600, $26.25; 1,000, $36.25; 2,000, $48.25. Irrigating pipe, all sizes, for less. Why pay more? Demmitt Co., 120 N. Main, L. A.

For Sale—No. 10 Trundaar heavy duty tractor with extras, in perfect condition. Sacrifice for quick sale. Will demonstrate. Write or call Donald West, Box 645, R. D. 1, San Gabriel. Phone Pasadena Colorado 4764.

For Sale, $500—I. H. C. 8-16 Tractor used 60 days and is in perfect order, extra good grousers and 75 ft. new belt. Can be seen at 216 E. Market St., Los Angeles. Owner at 437 W. 62nd St. Phone Vermont 588, F. J. White, Los Angeles.

For Sale Reasonable—1 Holt 75—Schmeiser Leveler—2 Heavy Davis Disc Plows—Trap Wagon—Holt 18—8 ft. Double Disc Harrow—1 Five Disc Plow—Case Thresher 18x36. All in good condition. Clarence E. Newman, Chowchilla.

For Sale—Pumping Equipment. New and complete No. 38 Pomona Pump Head, 320 feet column pipe, rods and cylinder, 70 feet 14 inch 6 ply belt, 40 h. p. G. E. motor. Address J. & R. Well Company, San Dimas, Calif.

For Sale at Bargain Prices—One 750 gal. heavy steel oil tank and wagon; one six foot land leveler; one International feed grinder; one four-gang Stockton plow. Drew Carriage Co., Ontario, Cal.

For Sale—One C. L. Best 12-25 Tractor, in fine shape. Might take as part pay span of good mules or horses. Terms to responsible party. Address Box 299, Sawtelle, California.

FOR RENT

For Rent—At Mission Acres in San Fernando Valley, good 6-room bungalow, four acres excellent land, fruit, garage and poultry houses, near car line. W. C. Planalp, 4635 Melbourne Ave., Hollywood.

For Rent—Dairy equipment for 40 cows; sandy location, 100 ton hay barn, good six room house, large corrals, windmill and engine for water. E. A. Sutton, W. Artesia St., R. D. 1, Artesia, California.

PHOTO FINISHING

Send Your Favorite Negative and 40c, for 8x10 sample enlargement. Prints, any size, 4c each. WAGAR, Ukiah, California. Dept. E.

PHEASANTS

Beautiful Chinese Ringnecked Pheasants $12 per pair. Pause Pheasantry, Fairoaks, California.

TREES

Carob Trees—A fine beautiful evergreen legume tree, not a soil robber but a nitrogen feeder, unsurpassed for windbreaks in orange groves. No roots to cut. Produces two hundred to 1000 lbs. of richest food grown. $2.50 brings you 4 sample trees prepaid. R. 2, Box 60, Original Carob Nursery, San Bernardino, California.

For Sale—Placentia Perfection and Eureka grafted walnut trees. Prices 1-3 off from last season. Our stock is grafted from choice grafted orchards. See our stock before buying. The Walnut Nursery, Whittier, California. Phone 6294.

For Sale — Walnut Trees — Erhardt and Placentia grafted on Northern Black Root—4 to 6 feet high, $1.00; 6 to 8, $1.25; 8 to 10, $1.50; 12-14, $2.00; Erhardt, 8-10, $2.25; 10-12, $2.50. Borley and Wilkins, Puente, California. Phone 162.

For Sale—One and two year old citrus stock budded with "Supply Co. Buds." We have also all commercial varieties of deciduous. Now is the time to order. F. A. Tetley and Son, 415 W. 8th St., Riverside, Calif.

For Sale — Hachiya Persimmon Scions from best of 300 proven trees. Nursery is sold out, but will reserve for 22-23 season. Sherwood Persimmon Nursery, Box 236, Fullerton, California.

For Sale—Grafted walnut trees, also citrus and deciduous trees. Order now for 1922 delivery. Get my prices. Ketscher's Nursery, 1101 E. 4th Street, Santa Ana, California. Phone 572-W.

For Sale—10,000 Florida Sour Orange Seedbed stock, 12" and up. Valencia Late, Washington Navel, Eureka Lemon trees. Prices right. W. V. Skillman, R.F.D. Box 387, San Fernando, California.

Hachiya Persimmon Trees—Best of all Japanese persimmons. Also rhubarb plants for home and field. Fred W. Kelsey, S. Rosemead Avenue, El Monte, California.

Reliable Trees and grapevines at a fair price. Write us for price list. We ship on approval. J. F. Miller & Sons, Healdsburg, Cal.

Trees—Tuscan Kling peaches, Sugar and French prunes, five to eight foot trees $35.00 per hundred. Johnson's Nurseries, Almaden Road, Los Gatos, California.

For Sale—Grafted Walnut Trees, Placentia Perfection and Eureka. These are well rooted and first class in every way. Rivera, California, C. E. Bullock.

For Sale — ATHEL OR EVERGREEN TAMARIX. Best tree for immediate windbreak and shade in hot dry localities. Leonhardt Swingle, Indio, Cal.

Sampson Tangelo and Dwarf Chinese Lemon; the two best citrus products ever introduced. Coolidge Rare Plant Gardens, Pasadena, California.

For Sale—Walnut Trees. Placentia Perfection and Eureka, grafted on black root. La Puente Walnut Nursery, Puente, California. Phone 103.

Florida Sour Orange Seedlings. Nursery, 100 Ventura Street, Altadena. Address, Paul B. Magee, Mecca, California.

For Sale—Fruit Trees, grapevines, unrooted grape cuttings, etc. Write for price list. Burke's Nursery, Lodi, Cal.

For Sale—One and two year old Wonderful Pomegranate trees. fine stock. J. W. Irwin, Lindsay, California.

For Sale—California Black Walnut seedlings, 1-3 feet. Ripon Nursery Company, French Camp, California.

Bishop's Nursery, Highland, California, will be pleased to figure on your order for trees, plants, or seeds.

Citrus Nurseries, Murphy Oil Company, East Whittier California. Selected stock for sale; inspection invited.

Trees—Plant CHERRIES now for big income. Cash Nursery, Sebastopol.

CATTLE

Guernseys — Grape Wild Farms — Berkshires—Young bulls, from calf age up to 16 months old, of May Rose breeding and out of A. R. cows. Bred sows and gilts, service boars and pigs of both sexes for sale. Grape Wild Farms, Escalon, California. A. B. Humphrey, Proprietor.

Berylwood Stock Farm—Breeders of registered Holstein cattle and Duroc-Jersey swine. Every cow an A. R. O. and T. B. tested. Bulls and females for sale. J. W. Snodgrass, Hueneme, California.

Shorthorns bred for range purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome; information cheerfully given. T. T. Miller, Hollister, California.

Extra Good Shorthorn Bulls ready for service. Red and Roans, well grown and priced to sell. Come and see them. Howard Vaughn, Dixon, Calif.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Polled Herefords and Durocs — Diablo Stock Farm, G. W. Emmons, Prop., Danville, California.

Some Choice Registered Holstein heifers and bulls of serviceable age for sale. J. W. Scudder, Escalon, California.

Winsor Ranch Jerseys—Bull calves with production behind them, at reasonable prices. BONITA, CALIFORNIA.

RABBITS

Pedigreed Flemish Giants — No fancy prices. Maud Beeching, 1578 W. 46th St., Los Angeles.

GOATS

For Sale—Highest class pure bred and grade Toggenbergs. Milk goats. La Corona Goatery, El Monte, California.

TURKEYS

GIANT BRONZE TURKEYS

Large turkeys can be raised at practically same cost as small ones. It is in the strain. One of our toms will give you 5 more pounds of meat to market in all his get the first year, besides vitality and beauty.

GOLD NUGGET STRAIN
J. Will Blackman, Originator

Won at California's two greatest shows Gold Special Sweepstakes for best turkeys, California State Fair, 1920, against 66 of the State's best turkeys, also every 1st, 2nd and 3rd prize and Gold Special Sweepstakes at Los Angeles Livestock Show of 1920.

AN UNEQUALED RECORD

Toms and hens for sale; a few high class exhibition toms to win in any show or head any flock. Book orders early for December and January shipment, as each year we are sold out.

Address
BLACKMAN & MUMFORD
607 East Third St., Los Angeles, Cal.

Turkeys — Purebred Giant Bronze, male and female stock, sired by our two famous toms, "Goldbank Boy," champion Giant Bronze first prize winning cockerel at Madison Square Garden Show, New York, January, 1921, and "Copper King Jr.," a 36-lb. yearling son of "Copper King V.," the 38-lb. yearling that was grand champion at Madison Square Garden Show, January, 1919, both bred to choice 20-lb. hens. Eggs in season. Address Bronze King Mountain Farm, Calistoga, Cal.

If You Are Going to Start Something, Start Right—If you are in need of a Bronze turkey tom or several of them—we have them for sale. Big lustrous fellows all sired by winning toms and from our winners at State Fair and Oakland. A few pullets for sale, hens up to 25 lbs. We have only a few left. Get them now. Eggs in season. Mrs. D. T. Wieland, P. O. Box 21, Valley Home, Stanislaus County, California.

It's no wonder so many poultry raisers make a failure of the business. Without any knowledge of raising poultry people will branch out expecting to make a success. By putting in practice the valuable contents of POULTRY FOR PROFIT, $1.00 postpaid, success is assured in the poultry business. Cultivator Publishing Company, Los Angeles, California.

Mammoth Bronze Turkeys — Stafford strain Eastern stock, beautiful plumage, extra large frame and bone. Money back guarantee. Send for circular. R. M. Dodge & Son, R. D. 2, Box 129, Bakersfield, California.

Mammoth White Holland Turkeys—Choice hens and toms from our famous breed of large vigorous turkeys, improved by Eastern stock. Earl V. Smith, Loma Vista Ranch, Willows, California.

Pure Bred Bronze Young Toms, $15.00; young hens, $10.00. Pure bred S. C. Buff Orpington cocks, $5.00 each. Mrs. M. L. Trewhitt, Route B, Box 47, Hanford, California.

For Sale—Wild Turkeys—Best, cheapest, most certain and indispensable producers. Cash deposit secures stock or eggs. Blanche Dresser, Tulare, California. Route C, Box 194.

Mammoth Bronze Turkeys—Choice toms for sale. Prizes taken at Riverside Fair, 1921. E. H. Varley, Hemet, California.

Bourbon Red Turkeys, Buff Orpingtons. The Ferris Ranch, Reservoir Street, Pomona, California.

Thoroughbred White Holland Turkey Toms $12. Hens three for $20. Pause Pheasantry, Fairoaks, California.

WANTED

Wanted — Commercial orchard pruning. Work guaranteed. For rates address W. I. SCIBIRD, 2212 Nicholson Avenue, Monterey Park, California. Phone Alhambra 656W.

Wanted—Established California concern wants men, with rigs preferred, to represent it. Good pay. Can use local agents working during spare time also. Address J. H. Yetter, 317 Central Ave., Los Angeles.

Wanted to Buy—Any kind of dried fruit, honey or walnuts. Mail samples to W. A. Collins Co., Box 397, Santa Ana, California. Phone 71.

Wanted—Walnuts Meats and cull walnuts. We solicit culls for cracking only, paying cash. Fred L. Mitchell & Son, 214 French St., Santa Ana, California. Phone 551-M.

Cash Buyers want Western farms. Will deal with owners only. Write R. A. McNown, 370 Wilkinson Bldg., Omaha, Neb.

We Will Buy your Calla Lily roots. If you have 100 or more, write us. Sevin-Vincent Co., 512 Washington St., San Francisco, California.

Wanted—400 Splendor prune trees on Peach or Myro root. M. Sharpe, Vacaville, California.

HE COULD PROVE IT

"Well," said the waiter to the diner who had just had his coffee cup refilled for the seventh time, " you must be very fond of coffee."

"Yes, indeed," answered the student, "or I wouldn't be drinking so much water to get a little."—Lehigh Burr.

NO MIXED TRICKS

"Would you marry a widower, Maude?"

"No. I prefer to tame my husband hyself."—Judge.

AIR CLEANERS

Ranchers and contractors who are tractor owners are only recently beginning to understand the damage done to their motors when working in an atmosphere ful of sand and grit, and the value of an efficient air cleaner.

A motor first dass in every respect will wear out and be comparatively worthless in a very short time if allowed to work in a sand laden air. Unless there is an air cleaner attached that really cleans the air of all particles, the wear on the engine is increased many hundreds of times.

The dirt when taken through the air intake foils the carburetor and manifold, scores the walls of the cylinders and wears out piston rings. As is well known, grit will stick to any oily surface and will adhere until it is ground out by the moving parts. These surfaces are also being continually supplied by new particles taken in through the carburetor.

An air supply clean and free from dust to the motor is essential. One instance in Reedley: Two tractors were working under the same conditions; the motor of one was badly cut out and almost ruined after 500 hours service, the other showed no signs of wear whatever after 300 hours work. They were both equipped with air cleaners—one did not keep out the dirt and one did.

With clean air and proper lubrication the wear on a good motor is very small; it is not work that wears out an engine but sand and dirt from the atmosphere.

Nearly all tractors come equipped with an air cleaner, there being several makes on the market. The purchaser of the tractor should take every care to procure the best machine on the market. The life of the motor is insured by the purity of the air supplied through the carburetor.

CAPACITY AND POWER REQUIREMENTS OF SILAGE CUTTERS

Some technical capacity and power tests on four standard motors of silage cutters now on the market were recently made by the engineering department at the Wisconsin college of agriculture at Madison. The first brief summary is as follows:

Type.	Cut Length.	H. P. Hours Per Ton.	Tons an Hour.	Average Power Needed.
Cyl. abt.....	½ in.	1.27	14.28	18.14
Fly wheel..	½ in.	2.14	15.01	32.12
Fly wheel..	⅜ in.	2.02	9.03	18.24
Fly wheel..	⅜ in.	2.23	12.36	27.56

The first one made 1,800 cuts a minute and the throat size was 15 by 4½ inches. The net current used in cutting was 26.2 kilowatts, and equivalent to 35.2 horsepower hours with a total tonnage of 27.7 tons.

The second one made 3,200 cuts a minute, and the throat size was 16 by 6½ inches. The net current used was 52.8 kilowatts. This was equivalent to 70.8 horsepower hours with a total tonnage of 33.14 tons.

The third one made 2,250 cuts a minute, and the throat size was 13 by 3¾ inches. The net current used in cutting was 14.07 kilowatts. It was equivalent to 18.8 horsepower hours and the total tonnage was 93.3 tons.

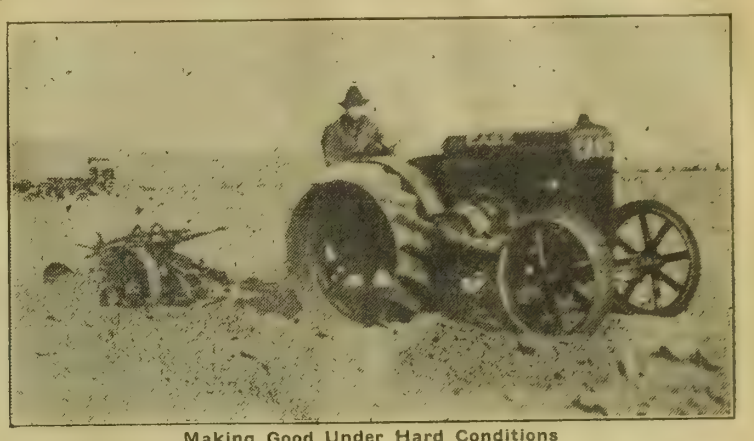
The fourth one made 2,350 cuts a minute and the throat size was 17 by 9½ inches. The net current consumed in cutting was 23.9 kilowatts. This was equivalent to 32.1 horsepower hours and the total tonnage was 14.4 tons.

OUR MOTORIZED FARMS

If the pioneer farmer of America, who broke the virgin land behind the slow moving ox and who laboriously hauled his produce to distant markets, could return now, he would stand speechless at what he saw. Instead of the ox and the horse, which once drew his plow and wagon, he would find nearly two and a quarter millions of gasoline tractors, auto trucks, and motor cars doing the work of the farms, and serving the nation with food.

Were the ghostly spirit of the past to inquire further it would find an average of 332 of these strange mechanisms on each 1,000 farms throughout the country. In eight states he would find that more than half of all the farmers owned a motor driven vehicle of some sort. And not only this, the spectral pioneer would be completely dumfounded by the private electric plants, electric dairies and other labor saving mechanisms of which he never dreamed.

Census reports often are dry reading. But the preliminary report on farms of the 1920 census, just issued, is susceptible of being made into a romantic story of agricultural progress. Science has not been unmindful of the farmer in her march, and he has nothing to complain of in the checking up of her gifts. — Cincinnati Times-Star.



Making Good Under Hard Conditions

The new 10-18 Case Tractor pulling three 10 inch Grand Detour plows in hard, dry ground with loose top soil.

POTATO RAISERS USE TRACTORS

Power farming has shown itself to be peculiarly adaptable in the potato growing regions of the country. Of course the processes of soil preparation are all handled exceptionally well by tractor power. The planting too can be done by machines drawn by tractors. A number of large growers are using motor cultivators for all the tillage work, and in the harvesting the tractor pulled potato digger of today is the logical evolution of the old back breaking spading fork.

In 1866 by the methods then in use it required 108 hours of a man's time to produce one acre of potatoes with a yield of 220 bushels. Using modern machinery the time required to do the same amount of work has been reduced to 38 hours, a saving of approximately 65 per cent in time.

At present prices and using the old method, the cost of producing an acre of potatoes was $13.18. Up to date equipment has brought this cost down to $5.95, a saving of approximately 54 per cent in actual cash.

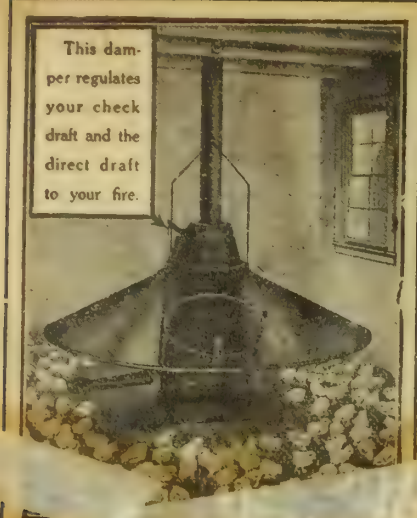
The addition of anti-friction roller bearings, encased in dust proof enclosures, represents a recent and important step in the perfection of the potato digger and it has been proven through actual field tests that a machine so equipped requires much less power and is far more dependable than one with plain bearings.

China's interest is not so much in disarmament as it is against dismemberment.—Columbia Record.

And in the present Christmas let us give
All help, from care the suffering to release;
All zeal, to share our happiness and peace,
For life is long enough for love to live
And short enough for bitterness to cease.

All glory be to God on high,
And to the earth be peace;
Good-will henceforth from heaven to men
Begin, and never cease.

The message of "good will to men,"
Divinely clean and bright,
Shines from the hills of Bethlehem
With everlasting light.



Brooder Stoves

burn coal, coke, wood, or briquets. The only safe and reliable method of brooding chicks. Queen stove has patent draft that controls heat perfectly. Write for catalogue, also ask for general catalogue of full line poultry supplies.

C. E. HILL CO.
418 11th St. Oakland, Cal.
"Everything for the Poultryman"

THE MISSION HATCHERY

Capacity 25,000 Chicks Weekly
Quality Chicks—Hatched Right—Priced Right

If YOU are meaning business in poultry during 1922 it will pay you to send for our circular and special letter on early chicks.
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We are exclusive hatchers for spring of 1922, for F. R. Richardson, George J. Richardson, Charles G. Weaver, L. G. Hack, G. A. Saylor, C. W. Phelps, and George L. Miller; being the product of 25,000 selected breeding hens.
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Intensive Poultry Culture--The Tupper System

By M. E. Bemis

FOR a long time to come the big commercial poultry plants of this country will continue to be run on much the same general lines as the other successful plants of this period. There will always be some that for one reason or another cannot go into poultry on the more or less extensive plan of general commercial poultry farms. This class of poultry keepers, or would-be poultry keepers, constitutes a large number of people, and their total production, while not approaching in volume the total [illegible] farm poultry [illegible] ercial [illegible] are that [illegible] rth consideration.

Intensive systems of poultry culture appeal most to those who are long on time and short on available land. The intensive systems should not for a moment considered by those who do not expect to devote a certain amount of time each day at regular hours to the poultry, and to the exclusion of everything else. A proportionately greater amount of time for the number of fowls must be taken or the intensive plant fails at the start. To women who must do most or all of the work in connection with poultry; to the semi-invalid, the crippled or the aged, intensive poultry keeping may be made to pay big returns upon the investment and net good wages and a good profit in addition. To some extent the intensive systems apply well to the backyard fancier, but it has been my observation that as a rule the backyard poultryman must make his poultry fit into spaces not otherwise taken up with garage, garden, walks and shrubbery, and perforce he must make his own system or adapt some of the others to his own peculiar needs.

A fault of many of the systems, so far as this southwestern country is concerned, is that they do not seem to be well adapted to hot climates. Some of them involve too much work, in other words they are too intensive, and some quite possibly are not practical under any conditions or for any climate.

I have seen hens kept under a great many conditions in a geat variety of climates. We have here in Arizona some commercial flocks, handled in such a manner that it would be hard to imagine that much improvement could be made. We have many farm flocks that are well cared for and are returning profits that indicate there is little room for improvement, and we have many backyard breeders and poultry keepers that are doing well, but in my opinion it has been left for Carl Tupper and his wife to work out a plan that will enable one to keep the greatest possible number of chickens to the acre and return a maximum profit for a hot climate.

This system is best adapted for a combination fruit orchard and poultry farm but might be made adaptable where there is no shade by the growing of thick rows of castor beans. The plan calls for a series of yards 30 feet long and 12 feet wide. On the Tupper farm these yards extend along the south end of an olive orchard and run east and west. This makes the fronts of the houses, which will be described presently, open to the north, a possible objection for most locations, but on this farm, protected as it is in this grove, the north front is less of a disadvantage than an advantage.

Cross fences divide the long runs into 30 foot sections or separate yards 12 feet wide. Set into each division fence is a self-feeding hopper with openings on each side and a capacity sufficient for a week's supply of mash and rolled barley. The trough of this hopper is set up from the ground about ten inches, and underneath are set two crocks, one for water and one for skim milk or Lactein. These crocks as well as the hoppers serve two pens. The hoppers are covered with a roof that extends out far enough to be a protection against occasional rains. Shell and grit boxes are provided for each pen, also nests built something like the hoppers, that is, set off the ground a few inches and covered.

The house is simple and inexpensive but serves its purpose as a roosting house and to some extent for shade. This house is built of 2 by 2 scantling for the frame work. The front is 6½ feet high from the ground to the roof, and the rear 5 feet. The roof is iron roofing 6 feet long, which allows for an extension of about six inches over front and rear and is laid so as to extend out over the sides a few inches.

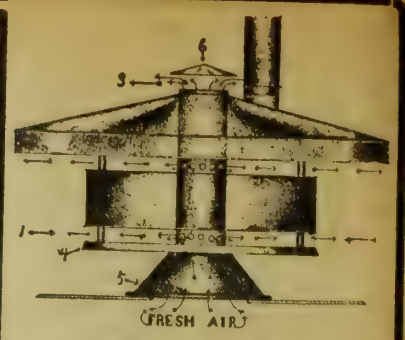
Economical Poultry House
House on Tupper poultry farm shows method of setting roosts at right angle to front.

The floor or droppings board is built on a framework which is a part of framework of the house. It is 1½ feet from the ground. The floor is made of ½ inch lumber, laid tight. This floor, as before stated, serves the double purpose of droppings board and shade. Roosts are 1 by 2 laid flat on a framework which is suspended by wires and held rigid. This requires two wires at each corner, one on the top extending to the corner post about 6 inches above the framework of the roost, and the other below also extending back to the corner. The roosts are fastened to the framework at right angles to the front of the house, or in other words the ends of the roosts are towards the front. The roosts are suspended about 6 to 8 inches above the floor.

The sides and back of this house are burlap, and in summer a part of this is removed. The houses are 6 feet wide, and six roosts 4 feet long, the depth of the house, give a roosting capacity of 24 feet. As 30 birds are kept in each pen this gives about 9½ inches for each bird. I am aware that many would consider this too close crowding, but it seems to work satisfactorily.

An acre of ground in the form of a rectangle 10 rods by 16 rods would give, allowing for 4 foot alleys between runs, about 100 pens, or a capacity of 3,000 birds to the acre. Cost of fencing would be the biggest single equipment item, as the houses are comparatively inexpensive.

The yards are covered with gravel, and no litter except the heads of milo or hegari is permitted. Yards are cleaned frequently so that there is no accumulation of filth of any kind. The droppings boards are cleaned daily. These birds keep busy; they move about in the yards, jump up on the feed hopper, then down again, and seem to get all the exercise that is needed and at the same time do not use up too much energy in running over



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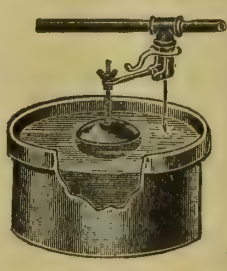

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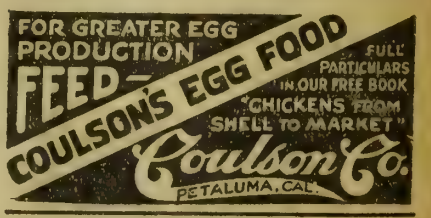

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acres of ground. Egg production has run high. The production during the hottest weather runs as high as 80 to 100 per cent. The summer heat is a trying period with many flocks. The summer grain feed is wheat and dry mash in the hoppers is fed all the year. This mash is composed of one sack bran, 20 pounds cornmeal, 12 pounds shorts, 4 pounds charcoal and 16 pounds beef scrap. Green feed is cut and fed daily, sometimes alfalfa, sometimes grain or lettuce—whatever is accessible.

There are advantages that the intensive systems have over other methods of handling poultry, chief of which is the closer supervision possible. Tupper calls attention to the simplicity of the culling. At night he can go to any house and in a few minutes go over every bird. They are all in easy reach, no shifting around and getting mixed up. In the yards during the day if one appears to be sick it is easy to pick her up and get her away. At all times the fowls have more of the individual attention that makes for success in poultry keeping.

Pen production can be closely watched, and if the production of one pen fails the reason can be ascertained more readily than when the birds are all in one flock. The best birds can be more readily selected, and in this way breeding stock of the best more easily maintained.

For breeding yards 12 birds only are allowed in one yard or pen. These are mated to a vigorous male, only one being allowed for each yard.

The health and vigor of the birds is excellent, certainly fully the equal of birds in larger flocks with wider range. The system is entirely practical under conditions that make it necessary to economize on space. It is quite possible that enough better results may be had to justify the use of such a system on a commercial scale. That could only be determined by careful experimenting. It has taken some time for the Tuppers to work out their system. Each step has been thought out and then tried out until they feel that it is as near perfect as it can be made. This coming year they will increase from 300 laying hens to 1,000, gradually extending the yards to cover the five acre olive grove.

Poultry Queries

Conducted by Jean A. Koethen

Chickenpox

Will you please tell me what to do to prevent and cure chickenpox and canker? My hens are continually becoming infected although every precaution is taken. My hens are removed from the pens as soon as they show any sign of being sick, houses are kept clean, water jars disinfected daily. Have been feeding semi-solid buttermilk in a wet mash daily and am inclined to think this may be responsible for the canker.—J. A. B., El Monte.

What you call canker is one of the symptoms of severe cases of chickenpox and is not due to the wet mash nor to the buttermilk. Please note reply to Selma subscriber. As the disease is progressing slowly in your flock you may be able to check it by vaccination. Write Poultry Division, College of Agriculture, Berkeley or Davis, California, for particulars. While you are waiting for a reply try sulphur in the mash as recommended by Dr. Sanborn, and lighten up the ration, i. e., add bran to the laying mash, give more greens, if you are not giving all the hens will consume, and less hard grain. The prevalence of chickenpox this fall may be due, as some surmise, to the warmth and dryness of the season which demands lighter feeding than is customary.

Sore Eyes

My White Leghorn hens are troubled with a sore eye, different from anything I ever saw, and I have kept hens all my life. It is not roup. One eye becomes greatly inflamed, lids swell, eye closes. One hen went blind in affected eye and then recovered. They are not sick, yet do not feel well. I bathe the eyes with boric acid containing a few drops of peroxide, but without effect. Houses are clean, ration balanced. Please give me what help you can and ask your readers to help me.—Subscriber, Ontario.

I believe you will find, if you make a careful examination, that this eye trouble is caused by some bit of dry weed or sticker that has found its way into the passage between eye and nostril. You may find it under the lid if you look for it. Such cases are not uncommon at this season. If the sticker is under the lid it will be easy to remove it. If it is in the nasal passage you can only find it by inserting the tip of a small feather which has been dipped in boric acid. Insert the feather very gently at the inner corner of the eye and give it a twist before removing. A poultryman of many years' experience says he has followed this plan for years in treating such cases and always with success. If readers of this column have further suggestions to offer we shall be very glad to hear them.

Ticks

My chicken houses are infested with ticks. Is there any way of getting rid of them without tearing down the houses?—Subscriber, Fresno.

A man who had kept chickens in Arizona, where ticks are a great pes told me recently that crude oil b been found the best remedy there. course the lumber must be so with it inside and out. Use a and see that every crack is After you have gone over your with oil you may have to fo p with a coat of crude carbolic id diluted 50-50 with kerosene. The two together ought to fix the pests, but you may have to repeat the dose. It just depends on how badly the houses are infested.

Chickenpox

My chickens have sore eyes and sore warts at the side of the nostril. I understand this is chickenpox. I doped them with oil disinfectant, also touched the sores with iodine, but to no purpose. When they get this disease they die. Is there any satisfactory remedy, or is it best to chop their heads off at the start?—Subscriber, Selma.

I am sorry to say no perfectly satisfactory remedy has been found. You might write the poultry division of the state college of agriculture at Davis in regard to vaccinating. They furnish the vaccine and give full instructions for using it, but they do not claim that it always secures immunity, nor that what immunity it secures is lasting. If your chickens all have the disease it is probably too late to vaccinate, but you might try Dr. Sanborn's remedy, which is a pound of sulphur mixed in 50 pounds of dry mash. He claims that in Florida the use of sulphur always mitigates the disease in poultry which is already affected and prevents it in birds that have not developed the disease. Chickenpox has until recently been considered an infectious germ disease, but some poultrymen who have had a good deal of experience with it now believe it results from heavy feeding in warm weather and must be prevented by correction of the diet. If this theory is correct sulphur ought to be of some use in treating the disease.

More Chickenpox

Some of my hens have blistery sores on their heads and watery or sticky eyes. They recover in ten days, but the disease seems very contagious.—Subscriber, Lodi.

Please note reply to Selma subscriber above. Your chickens undoubtedly have chickenpox.

Head Lice

What will kill head lice on hens?—Subscriber, Lodi.

Any kind of grease rubbed on two or three times will kill them. Carbolated vaseline is good, and plain lard is just as good.

Paralysis

What causes chickens to become paralyzed? I have lost several in that way.—Subscriber, Lodi.

Paralysis is almost always due to intestinal disturbance, sometimes to worms, sometimes to indigestion, sometimes to the eating of spoiled meat or other poisonous food. A dose of physic, castor oil or Epsom salts, is always the first treatment, and a light diet with plenty of greens should follow it.

CALIFORNIA FARM BUREAU EGG LAYING CONTEST

Alex. Stewart's entry is high pen again for November, the second month of the 1921-1922 contest, with a production of 219 2-3 eggs. J. J. Shore's pen takes second ribbon with a record of 210 1-3 eggs and H. H. Corbett is again in third position with a monthly production of 199 for his ten layers. L. A. Thornwill's pen won the ribbon for highest hen for November with 27 eggs to her credit although three others also laid 27 each, as the contest rules state that in case of a tie, the hen with highest record for the previous month gets the award. The highe for November are: 27 eggs Alex. Stewart, Hanson W. H sha W

ID ON THE EGG MAR

spectacular drop in the lo market the first week in Decem s not traceable to any legitimate e. There was no sudden increase the supply, in fact, the San Fran co receipts for the week were the nallest of the entire year. Nor was here any falling off in the demand, except as it was disturbed by the natural inclination of the retailer to hold off when the market is dropping.

When a drop in the market results naturally from an excess of supply over demand, practically every wholesaler has a surplus and they all try to sell their surplus on the Exchange in order to get rid of it. Under this condition nobody is anxious to buy, so the price drops to the point where buyers are willing to take on the surplus.

Was this the case the past week? Emphatically, no! There were few sellers of extras and comparatively few were offered on the Exchange.

What, then, was the cause of the drop? It had all the earmarks of a bare-faced raid, engineered with a double purpose—to get eggs at low prices for shipment in time for the eastern Christmas demand, and to scare the holders of the remaining storage eggs into selling them cheap to the raiders. Then if the raid succeeded, the price could be put up with resulting profit to the new owners.

Early in the week the word was passed "on the street" that the market was going down to 50 cents (it was then 67½). It was even stated how much the drop would be from day to day. The buyers, being thus "tipped off," of course held back on the Exchange and waited till the two or three sellers offered the market down toward the expected point. Under these circumstances, it did not take many sales to put the price down, because the buyers, being aware of the program, only bought enough to barely last them from day to day.

As usual in such instances, the real raiders did not actively appear. They operated through one or two other men who carried out the program. It was all done exactly as arranged, except that when the price was put down to 50 cents on Friday it did not stick there because, on account of the demand for week-end supplies (there being no Exchange session on Saturdays), the situation rather got away from the program, and after touching 50 cents this demand brought the price up again to 52.

Pullets naturally followed extras down the incline until Friday, when the week-end demand forced them up also.

Knowing what was afoot, we did not sell any extras on the Exchange all week, preferring to ship our surplus East, where the market, though weaker, still shows a large margin of profit over the local price.

Our association average prices returned to the members for the past week's eggs of course show a heavy loss as compared with the quotations. Our actual sales for the week were above the average of the net quotations, but the heavy loss on the inventory carried over from one week to another brought down our average.

The moral of this raid on the market scarcely needs to be pointed out, but there is one thing we do want to say about it, which is, that as long as the Dairy Exchange quotations continue to be made by the last sale of the day of the last bid or offer, just so of thing be p ds, the prese ays into speculators a est of cer Ma General of Ce California.

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Los Angeles Markets

Los Angeles, December 21, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price, 46 cents.

Dec.	14	15	16	17	19	20
'21	48	48	48	48	48	46

CHEESE

Brokers' prices:
California flats, 21@23.

EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 54; case count, 51; pullets, 48.

Dec.	14	15	16	17	19	20
'21	58	58	58	58	54	54

POULTRY

Price to producers: Hens, 27; colored, 30; broilers, 36-40; roasters, 29; old roosters, 16; fryers, 33; ducks, old, 20; ducklings, Pekin, 3½ up, 28; others, 28; geese, 28; turkeys, live, young tom, 40; dr., 47; old, live, 35; dr., 43; hens, live, 40; dr., 47; small hen and tom, 15; squabs, 60@70. Belgian hares, 12@16; old, 8.

LIVESTOCK

Los Angeles, Dec. 20. Weighed and delivered off cars, without food or water:
Hogs (hard grain fed), 125 to 175 lbs., 8.00; 175 to 225 lbs., 8.50.
Cattle (on foot, gross weight): Steers, good, 6.50; medium, 6.00; cows, good, 5.00; medium, 4.50; bulls and stags, 3.00; calves, 125 to 150 lbs., 8.00; 150 to 225 lbs., 7.00.
Sheep: Ewes, 3.50@4.00; lambs, 7.00@7.50.

HIDES AND PELTS

Quotations furnished by California Hide Corporation for stock delivered to their warehouse at 1960 Santa Fe avenue.

Green salted hides—No. 1 steers, 7½ per lb.; No. 1 cows, 6½ per lb.; No. 1 bulls, 5½ per lb.; No. 2 hides, 1½ less per lb.; grubby hides, 1½ less per lb.; kosher hides, 1 less per lb.. glue hides, 1 per lb.; No. 1 horse hides, over 50 lbs., 1.75 each; No. 1 horse hides, 40 to 50 lbs., 1.25 each; No. 1 horse hides, 30 to 40 lbs., 75 each.

Green hides—No. 1 steers, 6½ per lb.; No. 1 cows, 5½ per lb.; No. 1 bulls, 4½ per lb.; No. 2 hides, 1½ less per lb.; kosher hides, 1 less per lb.

Calfskins and kipskins—No. 1 calfskins, under 15 lbs., 12½ per lb.; No. 2 calfskins, under 15 lbs., 9 per lb.; No. 1 kips, 15 to 25 lbs., 10 per lb.; No. 2 kips, 15 to 25 lbs., 8 per lb.; kosher skins, 1 less per lb.; glues, 1 per lb.; slunks, 20@40 each.

Dry flint hides—No. 1 hides, 16 lbs. and up, 10½ per lb.; No. 1 kips, 6 to 16 lbs., 11 per lb.; No. 1 calfskins, under 6 lbs., 11 per lb.; No. 2 hides and skins, 2 less per lb.; glue hides and skins, 2 per lb.

Pelts—Large, long wool, 50@80 each; medium, 25@50 each; short wool and shearing, 10@25 each.

Goat skins—No. 1 common, 10@50 each; No. 2, 5@10 each; badly damaged and small kids, worthless.

Tallow—No. 1 white and hard, 5 per lb.; No. 2, 4 per lb.; No. 3, dark and greasy, 1@3 per lb.

Wool—According to quality and condition, 6 per lb. and up.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, December 20, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.

Potatoes: Movement slow, market weak. Lugs mostly 90@1.00. Stocktons: Burbanks, per cwt., best, special brands, 2.50@2.75; others, 2.25@2.50. Idahos: Russets, best, 2.25@2.50; Rurals, mostly 1.90@2.00; few, 2.50; bakers, 3.00. Locals: White Rose, 2.00@2.25. Sweet potatoes: Market firm. Locals: No. 1, best, 90@1.15 per lug; per cwt., No. 1, 2.75@2.90; No. 2, 1.50@1.75.

Onions: Demand moderate, market firm. Stocktons: Per cwt., White Globes, best, cold storage stock, mostly 6.75@7.25; poorer, 6.50; browns, best, 4.75@5.25; poorer, 4.25@4.50; per lug, Whites, best, 2.00@2.25; poorer, 1.85; Browns 1.50@1.60; poorer, 1.25. Spanish sweets, best, mostly 6.25@6.50 per cwt.

Garlic; Lb., 9@11.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock, December 20, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Artichokes: Doz., 1.60@1.75.

Beans: Demand good, market strong. Per lb., string, 20@22; limas, 16@18.

Bunched vegetables: Per doz. bunches: Turnips, 50@60; beets and carrots, 65@75; radishes, 30@40; parsley, 20; spinach, 35@40.

Cabbage: Market steady. Per field crate, mostly 2.75@3.00; poorer, 2.25@2.50.

Cauliflower: Market steady. Best, mostly 2.75@3.00; poorer, 2.25@2.50.

Celery: Market firm. Local, per cr., mostly 3.25@3.50; few, 3.75; poorer, 3.25@3.50.

Cucumbers: San Diego: Market steady, mostly 2.00@2.50; poorer, 1.00@1.75; local hothouse, doz., 1.25@1.65.

Lettuce: Demand moderate, market firm. Locals: Field crates, best, 2.25@2.50; poorer, 1.50@2.00.

Parsnips: Lug, 85@90.

Oyster plant: 50 doz. bunches.

Peas: Market firm. Local, best, 16@18; poorer, 12@14.

Peppers: Locals: Bells, green, per lb., 12@14; chili, 10@12.

Rhubarb: Mostly 1.00@1.15.

Squash and pumpkins: Market steady, movement moderate. Banana, 1@1¼ lb.; Hubbard, mostly 1¼ lb.; cream squash, 2; Italian, lug, 1.50; pumpkins, 1@1½ lb.; Imperial Summer, 2.00 per 4 basket crate.

Sweet anise: 60 doz.

Tomatoes: Market firm on good stock. Locals: No. 1, per lug, mostly 2.50@3.00; poorer, 1.00@2.25.

FRESH FRUITS

Apples: Demand and movement moderate, market steady. Locals: Romes and King Davids, 4@6; few best Delicious, Yucaipa section, 6@8 lb. Watsonville: Fancy, 3½ and 4 tier, Bellefleurs, 1.60@1.75; poorer, 1.50; 4½ tier, 1.40@1.50; B grade, 4 tier, 1.40@1.50; loose, per lb., 3½@4. Idahos, Washingtons and Oregons: Jonathans, extra fancy medium to large sizes, 3.00@3.50; fancy, 2.85@3.00. Oregons: Spitzenburgs, medium to large, extra fancy, mostly 2.60@2.85; fancy, 2.50@2.65.

Avocados: 50 lb.

Cranberries: Market steady. Massachusetts: Late Howes, 25.00 bbl.; New Jersey, Late Howes, 27.00@28.00 bbl.

Dates: 25@27.

Grapes: Demand good, market steady. Per lb., Malagas, 12; Red Emperors, 10@11.

Melons: Demand light, 2@2½ lb. for good stock.

Olives: Ripe, lb., 4@6.

Pears: Anjous, per lb., 8@10; Bartletts, 4@5; few 6.

Persimmons: Lb., 10@15.

CITRUS FRUITS

Grapefruit: Market steady. Californias, northern: Packed, box, 3.00@3.50; small, 2.50; Imperial Valley, 5.00@5.25. Arizonas: Seedless, 4.00@5.00, according to size and quality.

Lemons: Demand and movement slow, market weak. Locals: Special pack, mostly 4.00; market pack, 2.50@2.75; loose boxes, 1.50@2.00; poorer, 1.00.

Oranges: Demand moderate, market steady. Navels, special brands, 216s to 126s, fancy, 5.25@5.75; choice, 4.00@5.00; orchard run, 4.00@4.25. Valencias, market pack, 3.00@4.50, according to size and quality. All varieties culls, field boxes, 2.00@2.50; poorer, 1.50. Tangerines: Demand and movement good; best, 10@11; poorer, 9.

HONEY

The general situation shows little change over that prevailing two weeks ago. Stocks continue to decrease and are much lighter than were those at the corresponding period last year. Demand is reported as light. Due to light supplies, the market, although quiet, has a healthy tone. Alfalfa honey is in heavier supply than white honey. Quotations per pound in carlots or less than carlot quantities, f. o. b. California points: White orange blossom, nominally 12@12½; white sage, 11@12; light amber sage, 8½; light amber alfalfa, 6½@6¾. Growers are said to be asking 10@13 per pound for white orange blossom and 6½@7 for light amber alfalfa. Beeswax is in fair local demand at present at 20@25, mostly 22 per lb. to the beekeepers by bee supply houses for use in making next season's foundations. Demand in the East is lacking, as imported wax offers too great competition.

GRAIN AND FEEDS

Grain Exch. price bid Dec. 20:
Barley: 100 ton lots, Dec. del., 1.32.
Milo: 100 ton lots, Feb. del., 1.35.

HAY

Alfalfa Growers of California report:

Continued good demand with lighter offerings kept market strong in all parts of the state. Prices show a small advance. The demand centers on the better qualities.

There were 1,490 tons of grain and alfalfa hay received on the Los Angeles tracks the week ending December 17, with 310 tons held over.

Prevailing prices last week, delivered in the vicinity of Los Angeles:

No. 1 dairy alfalfa	23.50
Standard	18.50

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats	22.00@28.00
Barley	18.00@24.00
Alfalfa, Rabbit	24.00@28.00
Alfalfa, No. 1 Dairy	20.00@22.00
Standard	16.00@18.00
Straw	12.00

San Francisco Markets

San Francisco, December 20, 1921.

BUTTER

Extras	47

Dec.	14	15	16	17	19	20
'21	48	48½	48	....	47½	47

CHEESE

Dairy Exchange quotations:

California Flats	24½
California Y. A.	30
Oregon Trips	31
Oregon Y. A.	33

EGGS

Dairy Exchange quotations:

Extra	60
Extra Firsts	57
Extra Pullets	50
Undersized No. 1	48½

Dec.	14	15	16	17	19	20
'21	56½	55	59	....	57½	60

POULTRY

Wholesale prices are:

Two carloads of Eastern geese arrived for holiday market.

Poultry: Young chickens, Leghorns, 1 to 1½ lbs., 35@38 per lb.; above 1½ lbs., 35@38; 2 lbs. and up, 26@27; heavy breeds, 26@28 per lb.; staggy roosters, 20@25 per lb.; old roosters, Leghorns, 16 per lb; heavy breeds, 18 per lb.; hens, Leghorns, large, 25@28 per lb.; small to medium, 23 per lb.; heavy breeds, 28@30 per lb.

Turkeys: Dr. fy., 50@53; choice, 45@48.

Ducks: 22@25 per lb.

Geese: 25@30 per lb.

Squabs: Fancy, 50@55; do, common, per dozen, 3.50@4.00; old pigeons, 3.50 per dozen.

Belgian hares: Live, 16@18 per lb.; do, dressed, 25@28 per lb.

LIVESTOCK

Western Meat Co. quotes:

Weighed off cars at our yards in South San Francisco:

Cattle: No. 1 steers, 6@6½; do, second quality, 4¾@5¼; cows and heifers, No. 1, 4¾@5¼; do, second quality, 4@4¼; bulls and stags, 3@3½.

Calves: Light weight, 7½@8½; heavy, 6@6½.

Sheep: Wethers, 4@4½; ewes, 2¾@3¼.

Lambs: 7½@8.

Hogs: Hard, fat, grain fed, weighing 125 to 200 lbs., 8; 200 to 250 lbs., 7; 250 to 300 lbs., 6; light sows, 6½; heavy, 5.

California Farm Bureau Marketing Association reports:

No.	Hogs	Av. Wt.	Dock	Price
Turlock, December 13				
99		166	.....	7.65
26		222	.....	6.65
1		150	.....	5.00
1 car, 22 consignors, $1,642.54.				
Fresno, December 16				
12	feeders	71	.....	8.00
9		273	.....	7.85
80		192	.....	7.75
86		179	.....	7.75
38	feeders	65	.....	7.50
1	stag	350	.....	5.25
1	crippled	.....	.....	12.99
2½ cars, 13 consignors, $2,911.25.				
Bakersfield, December 17				
47		170	.....	7.75
9		219	.....	7.60
59		223	.....	7.25
1		610	.....	6.00
2		335	.....	6.00
6		311	.....	5.50
1	stag	240	.....	5.00
10		300	.....	5.00

2 cars, 10 consignors, $1,414.72.

Total for the week, 5½ cars, 45 consignors, $5,968.51.

These prices are f. o. b. shipping point to the farmer, while the prices quoted by the newspapers are off cars at their packing houses.

POTATOES AND ONIONS

Potatoes: Street prices: River, fancy, 1.75@2.00; few fancy higher; Oregon Burbanks, 2.25@2.60; Salinas, 3.25@3.50; netted gems, 2.65@2.75; British Queens, 2.25@2.35. Sweets, 3.25@4.00 per cwt.

Onions: Australian, brown, 4.25@4.75; crystal, 3.00; green, 2.00@2.25 per box.

Garlic: 2@5 per lb.

VEGETABLES

Wholesale selilng price:

Artichokes: 18.00@20.00 cr.

Beans: Lb., 17½@22½.

Brussels sprouts: 5@6 per lb.

Carrots: Sk., 1.00@1.25; fy., 2.50@2.75; do, bunch, 15@30.

Celery: 1.00@1.75 cr.; fy., 2.00@2.25; bunch, 10@20.

Cucumbers: Hothouse, 2.00@2.50; Southern, 1.25@2.00; do, English, 2.00@2.25.

Eggplant: So., lb., 3@6.

Endive: 40@75.

Lettuce: Iced, 2.25@2.75 cr.; dry, 1.00@1.75.

Olives: Lb., 5@7.

Peas: Lb., 17½@20, large; 12½@15, small.

Peppers: 12½@15; chili, 15@17.

Rhubarb: Southern, box, 1.50@1.75.

Squash: Southern, 1.75@2.25 per lug; cream, 75@1.00 per lug box; Hubbard, 75@1.15 per sack.

Tomatoes: Southern, 1.50@1.75; L. A. fcy., 2.50@2.75 lug.

FRESH FRUITS

Apples: California: Bellflower, nominal; Newtown Pippins, 3½ and 4 tier, 1.75@2.15; 4½ tier, 1.65; B grade, 1.25@1.35; Spitzenburg, 4 tier, 1.40@1.60; 4½ tier, 1.15@1.35. Northwestern: Spitzenburg, extra fancy, 2.50@2.75; fancy, 2.25@2.50; choice, 1.75@2.00; Rome Beauty, fancy, 3.00@3.25; choice, 2.50@2.75; banana, extra fancy, 3.25@3.50; fancy, 2.75@3.00; Delicious, 2.75@3.00; Jonathan, extra fancy, 2.00@2.50; fancy, 1.75@2.00; Lady apples, 2.50@3.10.

Avocados: California, doz., large, 5.00@6.00; small, black, 2.50@3.50.

Bananas: Eastern, 6@7; Hawaiian, 6@7½.

Cranberries: Box, 6.00@6.50; Cape Cod, 27.50 bbl.

Melons: Casabas, 1.00@1.50 per doz.

Pears: Winter Nellis, 2.50@3.25 box; Beurre Clairgeau, 2.00@2.50; De Anjou, 2.00@2.50; Beurre Hardy, 1.50@2.00; do, fancy, 2.50@3.00.

Persimmons: 1.25@1.50 box.

Pineapples: 4.00@6.00.

Pomegranates: Box, 1.25@1.50.

Rhubarb: Box, 1.50.

CITRUS FRUITS

Oranges: Valencias, nominal. Lemons, 3.00@4.50 per box; lemonettes, 1.50@3.00 per box. Grapefruit: 2.50@3.50 per box for California; do, Arizona, 4.50@5.00; do, choice, 4.00@4.50. Tangerines, 3.50@4.00 per box; do, large, 5.00@5.50.

DRIED FRUITS

Apples, 1921 (Packers' Quotations):

Choice (in 50s)	10¼
Extra choice (in 50s)	10½

Apricots, 1921 (California Prune and Apricot Growers) Bulk Basis:

	Sunsweet	San Joaquin
Standard	12	10½
Choice	16	13½
Extra Choice	17	14½
Fancy	19	15½
Extra Fancy	21	....

Peaches, 1921 (California Peach and Fig Growers), Sept.-Oct.-Nov. shipment, guaranteed to January 1:

	Yellow	Muir
Slabs (in 50s)	@9	...@...
Standard (in 50s)	@9¼	...@9¼
Choice (in 50s)	@9 7/8	...@...
Fancy (in 50s)	@11	...@12
Extra fancy (in 50s)	@12	...@13
Practically Peeled—		
Standard (in 50s)	@10¼	...10½
Choice (in 50s)	@10 7/8	...@...
Fancy (in 50s)	@12	...@13
Extra fancy (in 50s)	@13	...@14

Cartons, 30 11-oz., per case	3.10
Cartons, 60 11-oz., per case	6.00
Cartons, 24 2-lb., per case	6.50
Cartons, 10 5-lb., per case	6.60

Figs, 1921 (Cal. Peach and Fig Growers), Sept.-Oct. shipment, guaranteed to Jan. 1:

White—	
Standard (in 50s)	6½
Choice (in 50s)	8
Fancy (in 50s)	10½
Bricks, 12 No. 10s	1.10
Bricks, 24 No. 8s	1.80
Bricks, 50 No. 6s	2.80
Bricks, 70 No. 4s	2.95
Layers, 10-lb., 4-row	1.60
Layers, 10-lb., 5-row	1.40
Calimyrna—	
Standard (in 50s)	7½
Choice (in 50s)	10½
Fancy (in 50s)	13
Bricks, 24 No. 8s	2.05
Layers, 10-lb., 6-row	1.90
Black—	
Standard (in 50s)	6
Choice (in 50s)	8
Fancy (in 50s)	11

Raisins, 1921 (Cal. Assoc. Raisin Co.):

Sun-Maid Raisins:

Muscats: 36 15-oz. cartons, seeded, 14¾ lb.; 25-lb. boxes, bakers' seeded, 13 lb.; 25-lb. boxes bakers' seeded, 13½ lb.

Muscats: 25 1-lb. boxes, 2-crown loose, 13¾ lb.; 25 1-lb. boxes, 3-crown loose, 13¾ lb.; 25 1-lb. boxes, 4-crown loose, 15 lb.

Thompson Seedless: 48 15-oz. cartons, unbleached, recleaned, carton, 16 lb; 25-lb. bulk 14½; 25-lb. bakers' graded, unbleached, 17; 25-lb. boxes, choice, sulphur bleached, 18; 25-lb. extra fancy, sulphur bleach, 19; 25-lb, oil dipped, 15½; 25-lb. soda dipped, 15½.

London Layer Raisins: 3-crown London layer: 20-lb. boxes, $3.50 per box; 10-lb. boxes, $1.85; 5-lb. boxes, $1.00.

Clusters: 20-lb carton, clusters, $4.00 per box; 12 2-lb. carton, clusters, $4.80; 4 5-lb. cartons, clusters, $5.50 5-lb. carton, Imperial clusters, $1.50; 80-lb. vineyard run layer, $12.50.

Sultanas: 25-lb. box unbleached, recleaned, 13½ per lb; 25-lb. box, soda dipped, 14½; 25-lb. oil dipped, 14½.

Black Grapes: 25-lb. boxes black grapes, 14½ per lb.

Old Crop:

Muscats: 36 16-oz. cartons, seeded, 14½ per lb.; 25-lb. bakers' seeded, 13; 1-crown loose Muscats, 13½.

Sultanas: Sultans, unbleached, recleaned, 13½ per lb.

Thompson Seedless: Soda dipped Thompsons, 15 per lb.; oil dipped Thompsons, 15; black grapes, 14½.

Prunes, 1921 (Cal. Prune & Apricot Growers): Sunsweet Quality, bulk basis: 30-40s, 9¾; 40-50s, 8¼; 50-60s, 6¾, 60-70s, 6¼; 70-80s, 80-90s, 90-100s, 5½. Growers Brand ¼c less on all sizes. All prices subject to change at any time.

BEANS

Below California Bean Growers Association shippers' prices choice recleaned:

Large Whites	5.00
Small Whites	4.75
Pinks	4.50
Mexican Reds	4.40
Red Kidney	6.40
Henderson Bush	6.25
Cranberries	6.75
Bayos	5.25
Blackeyes	4.40

NUTS

California Almond Growers Exchange's prices:

Languedoc	14½
Hard Shell	11

Manchurian walnuts, 17.
Chinese peanuts, fy., 10.
Pecans, 25.

HAY AND FEED

California Alfalfa Growers report:

Prevailing prices last week, f. o. b. San Francisco:

No. 1 Dairy Alfalfa	16.00
Standard	15.00

A. W. Scott Co. says:

Receipts past week, 776 tons as compared with 522 previous week. Market has been steady, trade fairly active. Low grades have been doing better. Local trade quiet but export and coastwise heavier. Interior trading more active. Continued cold, dry weather has forced feeding in almost all sections and the demand has greatly increased chiefly for stock and dairy hay of all kinds. Alfalfa is most active.
red milo, 1.42½@1.45.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the markets in San Francisco (for prices to consumers, charges of switching, cartage, commission and handling expenses must be added, according to conditions).

Wheat hay No. 1	17.00@19.00
Wheat hay, fair grade	14.00@17.00
Tame oat hay	15.00@18.00
Wild oat hay	11.00@13.00
Alfalfa hay	13.00@16.00
Stock hay	9.00@12.00
Straw	10.00@12.00
Rolled Barley	29.00@30.00
Ground Barley	31.00@33.00
Oats, Rolled Feed	34.00@36.00
Bran and Millrun	25.00@28.00
Middlings	41.00@44.00
Coconut Meal	23.00@26.00
Alfalfa Meal	21.00@23.00
Cottonsed Meal	40.00@42.00
Sugar Beet Pulp	27.00@29.00
Molasses Tanks	21.00 Barr. 25.00
Milo Maize	31.00@40.00
Cornmeal and Cracked Corn	38.00@41.00
Scratch Feed	40.00@43.00

GRAIN

Sales on Grain Exchange:

Barley: Feed, 1.25@1.30; shipping, 1.30@1.45.

Wheat: Mill, 1.85@1.95; feed, 1.85@1.95.

Red Feed Oats: 1.55@1.60; seed, 1.75@2.10.

Corn: California yellow, 1.45@1.50; eastern yellow No. 2, 1.37@1.40; No. 3, 1.36@1.38; No. 3 kaffir, in bulk, 1.43@1.45; white Egyptian, 1.72½@1.77½; California red milo, 1.42½@1.47½.

Citrus Markets

Los Angeles, December 21, 1921.

The holiday trade was very satisfactorily supplied with Navels and they have found a fair demand generally at very reasonable prices. Central California shipping points are planning for cleaning up on Navels which will reach the market soon after the holidays and meet the demand until the larger portion of the Southern California crop is ready for shipping about the middle of January.

Foreign lemons are arriving in very limited quantity but the demand is light and price not the best.

Shipments

Shipments of citrus fruits to date since November 1, 1921, Southern California: Oranges, 943 cars; lemons, 689; total, 1,632. To same date last season: Oranges, 1,038; lemons, 595; total, 1,633. From Central California to date this season: Oranges, 3,647; lemons, 20; total, 3,667. To same date last season: Oranges, 3,283; lemons, 27; total, 3,310. From Northern Califor-

nia to date this season: Oranges, 322; lemons, 5; total, 327. To same date last season: Oranges, 271; lemons, 2; total, 273.

AT THE AUCTIONS

December 13
New York: 14 or. Nav. 4.95@8.00, Val. 3.00@3.80.
Boston: 8 or., 2 lem. Nav. 4.85@6.55, lem. 4.50@5.30.
Cleveland: 6 or., 1 lem. Nav. 4.25@6.45, lem. 90.
Pittsburg: 3 or., 1 lem. Nav. 4.60@5.30, lem. 3.25@3.90.
St. Louis: 3 or., 1 lem. Nav. 4.80@5.25, lem. 2.25@2.80.
Cincinnati: 1 Nav. 5.50@5.85.
Philadelphia: 1 lem. 4.25.

December 15
New York: 11 Nav. 3.70@8.00.
Boston: 5 or., 1 lem. Nav. 4.85@6.30, lem. 3.90@5.30.
Pittsburg: 3 Nav. 4.20@6.65.
St. Louis: 4 Nav. 4.55@5.25.

December 16
New York: 9 or., 1 lem. Nav. 3.75@7.50, lem. 3.50@3.90.
Boston: 7 Nav. 4.50@6.25.
Pittsburg: 4 or., 1 lem. Nav. 3.65@5.85, lem. 3.25@3.75.
Cleveland: 7 or., 1 lem. Nav. 3.90@7.10, lem. 3.80@4.65.
St. Louis: 5 or., 1 lem. Nav. 4.35@4.90, lem. 2.25@3.15.
Philadelphia: 1 Nav. 6.00@6.70.
Cincinnati: 1 or., 1 lem. Nav. 5.10@5.45, lem. 4.20@4.60.

December 19
New York: 32 or., 2 lem. Nav. 3.05@7.90, lem. 4.10@6.35.
Boston: 20 Nav. 3.70@6.35.
Pittsburg: 10 or., 1 lem. Nav. 4.40@6.20, lem. 4.20@4.95.
St. Louis: 15 or., 1 lem. Nav. 3.00@5.00, lem. 2.60.
Cincinnati: 2 or., 3 lem. Nav. 4.00@4.75, lem. 2.10@3.75.

December 20
New York: 21 or., 1 lem. Nav. 3.55@7.70.
Pittsburg: 3 or., 1 lem. Nav. 4.40@5.80, lem. 3.40@4.10.
St. Louis: 8 or., 1 lem. Nav. 4.25@5.05, lem. 2.85@3.80.

AUSTRALIAN SALTBUSH

In United States department of agriculture bulletin No. 617, R. McKee deals in detail with "The Australian Saltbush (Atriplex semibaccata) in the United States." A summary of the chief points follows:

The Australian saltbush (Atriplex semibaccata) was introduced into the United States some 25 years ago and was distributed throughout the arid and semi-arid regions. In practically all cases the plantations resulted in failure, and only along the coast, in the San Joaquin and Imperial Valleys, and in the Salt River, Yuma and Santa Cruz Valleys of Arizona has it become well established. The plant is a perennial and prostrate, forming a dense mass from 6 to 12 inches thick. The minimum temperature of the regions in which it is naturalized is 19 degrees Fahrenheit; the mean annual rainfall in regions where it is possible to cultivate without irrigation ranges from 9 to 16 inches. While the Australian saltbush can grow on practically all types of soil it is found in but few regions where the soil does not contain an appreciable amount of alkali. It is quite drouth resistant, but apparently not to the extent of some other species of Atriplex and other desert plants.

The chemical composition of the leaves and stems of A. semibaccata and of the hay therefrom shows respectively: Water, 78.03 and 7.05 per cent; ash, 4.58 and 19.37 per cent; crude protein, 2.75 and 11.64 per cent; crude fibre, 3.75 and 15.83 per cent; nitrogen free extract, 10.41 and 44.05 per cent; crude fat, 48 and 2.01 per cent. The stems and leaves have therefore an unusually high content of salt (especially sodium chloride) and comparatively high percentages of protein, nitrogen free extract, and crude fat.

In regions which offer favorable conditions, semibaccata is quite aggressive, and this adds to its value as a range plant. On account of its high salt content it is not as palatable as most ordinary forage crops, but it is eaten readily by sheep, goats, cattle and horses when other feeds are scarce. To be of the greatest value it must be supplemented with other feeds.

The greatest value of this plant is to supply succulent feed in late summer and to furnish a reserve supply. It can be used as a soiling crop, but has little value as hay. Seed is produced freely, but harvesting is expensive. For range purposes A. semibaccata should be sown in the autumn, scattering the seeds broadcast in favorable locations and leaving it to take care of itself. In sowing with a view to cultivation, the best time is in the spring and care should be taken to cover the seed only enough to ensure moisture conditions favorable to germination.

A NATIONAL PROBLEM

Victor Murdock of the federal trade commission, in speaking of the agricultural industry of the country, recently made the following remarks:

All men are taking more thought of the farm problem.

The basic industry is agriculture. Bread and butter is the foundation of material thrift, and it has also to do with the spirit.

Six startling features of the farm problem have risen to inconvenience those with ready remedies.

First: Tenantry, which is not best for agricultural thrift, is increasing by leaps and bounds.

Second: In the richer regions farms are increasing in average size.

Third: Great areas of tillable land in tillable sections are not tilled.

Fourth: There is a measurable exhaustion of cheap available land in new states.

Fifth: The cities are gaining heavily in population at the expense of the country.

Sixth: The annual food reserves of the nation are gradually diminishing despite increased machine production.

One of the aids offered in the solution of the problem will not solve it. This is the essay periodically written by the city dweller urging the delights and advantages of the farm on his fellow citizens.

Another aid that will not solve it is the occasional easy preachment of the city economist to the farmer that the farmer has all the best of it.

Still another aid that will prove equally impotent is the city theory of a multiplication of creature comforts and social delectations in rural districts.

The nation is not coming to a solution of the problem in any such easy fashion. The nation will not come to any solution until it radically reforms its concept of the farm and the farmer.

Here are some things which the nation, as a whole, could helpfully ponder:

One: Farms are not merely fenced fields which respond to cultivation. Farming is a profession which must be learned.

Two: Farms do not yield through the device of applying labor cheerfully to fertile soil. There is another essential ingredient—working capital. For farming is not only a profession; it is also a business.

Three: Farms do not show profits by adding together at the end of the season the sales realizations of their products. There are material and labor costs, insurance, taxes, hazard, and depreciation in the profit computation. For farming is not only a profession and a business; it is also the most intricate accountancy.

PURPLE VETCH

Vicia atropurpurea, or the purple vetch, is an annual; it was brought into the United States from Naples by the office of foreign seed and plant introduction in 1899, and all the introductions since then have been of the same variety. The crop has been tested most extensively in the Pacific Coast States, where it has given very favorable results. In California it has proved one of the best crops, if not the best crop for green manure. In West Oregon, and West Washington, it can be grown with success for seed, and at the present time there is a limited acreage under purple vetch. It requires similar conditions to those needed by the common vetch (Vicia sativa) and the hairy vetch (Vicia villosa), but is a little resistant to cold. Under average conditions, however, the purple vetch will stand a temperature of about nine degrees Fahrenheit; where the temperature does not fall below this, it can be sown in the autumn; where the cold is greater, it is advisable to sow in spring. It is well to inoculate the soil when the crop is sown for the first time. The average seed yield is 10 to 12 bushels per acre. When grown for green manuring, seed or hay purposes, purple vetch should be seeded at the rate of 60 to 80 pounds per acre. It is very nourishing and affords good pasturage for all kinds of stock, as well as making excellent hay. The only insect that has attacked Vicia atropurpurea in the United States is an aphis which does serious damage to the field pea and common vetch.

POTATOES MENACED BY MOSAIC

A survey of the Western states conducted during the past summer by pathologists of the United States department of agriculture shows that unless adequate measures for the elimination of the mosaic disease of potatoes are taken immediately the work of potato seed improvement in the West will soon become extremely difficult, if at all possible. Being of an infectious nature, the disease is spread in the field throughout the summer by means of insects which carry it from diseased to healthy plants, and is also transmitted with the seed tubers from one generation to another.

There is no evidence that a plant once infected can recover and produce a healthy progeny at any time. On the contrary, the infected plants ordinarily tend to a very rapid deterioration, and under certain environmental conditions practicaly cease to produce tubers in the third or fourth generation. If only a partial weeding out of the worst cases is practiced, the situation may be somewhat improved, though not in all cases and by no means permanently. The mild and the medium stages of the disease left in the stock serve as perpetual sources of infection, and eventually the entire strain becomes diseased and is apt to "run out" completely.

It has been repeatedly demonstrated in the East that the average reduction of yield due to mosaic is about 30 per cent.

CUTTING FIREWOOD

A day's work with a buzz saw or drag saw will yield as much firewood as could be cut in many hard days' energetic work by hand and will effect a saving of labor or coal, or perhaps both, that is well worth considering, especially if there be timber available that is fit for fuel and not for lumber.

A great many farmers already have tractors or gasoline engines, and wood-sawing machines are comparatively inexpensive. One outfit can do the work for several families and may be bought in partnership or operated for hire.

The saw blade should be of ample size to cut through at one operation the largest piece of wood commonly handled. Blades from 24 to 30 inches in diameter are the most popular. A speed of 1200 revolutions for a 30 inch or 1500 for a 24 inch blade is recommended. A flywheel mounted on the saw mandrel will help to preserve momentum when the saw is going though the wood.

An engine of six to eight horsepower is sufficient for the heaviest wood, and one of four horsepower will suffice if only small poles and branches are to be cut. Garden tractors can be used very handily in this work.

BARLEY VARIETY TESTS IN SOLANO COUNTY

County Agent J. W. Mills of Solano County reports the results of a variety test with barley on the C. B. Kidwell ranch near Putah Creek, Solano County, last season as follows: Four Thousand, 16.6 sacks per acre, 95 pounds per sack; common, 17.5 sacks per acre, 94 pounds per sack; Tennessee Winter, 17 sacks per acre, 95 pounds per sack; Mariout, 23 sacks per acre, 103 pounds per sack.

In this case Mariout exceeded common in yield by five and one-half sacks per acre and weighed nine pounds heavier per sack. The grains were planted with a grain drill on February 28 and harvested July 1, 1921. Each plat was one-half acre in area.

ALIGNING THE TRACTOR.

Prof. John S. Glass of the Iowa state college offers some simple but valuable suggestions for setting the tractor for belt jobs.

Four operations are necessary to get the belt outfit set and ready for work. First, set the machine in convenient position so that the operators will not have to work in the dirt. Next, uncouple the tractor from the machine and drive forward away from it several feet. Then quickly cramp the steering gear to the right and proceed until the tractor has straightened out at right angles to its former position. Stop, reverse the drive, cramp the wheels to the left and back up until facing the machine again. This will bring the tractor into very close alignment. Further aligning may be done by backing away from the machine and then driving toward it, sighting along the edge of the pulleys.

Prof. Glass does not advise the use of a belt which makes the distance between pulleys less than 30 feet. A short belt is difficult to keep in good adjustment.

GARDEN TRACTORS

"The advantage of garden tractor work comes under the same head as all other tractor labor savers," says A. J. Piper, an extensive grower of onions and onion sets, writing in the Fruit Belt.

"You can do the same work and better work that would require several men to do by hand in the same length of time, which makes the labor saved the big item, and especially is this so at the present price of labor and with the difficulty of obtaining satisfactory labor at all for that kind of work."

THE NEW CASE

The new Case 10-18 tractor is being demonstrated at various places in California, always with increased interest. The new tractor has all the desirable features of the former models and includes an exhaust pipe to the left side and down, air cleaner, oil gauge, fenders, grousers, and is a sturdy piece of machinery throughout. One of the most desirable features connected with the ownership of a Case is the service afforded by the company's dealers and branches. They seek to give Case owners the very best of service and keep replacement parts close at hand at all times.

WEATHER REPORT

San Francisco, Dec. 17, 1921.

Stations	Rainfall Week	Rainfall Season	Rainfall Norm.	Temp Max.	Temp Min.
Eureka	.00	8.49	13.52	60	40
Red Bluff	.00	2.23	7.92	66	32
Sacramento	T	1.79	5.30	60	34
San Francisco	.00	2.42	5.98	68	46
San Jose	.01	2.11	4.46	68	34
Fresno	.00	.55	2.74	66	31
San Luis Obispo	.00	.72	3.79	82	34
Los Angeles	T	1.26	3.50	80	48
San Diego	T	2.21	2.11	74	49

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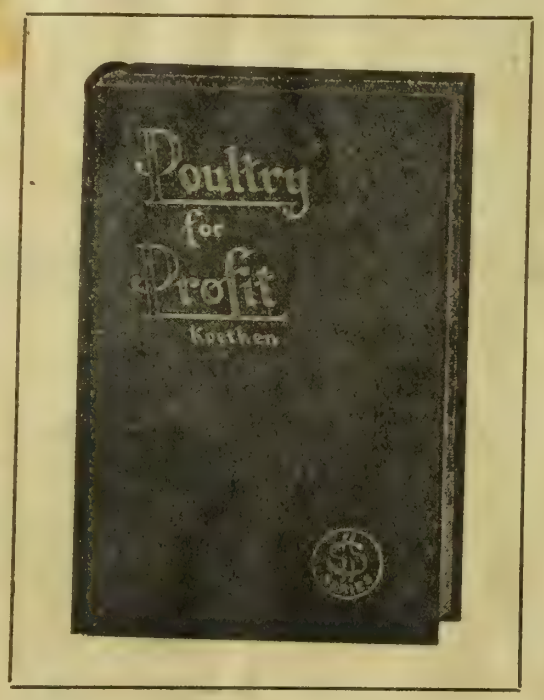

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By Jean A. Koethen

Gives more practical information on every branch of the Poultry Business and in a more concise and simple manner than any similar book published. With the knowledge gained by a study of this book, the necessity of practical experience is reduced to a minimum. By its guidance obstacles are overcome before it is too late.

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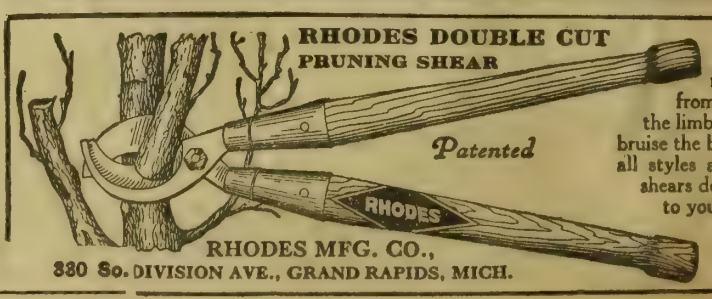

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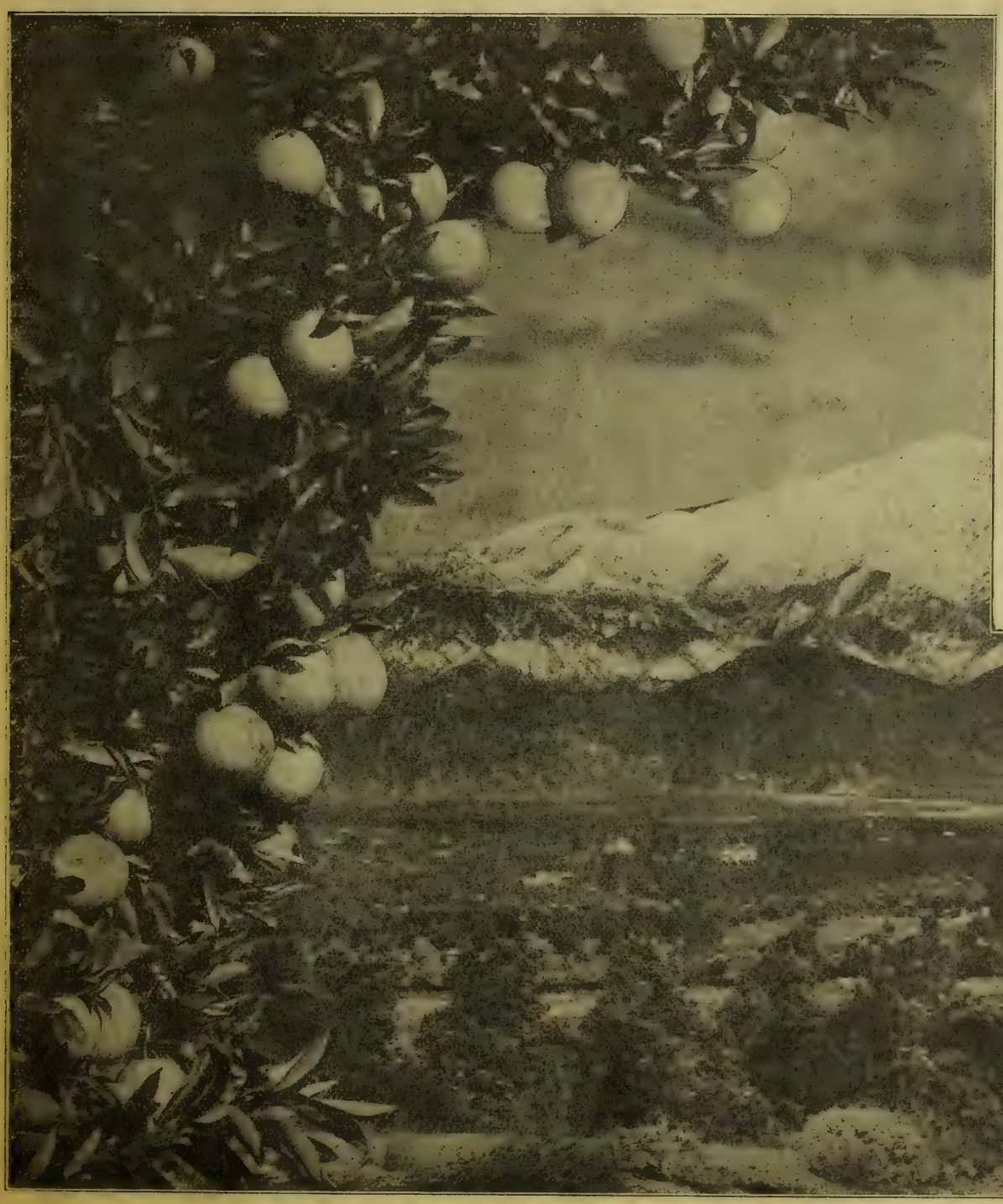
CALIFORNIA CULTIVATOR

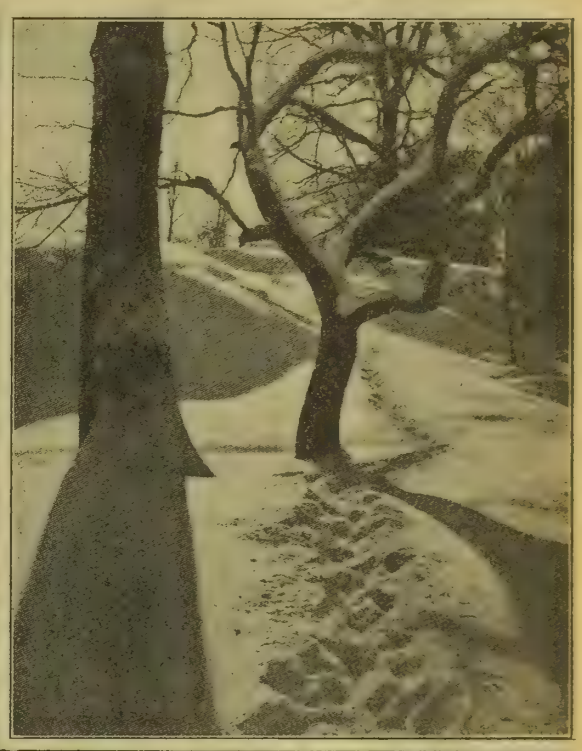
and LIVESTOCK and DAIRY JOURNAL

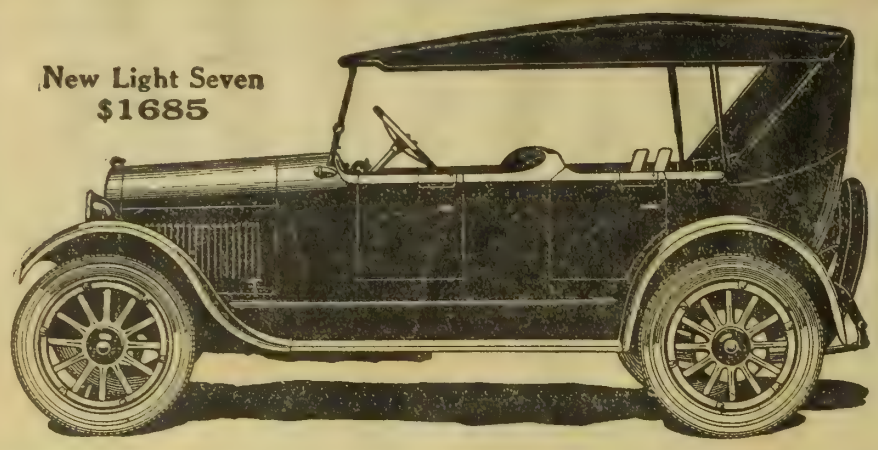
Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LVII — December 31, 1921 — No. 27

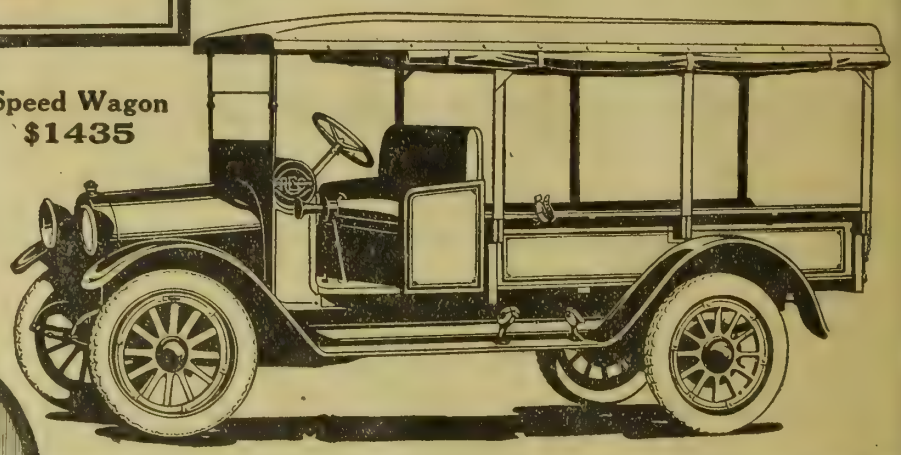
Own a Farm, Productive the Year Round--- Not Where Covered With Snow Half the Year







Prices are f. o. b. factory, plus Federal Tax



REO

These Two Reos Are Both Leaders

This New Light Seven Passenger Reo, recently announced, has found as enthusiastic a welcome on the farm, as was accorded that Mighty Speed Wagon.

And that is most gratifying to us, because we had in mind especially, our great clientele in "the country" when designing this latest Reo.

Families are larger as a rule—anyway the parties are—in the country than in the city.

So, although this New Light Seven has created a veritable sensation in the cities, its advantages are still more desirable to rural families.

From now on the Seven—and not the Five—will be the standard family car.

For, Reo engineers have proven that it is possible to build a car that will carry seven, and yet be as easy to handle on narrow roads or in "tight places" as was the Five.

And—here's the amazing point—at a price that is as surprising as is the quality and finish of the car.

Of that mighty Speed Wagon what can we add to what you already know?

It fits every business—meets every hauling and carrying need.

No matter what your work—no matter what the season or the roads or the loads—whether in everyday errands; carrying supplies or tools or implements to and from town; for transferring stock or feed; as a convertible "carry-all," passenger car, for the "hands":—

For every kind of farm hauling—this Speed Wagon will do your road-work quicker and cheaper.

Reo Motor Car Company, Lansing, Michigan

California Cultivator

Vol. LVII, No. 27 — Los Angeles, December 31, 1921 — One Dollar Yearly

Billion Dollar Agricultural Production State, 1929

By Geo. P. Clements, Los Angeles Chamber of Commerce

CALIFORNIA leads all the United States in agricultural producing counties. These are red letter days in California. We are all chirked up and filled with honest pride. The 1920 United States census has placed us in the limelight, and all our old agricultural boasts pale into insignificance in the light of facts. We have always known that our great state contributed more to the peace, happiness and prosperity of her citizens than any other state in the Union. Now we also know that acre for acre, we contribute a greater amount of food of a vastly greater variety to the people of the nation than any other state in the Union, and we have only just begun to get our gait.

Out of the 50 greatest food producing counties in the United States, California has 13 and Los Angeles heads the list with a $16,469,798 leeway over all comers. Out of the first five, California has three; out of the first ten, California has five; out of the first 17, California has eight. Surely this is just cause for exultation. They stand in place and production values as follows:

County	California Rank	Production Value	U. S. Rank
Los Angeles	1	$71,579,899	1
Fresno	2	55,110,101	2
San Joaquin	3	41,191,240	4
Tulare	4	34,036,167	7
Sonoma	5	32,300,623	8
San Bernardino	6	27,957,448	12
Orange	7	26,635,748	15
Santa Clara	8	26,135,980	17
Stanislaus	9	22,758,641	28
Sacramento	10	21,981,958	33
Riverside	11	20,253,304	40
Imperial	12	20,163,821	41
Ventura	13	19,160,414	50

A grand total of $419,265,344 out of the $1,341,700,000, or 30 per cent of the combined 50 counties.

Our nearest state rival is New York, with seven counties, the largest (St. Lawrence) taking 14th place on the census list. These seven counties have a total production of $127,570,755, or less than one-third that of California. It would seem, therefore, that we need have little if any apprehension that our laurels will ever be lifted or even questioned.

If we analyze these figures and their meaning the results are astounding. It is only within a decade that California has been considered seriously as an agricultural producing state. Nearly all our crops are totally dependent upon the artificial application of water for irrigation and scientific cultural usages in order to circumvent the shortcomings of nature to make them produce, and the area of our producing acreage is limited to but 4,095,245 acres of land out of a great state's total of 101,310,080 acres. Think what it will mean when our total 22,000,000 acres possible of irrigation are brought under cultivation and are producing. We may multiply our present state agricultural production by five and still be within the limits of conservatism.

This great victory is a victory of engineering and agricultural brains, a victory over barren plains, semi arid hills, and deserts. The glory is equally theirs, the reclamation and irrigation engineers, the state agricultural department, state and individual teachers and scientists, those redoubtable, adventurous heroes, the pioneer nesters, and the scientific California 20th Century farmer, the producer of today.

When you think that California produces commercially every flower, fruit, cereal and vegetable possible to a temperate zone, and many of the semi tropics, some idea of our great range in food production is possible, and when you realize that of the nation's food we furnish 100 per cent of the lima beans and almonds, 98 per cent of raisins and figs, 96 per cent of walnuts, 90 per cent of olives and dates, 85 per cent of grapes, 75 per cent of apricots, 70 per cent of plums and prunes, 59 per cent of asparagus, 55 per cent of the oranges, 34 per cent of all beans, 33 per cent of the lettuce, 31 per cent of peaches, 28 per cent of pears, 27 per cent of the cantaloupes, 26 per cent of the celery and potatoes, tomatoes, and hundreds of other vegetables, cereals, and animal products in greater quantities than we consume, our importance as an agricultural producing state stands out in bold relief.

We have just commenced. What will the future tell of California's agricultural production when we take into consideration that the East will not permit the California farmer to become a fixture. Every day some alluring figure is offered him for his farm, and he succumbs and sells to start afresh, and each transfer of land cuts down the production of that land, for California's agricultural usages necessary to maximum yields are uniquely her own and must be mastered by the new comer, and this takes time running into years. The Far East and Middle West farmer finds that his methods, the result of centuries of production in the East and Middle West, do not avail him anything in California. He must become a probationer.

What will it mean in figures of production when these 22,000,000 acres of agricultural land are settled and producing maximum crops upnder intensive scientific agricultural cultural methods? Can you grasp it? Our Californian soils under intensive farming offer the minimum sustaining acreages possible in America. Did we realize this more fully there would be less attempt made to indifferently farm great acreages, which results so frequently in loss, and a wide movement would be on towards the 10, 20, 40, and 80 acre farm under intensive farming methods.

It should be borne in mind that California's producing agricultural acreages represent a greater capital outlay per acre than any other place in America, and a greater investment and overhead in cost of production as well. These are the rocks upon which nearly all of our "back to the land" cooperative associations have been wrecked.

A bit of level free land means a farm anywhere else but in the Pacific Southwest. Land means nothing to us. We have 101,000,000 acres of it, some of the finest soils out of doors, yet but 22,000,000 acres have real agricultural value. Water for irrigation is the determining factor; with us an inch of water means so much agricultural land in California. Our Eastern and Middle West people are not used to taking into consideration these additional costs,—cost of water, cost of placing land ready for irrigation and cropping, cost of placing water on land convenient to irrigation of crops, and where horticulture is the object, cost of care of vineyard or orchard for three to nine years, according to variety, until in bearing. Where the capital is limited, this means great privation and frequently a longer wait, since unable to properly fertilize and care for, the time of commercial bearing may be greatly delayed. Many ways are employed to meet this wait —poultry, truck, small fruit, and berries, but they all tax the soul and need fortitude and grit to win.

We do not need to tell you what you may expect in acre returns. We do not believe that any maximum figures already arrived at will maintain. Anyway, minimum returns are the only ones for the farmer to speculate in, and his contemplated crop will determine for him his acreage necessary to sustain him. A city lot will produce 60 per cent of the living of the owner and a family of four at the average expenditure of two hours a day during growing season.

A back to the farm movement in California is to be deplored unless with sufficient capital and under the direction and advice of trained agriculturists thoroughly conversant with California's peculiar cultural requirements. The farmer in California must be an agriculturist. He must have private capital or long time credit. He must be a business man and his range of labors go beyond his fields—they must take in cooperative marketing, cooperative by-product manufacture, pest control and diverse other things. Even in the face of our wonderful showing it is safe to say but two-thirds of our production is represented in these colossal figures. At least one-third was waste. No other class of farmers face the losses such as the perishable fruits and vegetable growers. This is one of the economic questions before the farmers of the state—how to turn this loss into revenue—and it can be done. With half the world hungry and one-third of it in famine this annual loss must be turned into an imperishable by-product of available food.

Glancing back over our figures, California's agricultural production of 1919, $563,343,804, represents but the minimum production of but 4,095,345 acres or one-fifth of our possible agricultural area. It represents but two-thirds of our actual soil production under indifferent cultural methods in the main. Is it not within reason to predict that due to our rapidly increasing population our growing knowledge of scientific agriculture, our reclamation projects under way and contemplated, our attempt to check this terrific waste through by-product manufactories, that 1929 will show us figures more astounding? Yes, we should make California a billion dollar agricultural product producing state. Today we lead in agricultural production,

In scientific agricultural cultural usages.

In acre production yields.

In cooperative marketing of agricultural products.

In plant disease and pest control.

In no other country has the farmer a broader outlook.

In no other country has he the comforts and opportunities for happiness.

In no other country can he get the advice and encouragement so necessary to his success.

Our slogan should be a "Billion Dollar Agricultural Production State 1929."

Increased Efficiency Through Grinding of Feed

LIVESTOCK feeders often lose their profits by not utilizing all the feed produced on the farm. "Hogging off" is an economical way of harvesting a crop, economical from a labor standpoint but desperately wasteful of high priced crops on high priced land. Hence the silo, feed cutter and feed grinder have come to increase the efficiency of these coarser crops. Today there are combination cutters and grinders which take the ripened corn, ear stalk and leaf and produce a ground feed so finely divided as to be almost every ounce of it digestible. Not only may corn be used this way but milo, the kafirs, alfalfa hay, in fact, every kind of coarse or concentrated feed. Grinding does not increase the nutrient content but does make available all that is naturally in the stalk.

Of course there is the cost of harvesting and the cost of grinding, the latter running around $1.50 per ton. Carefully conducted experiments have proven the economy of this method of preparing feed. One who has made thorough tests of the efficiency of feed grinders writes:

"There is much nutriment in the heavy stalks, stems and vines that cattle refuse. Cattle do not refuse them because they are not nutritious, as some feeders think, but wholly because they are in a form they cannot easily assimilate. Cattle usually eat the leaves, blades, tops and fine portions, leaving the balance untouched. From 40 to 50 per cent of the feeding value of many crops is contained in the stalks, stems and vines. But cutting and grinding the stalks, corn, cane, alfalfa, clover, sheaf oats, hay or beans, peas, peanuts, etc., into a fine meal, cattle will relish the whole crop and 1300 per cent of the crop

(Continued on Page 687.)

Agricultural News Notes of the Pacific Coast

Northern California

Butte County has five olive mills operating.

Lassen County supervisors have appropriated funds for farm adviser.

A short course for prospective farmers will be given at Davis, January 2-7.

A mile and a half of the state highway south of Redding is open to travel.

A poultry registry association is planned by the Sonoma County farm bureau.

The celery shipping season is at its height. January 1 should see the end of the season

The postoffice has granted extension of Rural Route No. 1 from Orland, Butte County.

Solano County now has a farm home adviser. Miss Katherine Bennett has been appointed.

An auxiliary plant of the California Prune and Apricot Growers will be located at Colusa.

The United States forest service is sending an expert to Eldorado County to clean out the coyotes.

Lassen County has organized a farm bureau and will ask supervisors for funds to secure an agent.

A Butte County hop grower shipped last week seven carloads of hops to one English buyer. The price was 22 cents.

With a view to standardizing future apple plantings orchards of eastern Mendocino County have adopted the Jonathan.

Tehama County's supervisors are arranging with the County Fair Association to take over the fair grounds and buildings.

At the recent annual meeting of the Glenn County Fair Association it was reported that the last fair was a financial success.

Placer County fruit men held a banquet on the occasion of the distribution of the California Fruit Exchange on December 13.

Horticultural Commissioner Turner of Placer County reports an unusually busy month in pear orchards because of blight control work.

The state highway surveying crew has been making final survey of the Oroville-Quincy North Fork highway. 26 miles has been definitely located.

Yuba and Butte Counties report some damage to olives in exposed orchards. A warm rain immediately following the freeze reduced the damage.

Napa County shipped out 600 carloads of grapes during the season. It is estimated that about 1000 additional acres will be set in vineyard the coming season.

President Ramsay of the California Cattlemens Association in his annual address advocated operation of packing plants and retail meat stores by the association.

An irrigation district embracing 14,000 acres in the Fall River Valley, Shasta County, is being organized. Water will be secured by pumping from Fall River.

The Trinity national forest in 1922 will furnish grazing to 15,000 cattle, 24,600 sheep and goats, 600 swine. Applications should be filed with supervisors at Weaverville before February 28. Rates same as last year.

Central California

Wasonville had a community Christmas tree.

Porterville is shipping 50 to 75 carloads of oranges daily.

Many Stockton potato growers are storing in hope of better prices.

Lindsay won orange sweepstakes at the Valley Citrus Fair at Visalia.

A standard pack for Emperor grapes is being considered by a committee of growers.

There will be a farm bureau hog auction sale at Wasco, Kern County, January 7.

The Kern County farm bureau is planning to hold several farm accounting schools.

Lindsay's orange shipments are practically over. Estimated total is 1,700 carloads.

Tranquillity district, Fresno County, ranchers are to plant 500 acres to vines next year.

Fresno County supervisors are calling for bids on 16½ miles of highway and seven bridges.

Dr. F. T. Bioletti of the state university gave olive pruning demonstration at Strathmore, December 19.

Tulare County shipped 4,489 cars of fresh deciduous fruits in 1921 as against 3,324 cars for the preceding year.

Raisin Day committees are already at work planning the 1922 celebration. An industrial show will be one of the features.

Fig growers in the association have received final payment on the 1920 crop. This was for figs received last February.

The packing plant of the raisin association at Kerman was closed the middle of the month. This plant has handled 1,800 tons.

The county highway between Santa Cruz and the Big Trees is now open to traffic. Much of the road is paved, the rest rocked and rolled.

Merced is planning to send a delegation of 100 fig growers to the fig institute at Fresno in January to bring the 1923 institute to Merced.

The Modesto irrigation district will sell on January 11 the eighth issue of Don Pedro bonds, $181,600, to be used for power house construction.

Hog raisers of Fresno County have organized a department in the farm bureau and will hold an annual pork day similar to the one held at Hanford.

President Giffen of the Sun-Maid Growers has returned from a trip through the Imperial, Yuma and Salt River Valleys to look into prospects of those sections as raisin producers.

The swine department of the Fresno County farm bureau is making plans for next fall's Pork Day, when $1,000 in cash prizes will be distributed. After the judging several carloads of hogs will be sold at auction.

The projected West Side highway from Fresno to Tracy, to provide a new paved route from Fresno to San Francisco, has been endorsed by the Fresno County chamber of commerce.

Three deciduous pruning demonstrations were held in Kern County, December 29 and 30, at Kern Mesa, Wasco and Tehachapi. L. H. Day of the state university conducted the demonstrations, aided by the farm adviser.

Southern California

A poultry and pet stock show will be held at San Diego, January 5-9.

Imperial Valley turkey raisers have been getting 40 cents for Christmas turkeys.

The sugar factory at Anaheim, Orange County, is planning to build a $250,000 addition.

Dairymen at Meloland, Imperial Valley, are taking steps to form a cow testing association.

A carload of oranges for the Christmas trade left Rialto, San Bernardino County, December 9.

The Anaheim Valencia show has decided to incorporate to place the venture on a business basis.

Tractor school at Covina, January 16-17. Many enrollments are coming in to the farm adviser's office.

The Mojave Valley Fruit Association is planning to build a packing house at Victorville the coming season.

Olive growers of Santa Barbara County are wondering if they can find a market for their crop through the farm bureau.

The Los Angeles County farm bureau is arranging for a series of navel orange pruning demonstrations early in the year.

At its last meeting at Hemet the Associated Chambers of Commerce of Riverside County discussed Colorado River development.

A. W. La Forge of Chino has been testing out many varieties of beans as intercrops in his walnut orchard and finds kidneys the most profitable.

Sierra Madre reports rainfall for the storm, over 15 inches. All Southern California except desert sections received from three and a half inches up.

The semi-final pool of Valencias of the Santiago Orange Growers' Association, Orange County, realized $374,000. There were 200 growers in the pool.

The Riverside-Arlington Heights Exchange shipped during the season 886,792 boxes of oranges. Total cost for marketing the fruit was 6¾ cents a box.

Three days' demonstrations of special interest to grape growers in Los Angeles County will be given by Prof. F. T. Bioletti, January 14, 16, 17, in various grape growing sections.

The poultry industry of Ramona, San Diego County, this year shows an increase of 20 per cent over that of last year, the shipment of eggs from the valley amounting to 10,000 cases.

Growers at the citrus institute at Santa Ana last week declared themselves in favor of an insectary to be financed and controlled by themselves to help in control of pests of Orange County orchards.

Orange County has guaranteed to ship 1,000 cars of citrus fruit through the Panama. The McPherson Heights Citrus Association figures that if its 95 cars of Valencias were shipped by water instead of by rail it would save $28,200.

Orange, Imperial and Los Angeles Counties are now being canvassed by R. L. Adams of the state university for data on dairy costs, figures to be used by the state legislature. Twenty-three counties are being canvassed for similar figures.

The Coast and General

The Wenatchee Horticultural Society, Washington, favors adoption of permanent fruit grading rules.

Seven counties of South Dakota applied last summer 130 tons of poison bran mash to 25,000 acres of growing crops.

The office of the Northwest Wheat Growers Association will be moved from Spokane to Portland within a short time.

Wenatchee apple shippers now have a water rate via Seattle to Atlantic ports of 62 cents a box, 19 cents less than the rail rate.

The federal government has established a plant quarantine for Hawaii, to protect from pests now on the mainland but not yet in the islands.

The Farmers Union for Oregon and Southern Idaho has reelected A. R. Shumway of Milton, president. F. A. Sikes of Corvallis is secretary-treasurer.

The annual Oregon irrigation congress was held last week. The three chief projects to be considered were the Klamath Falls, Umatilla and Powder River.

Berry growers of the Puyallup valley of Washington, with lower prices but also lower costs of production, netted more than from crops of last two years.

A branch of the Washington Egg and Poultry Association is being organized in the Yakima Valley. The aim is to sign up owners of at least 50,000 hens.

Prospective grape growers of Yuma Valley met at Yuma December 2 to form an organization and make plans for importing and planting cuttings and rooted vines.

At the meeting of the National Association of Polled Durham breeders at Chicago during the International Dan B. Thieman of Higginsville, Missouri, was elected president.

More than 3,000,000 pounds of the 1921 crop of prunes have been shipped to various markets of the world by the Oregon Growers' Cooperative Association, with headquarters in Salem.

The annual ham and bacon show of the Missouri college of agriculture will be held at Columbia, January 16-20. $165 in cash and silver cups will be awarded for best home cured meat.

Florida shippers and growers are protesting against the 10 per cent freight cut in effect December 15. They say that nothing less than a 33 1-3 per cent cut will be satisfactory.

Plans are already being made for an auction sale of show and utility poultry in connection with the Western Winter Show of the Oregon Poultry and Pet Stock Association, in connection with the Pacific International Livestock Exposition of 1922.

The National Livestock Producers Association has as its first board of directors: John G. Brown, Monon, Indiana; E. H. Cunningham, Des Moines, Iowa; C. A. Ewing, Decatur, Illinois; Harry G. Beale, Mt. Sterling, Ohio; Howard M. Gore, Clarksburg, West Virginia; O. O. Wolf, Ottawa, Kansas; C. E. Collins, Kit Carson, Colorado; Hugh Sproat, Boise, Idaho; J. E. Boog-Scott, Coleman, Texas. They will carry out the cooperative livestock marketing plan worked out by the American Farm Bureau Federation.

Relation of the Honey Bee to Deciduous Fruit Production

By A. H. Hendrickson

THE relation of the honey bee to the production of deciduous fruit is a question that interests both the beekeeper and the fruit grower. In the early days of horticulture nearly every farm kept a few bees as a side line, but of late years this practice has almost entirely disappeared. The fruit farm with a number of colonies of bees is now the exception rather than the rule. Sporadic attempts have been made from time to time to interest orchardists in general in keeping bees, but almost invariably they have resulted in failure. The orchardist was a fruit grower and not a beekeeper, hence soon lost interest when he began to lose swarms and his colonies became diseased. Steadily diminishing crops in many of the highly specialized fruit sections have caused a widespread interest in anything that will bring up the yield. Attention has been redirected to the humble bee as the connecting link between trees and fruit.

Actual experiments with honey bees in orchards were carried on over 30 years ago. Professor A. J. Cook proved the value of bees in apple orchards. He gave substantial figures to back his claims. In 1893 at a California state fruit growers' convention several observers reported on the value of bees in their respective districts. As early as 1894 a government report showed that the cherry crop in a large orchard near Vacaville was greatly increased when several colonies of bees were placed in the orchard. It is interesting to note that this ranch today keeps a large number of bees and produces large crops consistently year after year. Yet on other ranches in the same section where crops were erratic, the owners did not believe that bees were in any way responsible. In spite of this information printed in the reports of the state commission of horticulture, many growers had no conception of the importance of these useful insects. Many ranchers went to the opposite extreme and disposed of their bees, claiming they were a nuisance at drying time and generally hard to care for. In 1916 and 1917 the University of California, by means of tents of mosquito netting over prune trees, proved conclusively the value of bees in prune orchards. Since that time the use of these insects in the Santa Clara Valley and elsewhere has steadily increased. In 1921 the results of similar experiments demonstrated to the Placer County growers the need of bees for their plums. From interest shown thus far it would seem that this district would be a promising field for an energetic beeman with several hundred colonies to rent.

Process of Fertilization

Before proceeding farther it would be well to stop and consider briefly what is necessary to secure a set of fruit. The importance of bees is more fully realized when the intricate process of fertilization is understood. Assuming that the orchard has been given normal care, the trees will blossom in a satisfactory manner at the proper time. Each blossom produces one or more pistils, as the case may be; a large number of stamens; a row of showy white or pink petals; and, on the outside, a row of green sepals. The important organs are the first two, the petals being largely for show. The pistil or female portion consists of a young fruit in which is located the unfertilized egg and above which is a rather long slender stalk surmounted by a flattened sticky surface called the stigma. The stamens or male elements are long slender filaments bearing the anthers which enclose large quantities of pollen. Deep down in the flower is usually the nectary which secretes the honey. At the proper time the pollen falls upon the stigma, germinates, and sends down a tube through the pistil to the egg. The male nucleus passes into the egg and unites with the female nucleus, completing the process of fertilization. Under this stimulus the young fruit develops very rapidly. If the egg is not fertilized in a comparatively short time it shrivels and the young fruit turns yellow and falls to the ground.

The egg or young ovule remains receptive for perhaps several days depending somewhat upon the climatic conditions. If not fertilized during that time it begins to disintegrate and the young fruit is doomed to fall. Many potential fruits are lost each year because the egg was beyond its receptive stage before the pollen tube reached it. Thus, the rate of growth of the pollen tube down the style becomes a very important factor. If the growth is slow, disintegration of the egg may commence before the nucleus can pass over and complete the process of fertilization. Experiments have shown that pollen tubes grow much slower in cold weather than in warm, which may help to account for light crop following cold springs. Pollen tubes also grow much slower in self pollinated flowers than in cross pollinated ones. Self pollinated fruits are those pollinated with the pollen from the same variety. Cross pollinated fruits are those produced when pollen from another variety is used. This slow growth may be one of the fundamental causes of sterility among deciduous tree fruits. For full setting it would seem that the ideal conditions would be fairly warm clear weather and ample facilities for cross pollination so that a strong, active growth would be secured in the pollen tubes.

In addition to this impediment to self pollination just described, nature has also provided others which are more obvious. Many fruits like the plum and apple do not have the pistil and stamens maturing at the same time. While the pistil is receptive the pollen is not yet mature. Consequently pollen from another variety must be placed on the pistil to secure fertilization. Another factor is the one of difference in length of the important organs. In certain varieties of almonds, cherries and plums the pistil is so much longer than the stamens there is no possibility of the pollen dropping on the stigma. An exception to this rule seems to be the apricot and possibly the peach. With but few exceptions the pollen must be transferred mechanically to the stigma of the same or different flowers. Insects and wind are the only two distributing agents worthy of mention. For practically all of our tree fruits except walnuts wind as a pollen carrier may be considered as practically negligible in value. Insects are the effective pollen carriers. No one knows exactly of what importance each one is, but the honey bee is usually considered the most valuable. Increased crops due to the addition of bees to the orchard is ample proof of this statement.

Fruits Requiring Cross Fertilization

Bees are a vital necessity with

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10,000 Dozen Eggs From 600 Hens

By Jean A Koethen

IT sounds like a fairy story. When we consider that ten dozen eggs per year per hen is considered the general average for the whole state, an average of 18 dozen per year from a flock of 600 hens may well be counted phenomenal, yet that is a little under the average reached by the flock of L. G. Wylie of Van Nuys in the Holly Hatchery egg laying contest which closed September 30.

The contestants who completed the year's work were: L. G. Wylie, Van Nuys, 600 pullets, averaging 217.09 eggs each, all in one flock; chicks hatched February 19 and 26, 1920. C. S. Hinkley, Redlands, 700 pullets, averaging 186.69 eggs each, in two flocks; hatched February 25, 1920. A. W. Horswill, Pasadena, 540 pullets, averaging 176.67 eggs each, in two flocks; hatched March 4, 1920. Walter Fletcher, Redlands, 70 pullets, averaging 175.14 eggs each; hatched January 28, 1920. Brant Rancho, Owensmouth, 320 pullets, averaging 172.59 eggs each; hatched February 26 and April 29, 1920. Henning Carlson, Owensmouth, 925 pullets, averaging 172.16 eggs each; hatched April 15, 1920. Mrs. McD. Cantrell, Pasadena, 800 pullets, averaging 171.76 eggs each; hatched February 5, March 11 and April 28, 1920. Butler L. Pierce, San Bernardino, 1,009 pullets, averaging 170.8 eggs each; hatched April 14, 1920. C. G. Ross, Pomona, 340 pullets, averaging 166.11 eggs each; hatched March 25, 1920. Mr. White, the leader for the whole year, received $300, Mr. Hinkley received $200 and Mr. Horswill $100. Mr. Horswill's record was remarkable because it was made on two town lots, his hens clearing the neat little sum of $4,000 in the year. Mr. Pierce's record was notable in that it was made with a larger number of pullets than was entered by any other contestant, and with April hatched pullets at that. Mr. Fletcher's 70 pullets were a backyard flock.

How They Did It

How did Mr. Wylie manage to make so notable a record with so large a flock? At the state and national egg laying contests many pens of five or ten pullets make big records, but Mr. Wylie had 600 pullets, all in one flock. It was in part to answer this question that Mr. Holloway invited the contestants and others interested to meet him at Van Nuys on December 9 in celebration of the close of the contest. After lunch at the Van Nuys Country Club the party motored in several big machines to the Wylie ranch on Sherman Way to see the 600 thrifty hens that had acquitted themselves so well and learn from Mr. Wylie how he managed them.

The story is not essentially different from any other story of success with laying hens. Good stock, carefully raised, brought to laying maturity at the right time, kept in clean houses, fed a balanced ration and an abundance of greens will always lay. Possibly the keynote of Mr. Wylie's management is absolute cleanliness. Certainly he spares no pains to keep houses and air and the bodies of the hens themselves as chemically pure as is possible under the circumstances.

Housing the Chicks

Mr. Wylie's chicks were hatched in February, which is undoubtedly the best month in the year for hatching. They were housed in one of the regular laying houses, 1,600 chicks to a 16 by 18 house, around a big brood stove, a plan which many poultry people now follow, and which eliminates the brooder house entirely. The stove stands on the floor and the chicks are brooded about it for six weeks. When roosting time comes, a slatted roosting frame is laid upon the roosts above the droppings board and a lath panel placed in front. After one night the lath panels are used as ladders and the chicks quickly find their places on the roosts.

The more precocious cockerels are taken from the flock at the end of three weeks, and by the end of the fifth week only pullets are left. All cockerels are sold at six weeks of age.

The house opens into two big yards, one 54 feet square, the other 25 by 200. When the chicks get out onto the ground they find both these yards filled with barley which has been allowed to grow to full height. Here they run and play and hunt for bugs, and make a very rapid growth from babies to half grown chickens. In such a run as this the chicks never find time for toe picking, and one bugbear of chick raising is eliminated. Plenty of green range is also a preventive of coccidiosis, which is found mostly in overfed, underexercised flocks.

Feeding

These chicks were hatched on Monday but not fed till Friday. They were placed on the clean straw about the brooder stove and given piles of charcoal to pick at. After the third day skim milk was given in fountains. On Friday morning a mixture of cracked wheat, fine cracked corn and steel cut oats was placed before them on small trays, according to the poultry division feeding system, and no other food was given for four or five days. When the dry mash was placed before the chicks at the end of the fifth or sixth day it was left for only a short time in the forenoon and again in the afternoon. The time of leaving it was gradually increased till by the end of the

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Established 1877 Forty-fourth Year

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and LIVESTOCK and DAIRY JOURNAL

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Saturday, Dec. 31, 1921

OUR ADVERTISERS RELIABLE

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EDITORIALETTES

Look on this scene, then on that. We refer to those two scenes on the cover. One of them gives an idea of one of California's rich valleys—oranges, lemons, olives, avocados and other semi-tropical fruits are within sight. There is a bit of a hint of Eastern conditions at the same moment on the mountain tops, but even they add cheer to the landscape below. The little inset in the upper right hand corner is really "back East." Snow is all right for tracking rabbits, but mighty poor stuff when it comes to shoveling a path out to the barn.

* * *

We think perhaps one reason why California orchards sometimes command two or three thousand dollars per acre while New York or some of those states which are covered with the "beautiful" sell their lands at one or, possibly, two hundred dollars is this difference in climate. We can produce New York climate to perfection on our mountain tops but New York's most beautiful little valleys cannot produce a California orange grove. Hence the difference in price.

* * *

That much from a climate standpoint. From a pocketbook standpoint there is even greater difference. The best corn field in the hog belt would not justify the thousand dollar an acre price, but when California climate and soil and water all are brought together the golden orange is produced which means long return.

* * *

The orange is not the only "different" crop, for no section of the world has the diversity of production which can be shown in California. Speaking of corn, the census returns show the per acre production of California corn fields greater than that of the regular so-called corn states. This is in part due to soil and in part to irrigation, so that California can produce corn. Its total tonnage is not large simply because there are other things we can produce more perfectly.

* * *

They say that the California state railroad commission has announced that it will protect capital invested in railways to the end that stockholders may have fair return on their money. This is well and carries out the general idea that large aggregations of capital are sacred; it absolutely must not be impaired. The blooming farmer who asks such fool questions as "What about capital invested in my farm," should shut up. That ain't sacred or, rather, it should be willingly sacrificed to bear the brunt of reconstruction. Protect and reimburse the bond and stockholder and soak it to the farmer. He is long suffering and will stand the gaff but ultimately will be willing to sell his farm, if he can, and invest his money, if he has any after paying the mortgage, in stocks and bonds which are sacred. Then, if he hasn't already gone to the devil, will prosperity be his.

* * *

HAPPY NEW YEAR

Now all together: "Happy New Year." The rains have been poured out upon the rich soil; the plows are starting; all nature is uniting in good cheer. We are hoping that transportation rates will be such that the wonderful crops we may now grow may be taken to market and that we will have living wage, so anticipate the pleasure of another Thanksgiving season with abundance.

MORE RAIN

Last week we spoke of floods and the great downpour covering two days. Every day since there has been gentle precipitation until the total has mounted—on the top of Mount Wilson—to nearly two and a half feet. In orchard sections it has been somewhat lighter. Eureka reports for the season 12.25 inches; Red Bluff, 9.31; Sacramento, 5.44; San Francisco, 8.56; San Jose, 6.51; Fresno, 3.56. The downpour in the South has been more abundant and for this one storm covering the past nine days the record shows: Los Angeles, 7.90; Glendale, 13.18; Corona, 9.09; Santa Paula, 10.66; Bakersfield, 2.03; Tehachapi, 2.18; Redlands, 8.76; Pasadena, 11.59; Monrovia, 9.68; Glendora, 10.36; Orange, 7.91; Riverside, 6.63; Ontario, 10.64; Sierra Madre, 17.73; Pomona, 8.88; Santa Barbara, 7.73; Beaumont. 14.43; Ventura, 7.36; San Diego, 9.25. The seasonal precipitation at these southern points will run from one to three inches above the figures for the one storm. And the end is not yet!

STILL WE LEAD

There are 51,453 acres of the best soil of the United States used in growing nursery trees, and the leader is New York with 5,288 acres. The next is California with 4,080. The comparative values of the acreage in New York and in California are vividly shown in the financial returns. While New York's five thousand acres brings in a total of nursery stock to the value of $2,310,253, California's four thousand produce stock valued at practically $3,000,000, or, to be exact, $2,929,458.

In number of nurseries California also leads with 540 against 359 for New York. There are only six states producing nursery stock exceeding in value a million dollars. These are in the order named: California, New York, Ohio, New Jersey, Missouri, Pennsylvania.

These figures do not have to do with greenhouses, neither with seed farms. Of course in seed production no state in the Union approaches California.

SAVE THE LEAK

Secretary Kruckman of the League of the Southwest reviews some of the work of the league, also touches upon the dissension during the recent meeting. As was reported in the Cultivator the Riverside meeting was not entirely harmonious for a truly cooperative spirit was not manifested by many, especially one or two of the states which allowed the selfish spirit to overcome the cooperative. This selfish spirit would if it could utilize the great forces of the Colorado River for the benefit of the few, and if the League of the Southwest stands in the way, then the league should be wrecked. Mr. Kruckman said:

"It is very puzzling to watch the campaign now in progress to submarine the league. Newspapers innocently through the inspiration of interested persons have been led to publish glaring mis-statements which they have voluntarily corrected. Healthier and stronger and more coordinate than ever, yet the propaganda is spread broadcast that the league is either dead or dying. Why this insistence upon a funeral? Who is spending good money and much valuable time to bury a very lusty and powerfully growing organization? Why this organized and systematic campaign of mud-heaving and innuendo? Why is it so important to make an effort to kill the league? Who or what is hurt by public discussion of the Colorado River problems?"

Pitiless publicity is not what is desired by those who are endeavoring to acquire these rights, in fact, they suggest "that a small group of gentlemen gathered around a comfortable table far from the maddening crowd can function much more effectively upon a problem like the Colorado River than an organization like the League of the Southwest, which, in the classic words of Dr. R. B. von KleinSmid, is dedicated to the business of providing an absolutely impartial, unbiased and nonpartisan forum, which is open, where the Southwest may gather occasionally to discuss such problems of paramount interest as the Colorado River."

LET US BE FAIR TO OTHERS, FAIR TO OURSELVES

The best news which has come to the Southwest in many a day was that brought by Secretary of the Interior Fall when he intimated that more perfect development of the energies of the great Rio Colorado would begin in the near future. He was conservative in his statements as to exact date of the beginning, but "as soon as the rights of two nations and seven states can be determined." In any case we are all most hopeful that the floods will be held back before they cause irreparable damage on the lower river courses. Meantime we are each presenting our ideas of the various claims to the great wealth now wasting to the sea.

Some of the discussion which resulted from the congress of the League of the Southwest and from the hearings of Secretary Fall at San Diego was reported in the columns of the California Cultivator as fully as possible. We would have been glad to have given more space in order to aid in the work which will in any case be all too long of accomplishment. But as short as the account necessarily was we endeavored to do justice to all.

In response to our treatment of the subject we received from Dean D. W. Working of the agricultural college of the University of Arizona the following letter:

"I have been reading the editorial page and editorial correspondence in your issue of December 17 and wish to express my pleasure in regard to the way in which you have discussed the whole problem of the recent league meeting. This college of agriculture was represented at the Riverside conference by Professor G. E. P. Smith of our department of irrigation. Mr. Smith has read your discussion at my suggestion and agrees with me that you have made an admirable presentation of the meeting that was difficult to present to the public without certain expressions of impatience.

"We were particularly interested in your paragraph referring to the danger to the Imperial Valley by floods from the Colorado itself and from the Gila; and also in the paragraph in which you express the opinion that the principle of the greatest good for the greatest number will be the policy of the federal government in the control of the waters of the Colorado River. It is important, it seems to me, that those who have the best interests of the whole Southwest at heart should be careful to keep before the public the idea that it is only by arriving at a common understanding that the states of the Southwest can get satisfactory results from the agitation for the development of power and irrigation from the Colorado River.

"I have attended a number of conferences at which broad interstate problems were under consideration, and I have observed that many of those who insist with undue vigor on the importance of state rights are men who are unwilling to give fair consideration to the rights of other states than their own. Usually the state rights plea is a plea for selfish advantage. I suspect that we shall all profit by the fact that the Colorado is both an interstate and an international stream. We shall have to consider, whether we will or no, the interests of Mexico along with our own particular interests in the river.

"I hope that you will continue discussions concerning the Colorado River and the development of its resources. All of us in all of the states which comprise the drainage basin of the river need to use a part of the water of the river and our proper share of its power resources. You of California and our neighbors of Mexico need to be protected against the menace of floods. A proper control of the river under national authority can be made to give every state all of the water for irrigation it is able to use wisely and all the power it can properly use in justice to the interests of other states. The big thing to be accomplished is to secure a right attitude of mind when considering and discussing the use to be made of the water of the Colorado River and its tributaries."

Building Up Soils vs. Feeding Crops

By R. R. Snowden, Agricultural Chemist

THE question is often asked, "Should I aim to feed the crop or build up the soil?" I say, by all means, build up the soil, which means create and maintain conditions in the soil most favorable to root extension and plant development—then feed the crop by supplying in available forms all those fertilizer elements that are deficient in the soil. The fundamental need in agriculture (which includes horticulture) is oxidation. This can only be attained by securing such openness of the soil as will permit adequate movement of air and moisture within the soil mass to the required depth, which varies with the different crops grown. Oxidation is so necessary that it is often synonymous with fertility. This object is attained by opening up the heavy clay with gypsum or slaked lime (or quick lime), aided by large additions of vegetable matter incorporated as deeply as possible. It is also encouraged by catalytic agents such as manganese, red iron oxide and other efficient purveyors of oxygen, which oxidize without being used up in the operation; and by the nitrifying bacteria which unite the oxygen of the soil air to the soil nitrogen to form nitrates. These bacteria must have nitrogen in combination, the free air of the more or less open soil, moisture, calcium carbonate to neutralize the nitric acid they produce, vegetable matter (which always contains carbohydrates—cellulose, starch, sugar), a range of temperature between certain limits. These the farmer must supply, and upon the thoroughness of his work depends his success. The farmer can influence the temperature factor in several ways, first by selection of a sunny or other slope for his field; second by selection of the proper season for planting; and the temperature may be further modified by the production of humus in the soil to darken its color, for dark colored soils are relatively warmer than light colored ones. In the early spring before the soil becomes warm enough for the nitrifying bacteria to do their work the addition of nitrates in suitable quantity is imperative, in the case of annuals, to give the plants a strong start, and in that of perennials, such as fruit trees, to form strong fruit buds, removing as much as possible restraint upon their development.

It is astonishing what can be done for vegetation through the medium of the soil along lines which seem to have no relation whatever to soil conditions. For instance, a Santa Barbara lemon grower put lime (old wall plaster) around some of his young lemon trees in the summer time. The following winter a freeze killed to the ground all the trees that received no lime, while those receiving it simply shed their leaves, and a few where the wagon stood, that accidentally received an extra supply of the lime, were not visibly affected by the cold and did not even drop their leaves. A Covina orange grower found after a freeze 95 per cent of his fruit uninjured where he had treated the soil liberally with sawdust, while the whole crop was lost in the untreated parts. Another Covina orange grower dynamited the hardpan in his orchard, but at my request he left a row with hardpan intact. The row left with hardpan was badly injured by cold the

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Material	Nitrogen Per Cent	Phosphoric Acid Per Cent	Potash Per Cent
Acid phosphate	.....	12.0 to 16.0	.....
Alfalfa hay	2.45	0.50	2.10
Alfalfa (Cal. Bulletin)	.....	.643	1.349
Ammonium sulphate	19.0 to 20.5	.....	.....
Basic slag	.....	17.0 to 18.0	.....
Bat guano	1 to 12	2.5 to 16	.....
Bean straw (lima)	1.37	.30	1.57
Castor-bean pomace	5 to 6	2 to 2.5	1 to 1.25
Corncobs, ground, charred	.....	.....	2.01
Corncob ash	.....	.....	50.00
Cottonseed	3.15	1.25	1.15
Cottonseed hull ashes	.....	7 to 10	15 to 30
Cotton waste from factory	1.32	.45	.36
Cowpeas, green forage	.45	.12	.45
Dried blood	10.0 to 14.0	1.0 to 5.0	.....
Dried sheep manure	1.51 to 3.09	.95 to 2.50	.33 to 2.24
Field bean shells	1.70	.30	.35
Fish scrap, fresh	2 to 7.5	1.5 to 6	.....
Garbage tankage	1 to 2	.5 to 1	.5 to 1
Ground bone (raw)	2.5 to 4.5	20.0 to 25.0	.....
Greasewood ashes	.....	.....	12.61
Grape refuse from wine factory	.75	.20	.40
Kainit	.....	.....	12.0 to 12.5
Lemon culls, California	.15	.06	.26
Lemon skins (ash)	.....	6.30	31.00
Limekiln ash	.....	.75	2.00
Limekiln ash	.....	.5 to 1	.1 to 1.50
Manures:			
Sheep (Cal., dry)	2.95	1.31	3.09
Sheep (Cal., fresh)	.55	.31	.15
Horse (fresh)	.44	.17	.35
Cow (fresh)	.29	.17	.10
Hog (fresh)	.60	.41	.13
Hen (fresh)	1.10	.85	.56
Bat guano	1 to 12	25 to 16	.....
Mixed stable manure	.49	.32	.43
Nitrate of Soda	15.5 to 16.	.....	.....
Oak leaves	.80	.35	.15
Olive pomace	1.15	.78	1.26
Olive refuse	1.22	.18	.32
Orange culls	.20	.13	.21
Peanut shell	.80	.15	.50
Potatoes, leaves and stalks	.60	.15	.45
Potassium sulphate	.....	.....	48.0 to 52.0
Potassium muriate	.....	.....	48.0 to 52.0
Prune refuse	.18	.07	.31
Raw ground phosphate rock	.....	26.0 to 35.0	.....
Red clover hay	2.10	.50	2.00
Red top hay	1.20	.35	1.00
Sagebrush (ashes)	.....	.....	4.10
Sagebrush	.....	.....	5.42
Soot from chimney flues	.....	1.05	.35
Stringbean strings and stems (ash)	.....	4.99	18.03
Tankage	11.0 to 12.5	1.0 to 2.0	.....
Tanbark ash, spent	.....	1.5 to 2	1.5 to 2.5
Timothy hay	1.25	.55	1.00
Tobacco stalks	3.70	.65	4.50
Tobacco stems	2.50	.90	7.00
Wheat straw	.50	.15	.60
Wood ashes, leached	.....	1 to 1.5	1 to 3
Wood ashes, unleached	.....	1 to 2	4 to 10

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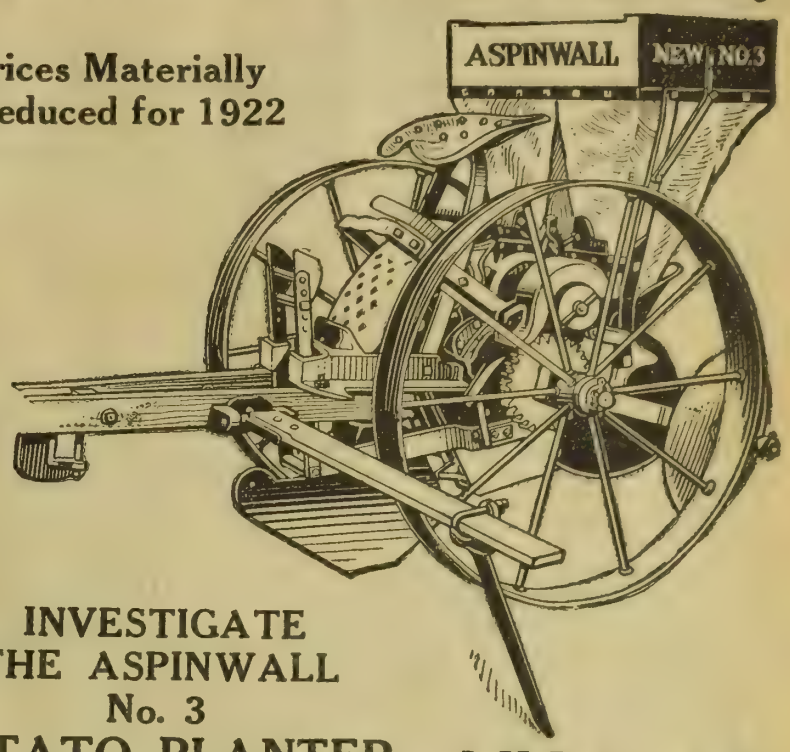

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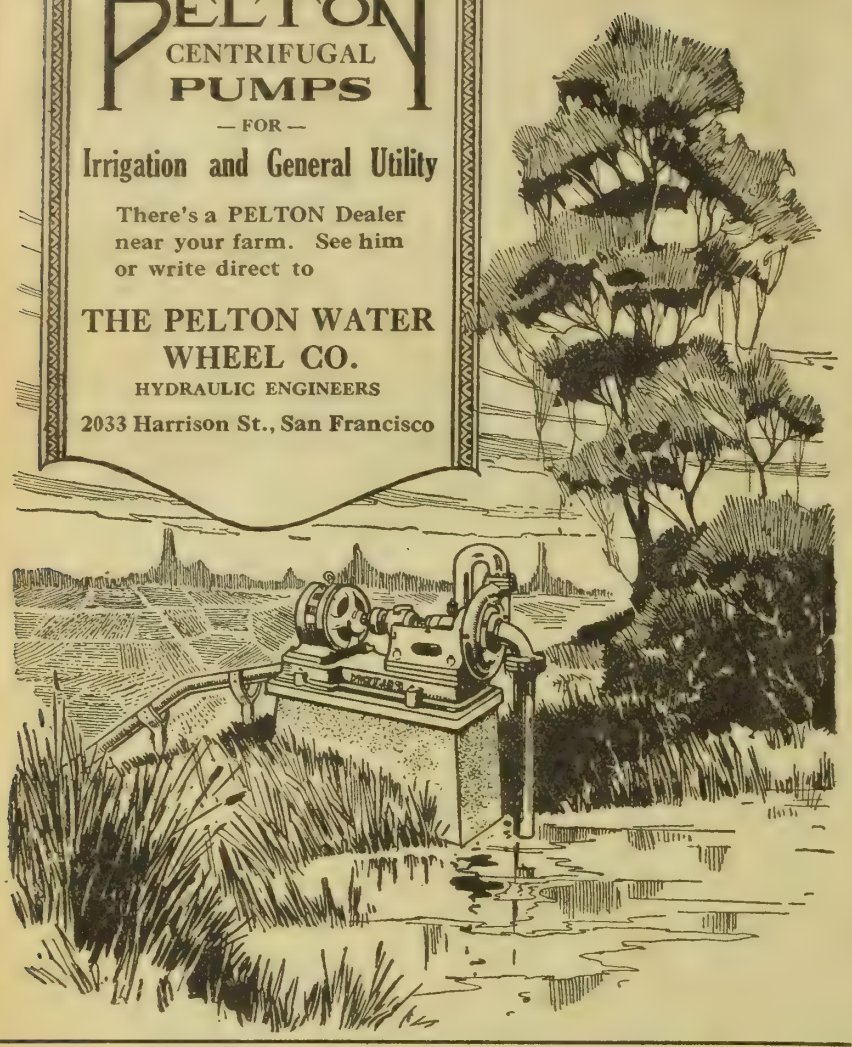

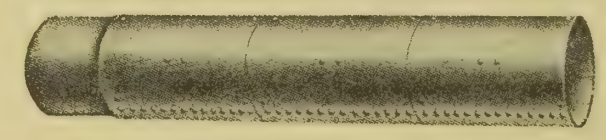

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Rudiments of Citrus Fertilization

By E. L. Koethen

CERTAIN chemical elements are essential to the normal growth of all terrestrial plants. The composition of economic plants being variable, the composition of the soil in which they are to grow may vary greatly with the nature of the plants grown. So also the requirements may vary for physical reasons. To illustrate, certain kinds of plants thrive as well or better in soils heavily impregnated with alkali, while the citrus is quite impatient of it. Salt in large quantities is often placed on asparagus beds. Also wheat may be grown on soil so rich in nitrogen as to make the straw too heavy, causing the grain to lodge. So in order not to be misunderstood in these papers let us make it clear that we are dealing with citrus orchards, and what we say might not apply at all to many other kinds of cultures.

There are 18 natural elements mentioned by authorities as soil constituents, of which about 14 help make up the structure of plants. Even some of these 14 have no functions to perform in plant life that are known, but as they are all found in the plant structure it is taken by inference that they are needed or they would not so appear. For instance, titanium, though always present, has value so obscure as to have escaped the vigilance of the investigator.

The volatile elements in plant structure are oxygen, carbon, hydrogen, nitrogen. These may be taken into the plant either from the air direct or from the soil in combination with other elements. The other elements found in soil structure are potassium, sodium, calcium, magnesium, iron, manganese, phosphorus, sulphur, chlorine, iodine, silicon, titanium, aluminum, fluorine. Of these silicon is the most abundant, then come in succession aluminum, calcium and magnesium. These four make up the great bulk of the soil, of which the former in combination with oxygen makes up nearly 58 per cent of most soils. The great bulk of this soil mass is "filler," as it would be termed in the fertilizer factory or "roughage" in the parlance of the stock feeder. Plant food must be administered in diluted doses, so nature provides that the actual plant food shall be disseminated in a body of other materials that act as a carrier. At the same time they render service in a mechanical way. For instance, it is this filler that determines whether the soil shall be light or heavy, close or loose, friable or sticky, and these qualities are acted upon to a greater or less degree by the other fertilizing elements, to modify these qualities. To illustrate, the addition of lime to a soil may and usually does flocculate it (make it crumble). The same application to a sandy soil will give it greater coherence.

Again some of these elements while used in small quantities by the plants may become poisonous to them if found in excessive proportions. Or it may be that they are just injurious to certain plants that would not injure others. This is true of sodium forming alkalies and to a less degree of lime if in excess. Certain soils in central California have been found of this character.

Drouth Resistant Plants

By Ernest Braunton

DURING the past few years vegetation in all parts of California has been put to severe tests to withstand, without the aid of man, the unusual dry conditions. From a study of the situation in various localities one is enabled to judge how various species passed through the ordeal and to draw some broad general conclusions.

To those who would plant in dry districts or on lands incapable of irrigation it is safe to recommend native vegetation in general. There are a few native trees that are exacting. The redwood revels only in districts of heaviest fogs and thrives best in moist bottom lands. All know that willows, poplars, alders and sycamores inhabit watersides, yet the sycamore stands drouth very well. Aside from these it is fairly safe for the dry planter to pin his faith to native trees and shrubs. Among smaller plants he should be able to choose those that grow on dry ground in his or similar district.

When we come to classes it is well to remember that nearly all pines, junipers and cypresses will grow with very little water; though all will grow faster and present a finer appearance if occasionally irrigated during summer, especially early summer. During late summer it is as well not to irrigate unless the first seasonable rains are late. One more general conclusion is fairly safe—trees and shrubs from Australia and South Africa, coming as they do from climates somewhat like our own as regards wet and dry seasons, will compare favorably with native Californias under stress of long continued dry weather.

Two genera of trees and shrubs, mostly from Australia, require little water in order to retain life for a term of years. While eucalypts are natives only to Australasia, acacias are common in parts of Africa, and we have one species in this country, all of which inhabit dry lands. South America, Mexico and even Japan contribute a few plants that progress with little encouragement in the way of drinks. On the other hand eucalypts are far from being the leaders in tolerance of continued drouth and the acacias surpass them in this respect. Of the acacias the one which first succumbs to thirst is the blackwood, Acacia melanoxylon. Its native haunts are rich river bottom lands in Australia and every dry year in California witnesses the death by drouth of many large trees of this species. Sudden death, too, comes to this acacia from striking an impervious hardpan. Each year we also note the demise of trees of the common blue and red gums by reason of extreme thirst. A mysterious trouble is also taking off eucalypts that are favorably situated in regard to soil moisture. Its action is similar to root fungus (armillaria) of the oak.

In addition to our live oaks, which are drouth resistant, is the cork oak, native to mountainsides and dry hillsides of Spain. It has been severely tested from San Francisco to San Diego and from the dry hilltops of Berkeley to those of University Heights. In the southern city it has stood the test well. The casuarinas, or beefwoods, the carob, or St. John's bread, grevillea, pepper and jacaranda from South America, the Himalaya and other true cedars and the Australian pittosporums are others that hold up well, though the last named develops slowly without water. In deciduous trees the drouth resisters are not so common, but conspicuous in this respect are the umbrella, the locusts, the Arizona ash, the European hornbean (carpinus), Koelreuteria and a few of lesser stature at maturity.

In shrubs there are some lowly acacias that qualify very well for dry planting, and it may be well to state here one general consideration overlooked: that as a rule all prostrate species having upright congeners (in the same genera or genus) are srongly resistant to drouth, whether junipers, cotoneasters or others. The leader in shrubs on an extremely meager water supply appears to be the Spanish broom, Spartium junceum, sometimes sold under the horticultural name of Genista Hispanica. On one dry hillside with but four to six inches of soil it survived when several other common shrubs perished. The leptospermums, close relatives of the eucalypts, are splendid for dry places, cannot be surpassed, in fact, as they always present a good appearance, no matter how dry the location. The Australian bottle brushes, callistem-

ons, melaleucas, and metrosidros, also close to eucalypts, are equally indifferent to moisture supply. Next comes a number of brooms, species of cytisus and genista. The privets, especially the Japanese, or Ligustrum Japonicum, revels in heat and drouth. Others are the rock roses (cistus), cassias, eleagnus, the Japanese nandina and last, but a leader for arid sections, the common pomegranate. Among shrubs which may also be used as vines there is no other that so thrives with little soil or water as the blue flowered plumbago.

PROF. BIOLETTI IN LOS ANGELES COUNTY

The agricultural extension service for Los Angeles County has secured Prof. F. T. Bioletti for a series of meetings, January 14, 16 and 17. Prof. Bioletti will discuss cultural problems of the grape, pruning, staking and trellising of one year old vines, and pruning of old vines. Last spring he made a survey of the Antelope and San Fernando Valleys for their adaptability to grapes, and his findings will be discussed at two of these meetings. The schedule for the series is as follows:

January 14, 10. A. M., Littlerock, at Miller's place. Pruning and staking of one year old vines. Pruning of old vines. 2 P. M., Lancaster, at school house, "Future of the Grape Industry for the Antelope Valley" and "Cultural Problems."

January 16, 9:30 A. M., Owensmouth, place of J. C. Craig, on Corbin Street, one mile off Sherman Way. Pruning and staking of one year old Malagas, Sultanas and Thompson Seedless varieties. Adjourn to place of Norman Johnson, about a half mile north of school house on the boulevard, for pruning of old vines. 12 M., lunch served at the Chatsworth Social Hall by women of the church, price 75 cents. Those desiring to take advantage of this notify Norman Johnson, Chatsworth, by mail before January 16. 2:30 P. M., Zelzah, at Women's Club House. Lecture on "The Future of the Grape Industry for the San Fernando Valley" and "Cultural Problems." 7:45 P. M., Los Angeles city farm bureau center meeting at Central Intermediate High School at 451 North Hill Street. The Angeleno Heights car is the nearest to the school. Lecture by Prof. Bioletti on "Grape Culture."

January 17, 10 A. M., San Fernando, at place of Dr. J. H. D. Budau, off San Fernando Road on Hubbard Avenue, at east end. Pruning and trellising of one year old Red Emperor, Cornichon, Tokay and Malaga varieties. 2 P. M., La Canada, at Kirst Bros.' vineyard (known as the Gould vineyard), located at the east corner of Gould Avenue and Michigan Boulevard. Pruning of old vines.

WALNUT INSTITUTE AT SANTA ANA

At a meeting of prominent walnut growers representing Santa Barbara, Ventura, Orange and Los Angeles Counties, December 15, plans were laid for the fourth annual walnut growers' institute at Santa Ana, January 13. The program includes report of walnut investigations of the citrus experiment station, discussion of the black sap disease of walnuts, better curing of walnuts before packing house delivery, subsoiling the orchard and establishing the young walnut orchard. It is expected that 800 or 1,000 walnut growers will be in attendance at this meeting judging from the attendance at previous institutes.

PRUNE PRICES ADVANCED

An advance of half a cent per pound in the price of the 1921 crop of prunes was announced by the California Prune and Apricot Growers' Association.

The following scale is now in effect among association members: 30-40, 10¼ cents; 40-50, 8¾ cents; 50-60, 7¼ cents; 60-70, 6¾ cents; 70-100, 6¼ cents.

MARCH OF APHYCUS

Inspector Bottel of the Los Angeles County horticulutral commission last week made an inspection of the district in Ventura County about the Limoneira orchards and reports a continuous heavy spread of the parasite in all directions. In a nearby apricot orchard formerly heavily infested with black scale this insect has effected a complete clean-up, the invading host being merely fugitives or emigrants from the Limoneira.

AID FOR PLANT BREEDER

Pursuant to plans outlined at the 54th convention of Fruit Growers and Farmers last October, Director Hecke has appointed the following committee to propose ways and means for the promotion of plant breeding work conducted independently for many years by Albert F. Etter of Humboldt County: Professor George P. Weldon, Chaffey Union High School; O. E. Bremner, county horticultural commissioner for Sonoma County; John F. Benton, county horticultural commissioner for Humboldt County.

Among the productions of Mr. Etter's life study are several strains of a hardy strawberry of excellent shipping and preserving qualities that should make it a commercial asset to California.

TREES

The Kirkman Nurseries is sending out a most attractive little pamphlet with lists of varieties of California fruit trees. Especially valuable is that section of the book devoted to figs. Mr. Kirkman suggests:

"No fruit is interesting California horticulturists more than the fig. Apparently it is only a problem of more efficient methods of preparation of the matured product to create a market demand calling for many times more figs than are now being produced.

"Most spectacular in its popularity is the recently introduced Kadota, which is the most sought for to supply the greatly increasing demand for preserved, pickled and canned figs.

"Mission is planted 30 to 40 feet apart, Adriatic and Calimyrna and Goodale 30 feet apart. Kadota and San Pedro are planted 20 to 30 feet apart usually, but it is recommended by some growers that they be planted even closer than 20 feet. The reason is that they start bearing early in life, and the tonnage is greatly increased during the first few years by planting more trees to the acre. Also, it is best to keep these varieties pruned back severely so that the crop be picked fresh, without the use of long stepladders. Some Kadota plantings are being made at 15 foot spaces. In those instances it is the plan to remove a portion of the trees in later years when they begin to crowd."

TIMBER SUPPLY NEEDS CARE

"The United States produces more than half of the entire lumber cut of the world," says Col. W. B. Greeley, chief of the forest service, "and uses 95 per cent of that amount at home. The exhaustion of our timber supply is coming about, not because we have used our forests freely, but because we have failed to use our timber growing land. The problem in a nutshell is the enormous area of forest land which has been so logged and burned that it is producing little or nothing. We have more than 80,000,000 acres, an area greater than all the forests of France, Belgium, Holland, Denmark, Germany, Switzerland, Spain and Portugal, which have been denuded to the point of absolute idleness so far as the production of any timber of commercial value is concerned. We have other enormous areas of cut-over land now growing but a fraction of the amount of timber which they might produce. And we are adding to these areas of idle or largely idle land from 10,000,000 to 15,000,000 acres every year as destructive logging and still more destructive burning progress."

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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Pruning Pomegranates

Please publish particulars as to propagation from cuttings of pomegranate, also pruning of mature tree.—Subscriber, Calipatria.

Pomegranates are the easiest of all fruit trees to propagate from cuttings, comparable to willows. Any size of cuttings put in at time of greatest dormancy will readily root. The pruning consists of thinning so light can get into all parts of the interior. As fruits are heavy encourage branches having an upward and outward drooping tendency. As a rule pomegranates send up too many leaders. These may require reducing in number. Cut off under soil, close to stump or root.

Home Orchard

What trees would be best for a family orchard of half an acre? I want apples, apricots, peaches, pears, persimmons, guavas, nectarines and mulberries. Be sure and tell me a good mulberry, not Persian. I also wish the names of some good sweet cherries and also prunes and plums. There is a plum that looks like the Satsuma, but it's not so tart. What is it? Are feijoas and guavas the same fruit?—Subscriber, Burbank.

For general planting the correspondent is referred to a list carefully prepared by the Los Angeles County farm adviser's staff which appears elsewhere in this issue. Leading nurserymen of the South do not list mulberries among fruit trees, for they are generally considered of little value, even the best of them. In the northern part of the state dealers list, aside from the Persian, Downing's Everbearing, Lick's American, and New American. The plum that closely resembles the Satsuma is no doubt the Duarte, quite a family favorite in the South. The feijoa is one of the several species of guava commonly planted.

Olives in Bearing

Will you please tell me how soon after planting a young olive tree will it bear fruit.—Subscriber, Wasco.

The age of bearing trees depends upon so many different things that it is impossible to give very definite information. Of trees grown under apparently identical conditions one may not bear for many years while another, two years from cutting and planted in best of soil with best of tilth may arrive at bearing age in five or six years. As a general proposition it will probably be safe to count on ordinary orchard coming into bearing in about eight or ten years.

Citrus Soap

Answering inquiry as to use of soap in combination with Blackleaf 40:

This was submitted to Roy E. Campbell, entomologist of the U. S. department of agriculture, at Alhambra:

"In regard to citrus soap. If this is the powder, analysis just submitted to me shows the following: Moisture, 35 per cent; soap (dry), 21 per cent, and sal soda 43 per cent. The latter (soda) is of no value as a soap or spreader and may cause injury to green foliage. It can be used with Blackleaf 40 and with neutral lead arsenate, but should not be used with the acid type. In view of the fact that nearly half of this powder is sodium carbonate, it is much cheaper to use whale oil or fish oil soap which costs around five cents per pound. This sodium is further objectionable on account of its being black alkali. Soap and Blackleaf 40, plus neutral arsenate of lead, is the best remedy for the pests mentioned. Some good results have been obtained lately by using soap alone against the aphis, at the rate of eight to ten pounds per 100 gallons, but this is perhaps questionable to recommend until we are sure how much can be used without burning."

Avocados in Lime Soil

I read your (Dr. Snowden's) very interesting article on lime and liming in the Cultivator of some time since. I am growing avocado trees at Lemon Grove, San Diego County, on clay soil that is underlaid with marl. Where the marl is close to the surface the trees turn yellow and grow for a while and then die back. I sent a sample of soil to the University of California and they said it contained magnesium carbonate and lime, 60 per cent lime. What should I put on this soil to benefit the trees?—Subscriber, San Diego.

This question would have been answered personally had inquirer signed the letter. We are unable to locate him. Herewith is clipping from Dr. Snowden's letter. This is contrary to our rule, as it is not good form to attempt to answer an unsigned letter. Dr. Snowden writes:

"Your soil contains entirely too much lime and magnesia for agricultural use. It is doubtful if you can make anything grow successfully in a soil containing 60 per cent carbonates of lime and magnesia.

"While the avocado is a lime loving plant, it cannot tolerate so much lime. Organic matter that usually improves soil would be positively detrimental in this case, because it would render the lime and magnesia more soluble than they are.

"Just for the sake of experiment, suppose you try a pound of copperas scattered around one tree. It is barely possible this might help it, but do not experiment on more than one tree in this same way, for there is a possibility of it injuring the tree; yet I think the chances of benefit are greater than of injury."

Better Hit Trail for Tia Juana

What can they do to me if I am in with a bunch that drink moon shine whisty or make it and even if I don't drink it or help make I want to know and what is the find how long will they have to stayin jail.—Subscriber.

From reports touching upon the enforcement of the prohibition law we fear our inquirer is booked for an interesting time. We know that we were commanded by that most voluminous of writers in the New Testament: "Be not overcome with evil, but overcome evil with good," and therein is explanation of why our subscriber is mixing with "the bunch that drink moon shine whisty." But we must remind him that the same writer above quoted a litle later in life wrote an equally pungent sentence in, "Evil communications corrupt good manners." Therefore our guess would be that the manners might be so corrupted, at least in the eyes of the law, that it would be well to shun the evil companions. The court sentence may be a mild fine or it may be several years behind the bars. Fortunately our subscriber lives not far from Tia Juana.

Farm Bureau Dues

Is it legal for one county to charge more for county farm bureau dues than another county?—Subscriber, Fairmead.

It is hardly a question of legality. It must be borne in mind that the farm bureau is merely an association of farmers organized to support and make effective the work of the farm advisor or county agricultural agent. This being purely a voluntary act on the part of the farmers the amount of the dues is named according to their desires, and it varies from as low as one dollar per year to at least $10 in the different states, and this is divided between the local center, the county bureau and the national federation.

Legal Queries

Louis B. Stanton, attorney, 343 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 317 Central Ave., Los Angeles.

Wife Responsible

The wife is the sole owner of property. She signs a petition. Can she be held legally responsible? Her husband does not sign. Since the time of signing she and her husband have changed their holdings to joint tenancy. Does this make any difference?—Subscriber, Ontario.

The separate property of the wife is liable for her own debts contracted before or after marriage. The wife certainly would be responsible for any action taken in signing any contract and her property held therefor, even though she subsequently caused the property to be held in joint tenancy.

Damage From Felled Tree

My neighbor fells eucalyptus tree on my land and damages my orange trees. Can he be required to pay damages?—Subscriber, Ontario.

He could certainly be held for damages and trespass and for the value of the trees and fruit thereon, which were destroyed.

Renting to Japanese

Is there any law which forbids the renting of land for cash rent to Japanese or other non-citizens? Is it legal to rent to Japanese or non-citizens on a crop share basis? Can a Japanese family be hired to work a garden or other crop and be paid monthly for their work? — Subscriber, Arroyo Grande.

The anti-alien law does not prohibit the renting of land to Japanese or any other aliens. The provision of this law is to the effect that in case such land is rented to an alien the state of California may bring an action in its own name to escheat the land on any interest which the alien acquires. As far as the contract between the lessor and lessee is concerned, it is entirely valid. It has recently been held by the federal court that a crop lease is not within the operation of the anti-alien law; that is to say, that in case of a crop lease to a Japanese, the state has no right to bring any action of escheat against the Japanese and can obain no relief thereunder. There is no law which prohibits in any way the hiring of Japanese to do labor where they are paid for their services.

Pasture Rent

A year ago a party pastured stock with me. I have notified him by letter to remove them twice. What steps must I take to collect my pasture bill?—Subscriber, Holmes.

Persons pasturing horses or stock are given a lien dependent on possession for such pasture. If the amount due for such pasturage is not paid within 20 days after it shall have become due, then the lien holder may proceed to sell the property at public auction by giving ten days previous notice of such sale by adverisement in a newspaper published within the

county within which the property is situated. The proceeds of the sale must be applied to the discharge of the lien, costs of keeping and selling the property, and the remainder, if any, paid over to the owner.

BUILDING UP SOILS VS. FEEDING CROPS

(Continued from Page 675.)

following winter while the dynamited trees escaped unharmed.

A plant food is any material which enters the plant body with benefit to the plant. It is a mistake to suppose potassium, phosphorus and nitrogen the only plant food elements, notwithstanding this has been long the prevailing custom.

A fertilizer is any material which when incorporated in the soil promotes fertility whether it is a plant food or not, though fertilizers nearly always do contain plant foods.

The foregoing table gives authentic average content of many common fertilizer materials.

To attain the ends in view deep plowing is desirable wherever practicable. An apparently barren cornfield in an Eastern state is known to have produced 12 bushels per acre without fertilizer after having been broken deeply and a subsoiler run still deeper in the bottom of the furrow.

The passage of water in "solid" sheet downward through the soil favors oxidation by drawing fresh air down after it. Then breaking up the packed surface after each rain or irrigation further favors oxidation. The growing of deep rooting cover crops with large root systems is beneficial in several ways. These root systems decaying in the soil depths carry humus far down and form vertical channels facilitating downward movement of air. Melilotus, both Indica (the yellow flowered) and alba (the white flowered) are good examples of this kind.

As to moisture requirement, the needs of some soils are greater than of others to maintain the same degree of efficiency, but a good practical test is to squeeze a sample of the soil in the hand; if it holds together in an easily crumpled lump it is suitably moist.

The addition of plant foods to the soil may be profitably limited to those that are deficient as shown by suitable chemical analysis. But even when certain ones are already plentiful in the soil these should be made available. Certain soils of the San Fernando Valley contain more than one per cent phosphoric acid. It is evident that additions of phosphates to such soils is sheer waste. Additions of finely ground lime carbonate to them are equivalent to adding phosphates. Likewise the soils of all Southern California are known to contain potash sufficient for many years' crops. Additions of nitrate of soda, or sometimes gypsum, are equivalent to adding potash, for these fertilizer materials are efficient in unlocking the native potash supplies.

In cases where a soil is invaded by destructive bacterial or fungous pests, or even small worms such as eel worms or nematodes it may be advantageous to destroy these even with destruction of the beneficial organisms. This can be effectively done by treating the soil with ferric sulphate (not copperas, which is ferrous sulphate). After this has been allowed to act for a few weeks it is easily destroyed by adequate additions of freshly slaked or quick lime, and then reinoculate with wholesome cultures of the desired organisms. This will leave the soil more fertile than before the treatment, even neglecting its improved biologic status. By following out the principles stated above any soil could be made productive of the crops suited to the particular climate.

Book Review

NUT GROWING

"Nut Growing," by Robert T. Morris, published by the Macmillan Company, New York, at $2.50.

This book touches upon seeds, soils, transplanting, grafting, hybrids, pruning and orchard care of nut trees in general. It is written from an Eastern viewpoint and touches first upon hickories then walnuts, hazels, chestnuts, pines, beechnuts, oaks and finally almonds. However, under walnuts appears: "California has taken the lead in walnut growing with a climate and soil particularly well adapted to the needs of the species." This is, of course, in that chapter of the book which has to do with the "Persian" walnut, the "Madeira" walnut, "Chile" walnut, "French" walnut, "English" walnut and numerous other names for Juglans regia. The California walnut, which we Californians like to term the "English" walnut or "Madeira nut," is a term used in the book only for Juglans californica, or the native black which grows over our hillsides. The author quotes largely from Carlyle Thorpe, manager of the California Walnut Growers Association, as to the magnitude of California's walnut industry. The Chinese nut, sinensis, is referred to as having a tendency to store up a surplus of the tannin and other bitter elements, thus making a nut of low grade, sometimes unpalatable. Almonds are dismissed with only three pages with practically no reference to culture but the author touches upon the history and importance of the commercial almond and the efficient work of the California Almond Growers Exchange. As may be noted from the preface of the book the author's idea is to so describe the various types of nuts that their commercial importance may be generally understood:

"Here is a book intended to serve as a general guide for leading the reader into a new field of agriculture. When the subject has captured the imagination of amateurs lust of the chase will do the rest. Many hands will make light work of research and experiment. Tree nuts are the only ones described and not many kinds of these—just enough to cover the principles and main points of nut growing. It is necessary to omit notes on hundreds of varieties and species of nut bearing trees and shrubs. Tropical nut trees bearing crops of nuts for which there is a large established market are interesting to people of the tropics, but this book does not go so far toward the equator. Nut bearing annual plants, including water plants which furnish a basic food supply for many people in distant countries, belong to a large volume not yet written."

1922 CATALOG

George C. Roeding of Fancher Creek Nurseries is out with his 1922 catalog. It is a beauty and as valuable as it is beautiful. It devotes several pages to methods of planting, care of and bringing to bearing various fruit trees. Of course primarily the catalog is given to descriptive and general hints as to values of various fruits and ornamentals. Here, for instance, is one of the valuable hints given in the text of the book:

"There are many things to consider before entering into the business of fruit growing. In these days fruit growing should be specialized. This does not mean that a man with his family living on his farm should not have a small home orchard, berries, vegetables, alfalfa, a cow, poultry and hogs. It is a fact that if more of our orchardists would give closer attention to these details they could not only operate their properties more economically, but derive much more pleasure than they now do from them.

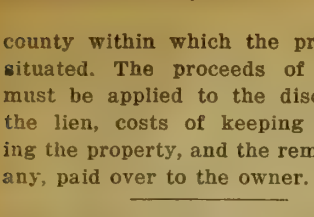
"The preparation of the soil is practically the same for all sections of California. It is always a good plan when convenient to first cultivate the soil well and devote the land to the raising of alfalfa for three or four years, for alfalfa will redeem soil very much more quickly than it can be built up in any other way. The land should be carefully plowed and the roots cleared out before planting trees. This can best be accomplished by thorough plowing, followed up by harrowing until the soil is friable. This work should be done in the fall and early winter months before the rains set in if possible. Sub-soiling is essential to any well developed land as it loosens the earth and leaves it in a condition that will permit deep penetration of the roots.

"Where irrigation must be practiced, grading must be done so that all spots will be accessible from laterals running from the main ditch, and should there be any low spot where the water is likely to stand too close to the surface, drainage should be carefully considered."

FIGHT PINK BOLLWORM

The conference called by the federal horticultural board of the United States department of agriculture on account of the recent discovery of the pink bollworm in Ellis and Grayson Counties, Texas, and held at Dallas, December 2 and 3, brought together the important interests related to cotton from Texas, and official and other representatives from other cotton states. The conference developed an absolute unanimity of opinion that every measure should be taken for the extermination of the pink bollworm pest in Texas and other Southern states. Unqualified assurances of support in all measures necessary were given by the spokesman of each of the Texas delegations and by representative growers from the newly infested counties.

Supervisors of Alameda County have formally protested to the railroad commission against granting further permits for stage or truck lines within the county. Damage to roads is reason alleged.



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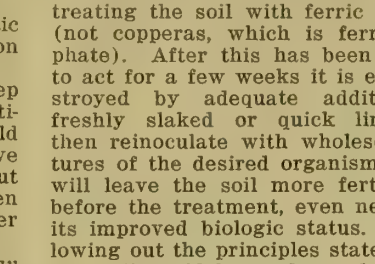

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3760-3757. A Smart Costume. Blouse 3760 cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Skirt 3757 cut in 8 sizes: 24, 26, 28, 30, 32, 34, 36 and 38 inches waist measure. To make the costume as illustrated will require 2¾ yards of striped material and 2⅞ yards of plain material 42 inches wide. The width of the skirt at the foot is about 2⅛ yards. Two separate patterns, 10 cents for each pattern.

3786. Girl's Dress. Cut in 4 sizes: 6, 8, 10 and 12 years. An 8 year size requires 3⅝ yards of 42 inch material. Price, 10 cents.

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Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cents) stamps for each number. In order to furnish our readers with the very best NEW YORK styles, all patterns ordered are filled in NEW YORK. Do not expect patterns under **Two Weeks** from date of order.

CATALOGUE NOTICE

Send 15c in silver or stamps for our Up To Date Fall and Winter 1921 Catalogue, containing over 500 designs of Ladies', Misses' and Children's Patterns, a concise and comprehensive article on dressmaking, also some points for the needle (illustrating 30 of the various simple stitches) all valuable to the home dressmaker.

PATTERN DEPARTMENT

California Cultivator Los Angeles

Household Department

THE YEAR AND THE DAYS

The year is a general riding by,
A general stout and tall,
And little it matters how hard we try,
We cannot keep step at all.
No matter how eager and spry, 'tis clear,
We cannot keep pace with the mighty Year!

But, ah, there's a company called the Days,
The merry and brave and wise;
They march to the music that duty plays,
Whatever the changing skies,
And no one need stumble, and none need fall,
And we may keep step with them, comrades all!

Make ready!—Salute!—as the great New Year
Rides by to the roll of drums;
And then fall in line with a soldier's cheer,
For each little day that comes.
The Days are like children that come and go—
The year can take care of himself, you know!

—Frank Walcott Hutt.

A NEW YEAR'S CARD

Now what is here?
A word of cheer
To herald in another year;
May all its days be free of blame—
A little nobler than your aim;
May all its labors be confest
A little better than your best,
And all the joys within its scope
A little brighter than your hope;
And may each year be found, when past,
A little dearer than the last.
—Arthur Guiterman in Woman's Home Companion for January.

The glad bells are ringing and hearts, be ye singing;
The world still is wide, and lo, heaven bends o'er!
The past is behind us; its griefs shall not bind us,
The way still is open; the goal is before.
New Year, let us greet you; we're happy to meet you;
We're glad for the chance that you give us to strive.
With naught of regretting, past sorrows forgetting,
We'll be happy today and be glad we're alive!

MY NEIGHBOR AND LEMONS

By Annette Squire

YESTERDAY morning the neighbor that I'm never sorry to see came into my kitchen just as I was putting "the grated rind and juice of one lemon" into a sunshine colored concoction, and "stirring it well."

"Is that," she demanded, "all that you do with your lemons? Put them into frivolous things like that just to make your man and kiddies grin? Listen to me, nice friend; a real, live, plump lemon can be made good use of in at least a dozen ways besides mere flavoring."

"Indeed!" said I. "A dozen! Prove your contention. Enumerate the wise ways in which you use lemons."

"Agreed," said she, "but I'll not be in the least offended if you try, later on, to see if a taste of that will make me grin. What is it?"

"Fluffy orange marmalade lemon pie!"

"Oh! Um! Well, I still say that you could have used that lemon in a dozen other ways. I squeeze lemon juice on the drainboard of my sink to whiten it; I take out ink stains with it; I put it in my wash boiler to bleach my clothes; I use it for my chief cosmetic. A little juice squeezed in a basin of water takes the shine off this elegant nose of mine, acts as a gentle astringent on my nice smile wrinkles, and keeps the whole of my distinguished and unique face two shades whiter than otherwise it would be. And lemon it is in the rinse for my shampoo that puts the shine and the fluffiness into this hair of mine! As for my hands, when they are manicured, lemon softens the cuticle and bleaches the nails and obliterates the needle pricks and the paring knife cuts. Surely you have used it to take stains off your fingers?"

"Of course," said I, popping up from the oven. "Go on. That's only eight or nine uses. And you've used a lot of your words to praise yourself. You must work harder than that for your grin."

"Oh, I merely paused to ascertain whether you ever used it for anything besides cooking. I use it, diluted, as a tooth wash. It is antiseptic, you know. Some of the nature sanitariums are using it for wounds and bed sores. Of course, you know it has cured many a sore throat. When the children have one of those long, spasmodic coughing spells at night I feed them lemon juice in hot water, slowly, a spoonful or a swallow at a time. If the cough is bad I add a very small pinch of cayenne pepper. The lemon soothes the irritation; the warmth and the cayenne relax the larynx, and we all go back peacefully to sleep.

"I suppose you've heard how ships, even as far back as the middle ages, carried regular rations of lemons, or limes, as they called them, though they were really a kind of lemon, to keep the sailors free from scurvy? And you know how they used lemons in the late war? Why, they even gave the soldiers in the trenches lemon drops!"

"Candy!" I exclaimed. "How nice of them!"

"For medicinal purposes," she said severely, but quirking the corners of her mouth. "It is estimated that if everyone would use one ounce of lemon juice daily the doctors would no longer be bothered with all those doleful rheumatic and gouty and hyperacid patients."

"All right," I said, as she took a little breath. "That pie came out lovely. Now go on to the vitamines."

"Vitamines! Don't get me started talking with such scientific words! I might feel called to go on talking to you about the potassium in lemons—food lime, you know. No mineral is more needed in the building and repairing of the body . And there's the malic acid—that's what does you good in apples. And, my dear, did you know that they give lemon now in fever cases? They use the juice of one lemon to a quart of water and add two or three ounces of malt sugar; and very sick patients usually are benefited by drinking this, even to two quarts a day. But I'd rather take my vitamines and citric acid and potassium and malic acid as a preventive, when I am quite well and can enjoy—well, something like that delectable stuff you have there."

"This?" I cried. "Why, this is merely flavored with lemon—and with orange! We like those flavors."

"They are appetizers," agreed my neighbor, squaring herself to the table by the sunlit window, "they stimulate the flow of saliva and of the gastric juice."

"When you use lemon juice instead of vinegar in your salads you mean," I offered, "or when you put a slice in your cup of tea, or serve it with fish or chicken."

"I mean when you use it in pie," she declared with emphasis.

"You admit then that this lemon is not wasted?"

"Admit it! Gracious! I haven't time for that! Give me some! The very look of it is ravishing!"

I set the white and golden concoction before her. It really looked very nice. It was like the sunshine of our valley with the snow of our mountains drifted across it.

She tasted. She grinned. "That is good," she said. "Just how do you make it? I think I could feed Jim and the boys quite a little extra of the antiscorbutic vitamines in this easy to take shape! I have an idea they wouldn't object at all!"

She flashed me her merriest smile.

It is good to have lemon in the diet. It is also good to have a neighbor that you are never sorry to see. For it is true that "a merry heart doeth good like medicine."

HINTS FROM HOUSEKEEPERS

For Convenience and Economy

While we value the Cultivator highly as a weekly visitor in our home, I will confess to the habit of turning to the household department the first thing to see what new hint or recipe there is that I can make use of. I am glad to learn new and helpful things about housekeeping and home making, and I thought that perhaps a few hints that I've found good might be of use to others.

When scalding a chicken the feathers come off more easily and the bird is more readily cleaned when a teaspoon of baking soda is put into the scalding water.

Flour for gravies is more quickly stirred smooth if warm water is used.

The idea of using colored tea towels may at first shock the fastidious housewife. Try having at least one towel on the rack of worn gingham or voile or any soft weave goods and see how satisfactory it is and how easily kept clean.

Outing flannel pillow cases for cold weather on the sleeping porch are very comfortable. The least worn parts of old blankets can be made into pillow slips that will wear for several months.—Mrs. H. M. L., San Jacinto.

Says Sam: One fellow I never could understand is the "100 per cent American" who calls his home town a "hole."

New Lamp Burns 94% Air

Beats Electric or Gas

A new oil lamp that gives an amazingly brilliant, soft, white light, even better than gas or electricity, has been tested by the U. S. Government and 35 leading universities and found to be superior to 10 ordinary oil lamps. It burns without odor, smoke or noise—no pumping up, is simple, clean, safe. Burns 94% air and 6% common kerosene (coal-oil).

The inventor, V. S. Johnson, 31 N. Fifth St., Portland, Ore., is offering to send a lamp on 10 days' FREE trial, or even to give one FREE to the first user in each locality who will help him introduce it. Write him today for full particulars. Also ask him to explain how you can get the agency, and without experience or money make $250 to $500 per month.

DELICATE GIRLS

Many who are inclined to over-thinness, or anemia and dread winter's cold, should take

Scott's Emulsion

and keep on taking it and realize how effectually it warms and strengthens the body and helps make winter enjoyable.

Scott & Bowne, Bloomfield N. J., 20-31

Take KI-MOIDS for Indigestion.

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RIVETED WATER PIPE

Montague Well Casing and Riveted Steel Pipe for Surface Irrigation.

Oil and Water Tanks, Siphons, Stacks and Steel Flumes.

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San Francisco.

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LEARN

ACTUAL REPAIR WORK

733 S. Hope Los Angeles

HOUSEHOLD QUERIES

Hominy

Please print in your household department recipe for making hominy. Would like some recipes for cooking also.—Subscriber, San Fernando.

Dissolve 2 ounces soda lye (2 tablespoons, level) in gallon water in agateware pot. Place white dry corn in this and boil hard for 1 hour. Place corn in wire basket or mosquito net bag and let cold water run through it for 5 or 6 hours. If this cannot be done place in large tub of water and change water often and stir frequently for 6 or 8 hours. This is to remove the lye. Rub thoroughly between hands to remove hulls or hulls also may be removed by revolving in barrel churn. When hulls and eyes are removed place hulled corn back in agateware kettle with water and cook until tender. Place on coarse screen and wash out remaining hulls and eyes. This will not keep long unless canned. Fill into cans, add boiling brine of 2 ounces (2 tablespoons) salt per gallon water. Sterilize cans in pressure cooker 45 minutes at 15 pounds pressure 250 degrees Fahrenheit, or boil 1½ hours on each of three successive days.

Hominy Souffle.—Mix 1½ cups hominy with yolks 2 eggs, 1 cup milk, ½ teaspoon salt, 1 tablespoon melted butter. Cut and fold in the whites beaten stiff, pour into buttered baking dish, set in pan of hot water and bake until firm, about 30 minutes.

ENGLISH FRUIT CAKE

One pound butter, 1 pound light brown sugar, 9 eggs, 1 pound flour, 2 teaspoons mace, 2 teaspoons cinnamon, 1 teaspoon soda, 2 tablespoons milk, 3 pounds currants, 2 pounds raisins, seeded and finely chopped, ½ pound almonds, blanched and shredded, 1 pound citron, thinly sliced and cut into strips. Cream the butter, add sugar gradually and beat thoroughly. Separate yolks from whites of eggs; beat yolks until thick and lemon colored, whites until stiff and dry, and add to first mixture. Then add milk, fruit, nuts and flour mixed and sifted with mace, cinnamon and soda. Put in buttered deep pans, cover with buttered paper, steam three hours, and bake one and one-half hours in a very slow oven, or bake four hours in a very slow oven. The steaming makes the cake more satisfactory and the baking brings out the richness of flavor.

SEEKERS AFTER GRACE

Wife—"Did you notice the chinchilla coat on the woman sitting in front of us at church this morning?"

Huband—"Er—no. Afraid I was dozing most of the time."

Wife—"Um. A lot of good the service did you."—Chicago Tribune.

Satisfactory home electric light plants can be operated with the same engine you use on the cream separator. Be sure, however, that your engine is not given to "cutting out"—which causes lights to flicker.

There's two kinds of people always in hard luck; them th't did it, but never thought; and them th't thought, but never did it.—Josh Wise.

Josh Billings once said: "It ain't so much ignorance that does harm as their knowing so darned much that ain't true."

Selfishness does not always apply to the man who is unwilling to share his belongings with others, but it also applies to the man who may have some practical ideas and will not pass them on to his neighbor.

The home water supply system is easily arranged by having an air compressor on supply tank, both easily operated by a 2-H. P. gas engine. A small feed mill can be arranged to utilize the same power.

Which?

Would you have a rosy, flower strewn way,
With the calls of peace and rest each day,
All friends and love, and a sky that's bright?
Ah, remember the day leads to the night!

No! tackle the doubt, make friends with pain—
And never mind if there's sun or rain;
Rise by the stumbling blocks in your way,
And remember—the night leads to the day. —Edith McKay.

HOW TO CLEAN PLUMES

Use large china bowl which is perfectly dry. Pour in 1 pint gasoline and wash feathers in this to remove worst of dirt. Empty and wipe the bowl dry, then pour in another pint gasoline and mix two tablespoons wheat flour. Stir until a thin paste is formed. Lay feather in paste and wash from stem out by rubbing with ends of your fingers. Do not rub back and forth as this ruffles flues. Squeeze gasoline out by drawing feather through closed hand. Shake in air until almost dry and roll feather in cornstarch. This does not remove the curl from feathers as does washing in soap and water. Feathers and plumes cleaned by this method can be made to look like new.

A WET WEATHER BAG

A cretonne sewing bag is a thing of beauty and a joy forever when Old Sol is smiling, but when Jupiter Pluvius is master of ceremonies it fails to keep the sewing materials dry, not to mention the face powder, and we all know the importance of "keep the powder dry." The point is that a bag made of a leather substitute having a waterproof coating, makes a better wet weather sewing bag than cretonne. While it doesn't come in flowered designs it may be had in many shades and colors.

MORBID CURIOSITY

After all our plans to obtain public trials of offenders against the law, it is ironical that this publicity should be misused. A Chicago judge is so exas-

> "There are two kinds of success, one that of rare genius and the other that of the ordinary man who does ordinary things a little better than his fellows." —Theodore Roosevelt.

perated with the idle "sightseers" in his court room that he locked up 32 of them for two hours and threatened them with "twenty days" if they came back to look on any more.

Making an entertainment of the misfortnunes of others is a sign either of a low grade of mental development or of shocking bad manners. One hesitates to say that it is also a sign of a cold heart, though such is probably the truth.

The rule of decency in a case of moral disaster involving the victim in a court trial is exactly the rule of decency in case of a physical injury. A well bred person finds out whether there is anything he can do to help or relieve suffering. If there is, he lends a hand. If there is not, he goes along and minds his own business and does not hang around to watch the body lifted into the ambulance.

The morbid curiosity which peers at a wounded body or at a wounded soul is one of the least lovely traits in humankind. It is a clear indication of something unwholesome in the disposition so given, and the trait probably dates back to the genealogical origins of hoofs and tails—not to mention long ears—which it is the main business of human self-discipline to eradicate.

If we feel ourselves given to curiosity of this sort it is time to call a halt. —Boston Globe.

SUITABLE PHRASING

Appropriately enough, the sounds that come through the door labeled "Voice Cultivated" are usually harrowing.—Pittsburgh Sun.

100 Per Cent Efficient

The farmer's humble assistant in action. Photo by F. A. Monro, Covina.

PREPARATION OF VINEGAR

The University of California has recently reprinted a bulletin giving the complete directions for the preparation of vinegar from cull fruits. The conversion of cull apples, pears, grapes, oranges and other fruits containing moderate amounts of sugar offers a profitable means of utilizing such material. The bulletin, which was prepared by W. V. Cruess, is No. 287 of the University of California Experiment Station. It will be sent on request to College of Agriculture, Berkeley, California.

PUT BABY IN A PIE TIN

When mother is busy around the kitchen and baby (too young to walk or crawl but fond of "sliding") becomes eager to be on the move, try putting her in your largest pie tin and let her slide on the floor to her heart's content without getting dirty.

CAN'T FOOL 'EM

Two negroes were engaged in conversation when one of them became very much annoyed by the persistent attention of a large fly.

"Sam, whut kin' a fly am dis?"

"Dat am a hoss fly."

"Whut am a hoss fly?"

"A hoss fly am a fly whut buzzes 'round cows an' hosses an' jackasses——"

"You ain't makin' out for to call me no jackass?"

'No, I ain't makin' out for to call you no jackass, but you can't fool dem hoss flies."—Forbes Magazine.

THE ONLY ONE HE KNEW

"Could I sell you Boswell's 'Life of Johnson,' sir?" asked the book agent.

"Certainly not," replied the self made millionaire. "I'm not interested in the careers of colored pugilists."—Birmingham Age-Herald.

DOMESTIC T. N. T.

"You must not let your wife get so excited."

"Goodness gracious, doctor, if I tried to stop her from getting excited she'd get so excited she'd raise the roof."

COURAGE

The brave man is not he who feels no fear,
But he whose noble soul its fear subdues,
And bravely dares the danger nature shrinks from. —Joanna Baillie.

NO SYMPTOMS

"Who is the mysterious stranger?"

"Some kind of an investigator."

"Working for the government?"

"I doubt it. He keeps pretty busy."—Detroit Free Press.

A detour is the roughest possible distance between two points.—Syracuse Herald.

You can also judge a man by the records he keeps on the phonograph.—Rochester Times Union.

Modern novels give us glimpses of almost everything in the world except good grammar.—Indianapolis Star.

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Make Fruit Growing Profitable
Plant Roeding's "TRUE TREES"
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Just Off the Press
Write for Your Copy
General Stock of Deciduous and Citrus Fruit Bearing Trees, Ornamentals, Vines and Roses.
CAUTION
Some varieties will be scarce again this season. Order early and avoid disappointments.
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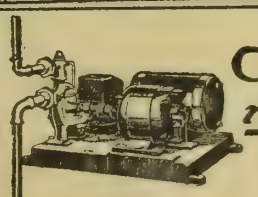

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Water *direct* from the well at a turn of the faucet. No storage tank to cause trouble.

Our new descriptive booklet, "How Things Have Changed," will interest you. Write for it today.

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The Tankless Water System
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is "simply perfect because it's so perfectly simple." No belts, valves or gears. Pump has *only one moving part.*

Simplicity of design, superior workmanship and the best of materials insure long life—dependable service—low cost of up-keep

It's a hummer—the best we've ever seen.

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Mail all classified copy to Los Angeles Office.

POULTRY

Baby Chicks—When you buy baby chicks the big thing for you to remember is QUALITY, in both the chick itself and the parent stock. By investigating you will find that our chicks are in a class by themselves; for we have absolutely the best equipment obtainable to produce them and very high class stock from which we get our eggs, and then, too, we know how to handle and deliver chicks. We are hatching every week White Leghorns and Anconas that will lay; R. I. Reds and Barred Rocks that are well bred and will produce. Send for our circular and prices and order immediately for 1922 delivery. ORANGE COUNTY HATCHERY, Santa Ana, California.

"It Pays to Buy the Best"

BABY CHICKS

Book your order with us now for early Spring Chix—from our own selected flock of 4000 birds. Order now and be sure of your chix. WHITE LEGHORNS ONLY—the Laying Strain.
STEELES' EGG RANCH,
Phone Gardena Exchange 692.
Moneta, California.

Walter Hogan Stock White Leghorn Chicks. December and January chicks come from Winter layers. The cockerels are in the market for early broilers. You can have the chicks out of the brooder house in time to put in a Spring brood. We are hatching the chicks and ship by Parcel Post, safe arrival guaranteed. You can do what others do—make money with poultry. Lyon Hatchery, Gardena, California.

We Are Now Booking Orders for S. C. White Leghorn Baby Chicks, from strong, healthy, vigorous stock. Bred especially for heavy egg production, from two hundred to two hundred and eighty egg strain. If you want strong, healthy baby chicks, place your orders with the Vineburg Hatchery. All baby chicks guaranteed safe delivery. Vineburg Hatchery, Vineburg, California.

Santa Cruz Chicks—Our Specials are White Leghorns, Buhrman's White Wyandottes and "Hill Crest" Reds, but also hatching, choice Brown Leghorns, Anconas, Buff, White and Black Minorcas, Barred and White Rocks and Reds, Buff Orpingtons. Interesting folder ready. B. W. Archibald, Soquel, Santa Cruz County, California.

BABY CHIX
LAYERS ARE PAYERS
Ours pay. Hens tested and mated for egg production. R. I. Reds, Barred Rocks, Black Minorcas $20.00 per 100. White Leghorns $17.00. Expressage prepaid on January and February deliveries.
Box 9, Denton Poultry Yards
Campbell, Cal.

White Leghorns—Eggs for hatching our specialty, produced right, selected right, shipped right; 100 per cent fertility guaranteed. A laying strain of proven merit. Prices very reasonable. Send for folder "Secret of Success." Curtis White Leghorn Ranch, R. 1, Box 29, Gardena, Cal.

Baby Chicks—From the best 200 egg strain of White Leghorns in the valley. Please book your order early if you want chicks on a certain date. Established 10 years. Send for price list. Visitors welcome. The White Leghorn Hatchery, Pomona, California.

Baby Chicks from my carefully selected flock of pure-bred S. C. White Leghorns. I am accepting orders now for spring delivery. Make your arrangements early and write for prices and particulars now. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

Baby Chicks from 227 egg strain of heavy winter laying S. C. White Leghorns. Book your order now for 1922 delivery of guaranteed chicks and hatching eggs. Pullets and breeding stock. Meyer Poultry Farm, Route A, Box 17-C, Modesto, California.

White Leghorn Baby Chicks from heaviest laying stock. Booking orders now for spring 1922 delivery. Safe arrival live vigorous chicks guaranteed. Prices on request. Reliable since 1898. MUST HATCH INCUBATOR CO., 438 Seventh St., Petaluma, California.

S. C. White Leghorn baby chicks from our own bred-to-lay stock. Now booking for January to July delivery. Breeding cockerels for sale. Model Poultry Farm, W. C. Smith, prop., Corning, California.

Baby Chicks—Single Comb White Leghorn Only. These are certified chicks from inspected flocks, approved of by Alameda County Farm Bureau, Poultry Department. Castro Valley Hatchery, Hayward, California.

White Leghorn Baby Chix from Petaluma's heaviest producing stock. We guarantee safe arrival. Literature on request. Pioneer Hatchery, 409 Sixth St., Petaluma, California.

White Leghorn Hatching Eggs and Chicks—Stock trapnested 18 years for vitality, production and persistency, circular sent free. Bonnie Brae Farm, Burbank, California.

Barred Plymouth Rocks — "Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Vodden, Los Gatos, California.

Anconas, Our Sixth Year—Cockerels, single birds, $3.50 and $5.00. Satisfaction guaranteed. A. S. Wilkinson, Winton, California.

We Are Now Booking Orders for White Leghorn pullets for 1922; two or three months old, any amount. Forster Bros., Box 198A, Sunnyvale, California.

POULTRY

Eggs and Stock For Sale—Booking orders for White Muscovy Quackless Duck eggs 35c each. White Wyandotte eggs $1.50, $3, $5 per setting. Goose eggs 50c and $1 each. Few breeders for sale. Turkey eggs from Chicago, Madison Square and several coast show winners 50c, $1, $2, $3 each. Pearl Guineas $5 a pair; eggs $2 a setting. White King Pigeons $3 unmated pairs, mated working pairs $5. Special price on 10 or more pair. White Leghorn eggs from standard and utility stock $1.50, $3, $5, $10 per setting. White Pekin Duck eggs 35c each. Partridge Plymouth Rock eggs $3 and $5 per setting. All our stock are from prize winners at various shows. Send for catalog. Paradise Valley Poultry Ranch, National City, California.

Baby Chicks—Barred Rocks, R. I. Reds, and White Leghorns. All our chicks are from Hoganized stock. Prices: Rocks and Reds, $20 per 100; Leghorns, $17; delivered to you by parcel post, prepaid. Safe arrival guaranteed. Write for circular. Established 1915. Hargett & Son, Route 2, Box C, Compton, California.

ROUND WORMS IN POULTRY
Expelled by "Impco Brand" Tobacco Dust. Recommended by your University Experiment Station. Ratio: 1 pound "Impco" to 50 pounds dry mash. Free literature on request. International Milling Company, 814 Montgomery Street, San Francisco, California.

Baby Chicks, Hatching Eggs, from Hoganized hens, well mated. White and Brown Leghorns, R. I. Reds, Barred Rocks. Safe arrival guaranteed. Order early. Write for circular. Stubbe Poultry Ranch & Hatchery, Box 67-E, Palo Alto, California.

Penn's Quality Barred Ply. Rocks and Ferris heavy-egg-type White Leghorns. Rock Cockerels from our well known Utility Strain at $5.00 and up. Satisfaction guaranteed. Chix and eggs for 1922 delivery. GOLDEN RULE POULTRY FARM, Porterville, California.

Chicks, Eggs — Hoganized White Leghorns, Brown Leghorns, Black Minorcas, Rhode Island Reds, Barred Rocks, Anconas, Blue Andalusians. Free circular. Order early. McDonald Poultry Ranch, King Road, San Jose, California.

Finest Hatchery in the World at Pebbleside Poultry Farm. Baby chicks and hatching eggs from our own selected heavy layers. Visit our farm and have a look. Pebbleside Poultry Farm, Sunnyvale, California.

Baby Chix from mature White Leghorn hens mated to cockerels from mothers trapnesting 240 eggs and better in pullet year. Also Barred Rocks and R. I. Reds. Hawleys Hatchery & Poultry Farm, Route A, Box 315a, Lodi, California.

Watch Us Grow—Baby Chicks. We are now booking orders for the season of 1922. Brown and White Leghorns, Rhode Island Reds, Barred Rocks and Anconas. Safe arrival and satisfaction guaranteed. E. W. Ohlen, Campbell, California.

Baby Chicks—Barred Rocks, Rhode Island Reds, Single Comb White Leghorns. Book your orders now for January and later deliveries, from our own stock. E. A. FISCHER POULTRY RANCH, Route 2, Compton, California.

Electric Hatched Chicks are the best. They are hatched right and are stronger and easier to raise. Satisfaction guaranteed. Lightening Hatchery, Seabright, Cal.

Brown and White Leghorn Baby Chicks: Rhode Island Reds from carefully selected heavy laying stock. Satisfaction guaranteed. Anderson's Hatchery, Modesto.

For Sale — Baby chicks, Barred Rocks, Rhode Island Reds, Brown and White Leghorns. Safe arrival and satisfaction guaranteed. Tobener Hatchery, Route 2, Box 306, San Jose.

Hatching Eggs—We are now booking orders for Eggs from our well selected and mated heavy laying stock S. C. White Leghorns only. Pine Tree Poultry Farm, Los Gatos, California.

Book Orders for Baby Chicks from R. I. Reds (Owens Farm), White Leghorns and Anconas; also official strain of White Rocks. Los Angeles, R.F.D. 1-958. Phone Garvanza 1941.

Los Gatos Hatchery solicits your order for purebred W.L. Chicks 6 weeks putlets, laying pullets. Vigorous heavy laying stock. Shannon Station, Los Gatos.

Hatching Eggs from well Hoganized Walter Hogan strain White Leghorns. Will run 96% fertile. $1.50 for 15 or $8.00 a 100. C. M. Bradford, Hemet, California.

White Leghorn Pullets for sale. Three thousand three months old January 4th. Elmer E. Thompson, R. 1, Box 173, Petaluma.

Hudson White Leghorns made official 200 egg records in Oregon, Washington and last Missouri contest. Hudson Poultry Ranch, Escondido, California.

Baby Chicks—Thoroughbred White Leghorns, Hoganized. No dead or weak ones charged for. Schellville Hatchery, Schellville, Sonoma County, California.

Pit Games—Old and young trios. R. H. Crane, Santa Rosa.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

GOATS

For Sale—Highest class pure bred and grade Toggenbergs. Milk goats. La Corona Goatery, El Monte, California.

FARM LAND FOR SALE

Government Land in California—Suitable for general farming, alfalfa, small grains, potatoes, apples, etc. Can be filed on under desert land laws; no residence required; no location fee; ditch to irrigate land now under construction; Cheap water rights on easy terms of payment. For particulars call or address, 716 American Bank Building, Los Angeles, Calif.

WE WANT "GO-GETTERS"
Sutter Basin is ready for "Go-Getters." It is a practical farming project in crops today. Deep, rich soil with irrigation and drainage system, river and rail transportation. In the heart of the Sacramento Valley. Very liberal terms to men who know how and will work. Write today. Sutter Basin Company, California Fruit Building, Sacramento.

Merced: Yosemite's Gateway, offers best values in irrigated fruit and alfalfa lands. Free information; reference to reliable dealers. Insist your title be certified. Merced Title Guaranty Co., Merced.

Farmers, Attention—Literature, newspapers and price list of farm lands of Colusa County, the banner County of the great Sacramento Valley, free for postal card. F. B. Pryor, Colusa, California.

For Sale—Dairy, 20 acres, fully equipped, 23 cows, fine buildings, plenty water, milking machine, silo, leased for oil, cheap. Route 3, Box 28, Santa Ana.

For Sale—One acre up, any quantity; plenty of water, terms. Yours for a square deal. W. E. Speer, Manteca, California.

For Sale — Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

Poultry Ranch — 1¼ acres, equipped. Dandy little place. Lots of fruit, good loca., price right. PO Box 386, Riverside.

DUROC-JERSEYS

Weanling Boars and Gilts by Pathfinder Wonder (Great Wonder I Am ex an 800 lb. Pathfinder sow) for $10 each. Bred sows and gilts. Derryfield Farm, Capital National Bank Bldg., Sacramento, California.

Greenwood Farm Durocs — Moderate prices on bred gilts and weanling boars. Select individuals. Most popular breeding. H. C. Witherow, Mgr., Live Oak, Sutter County, California.

Boyana Big Type Durocs — Breeding stock, priced right for sale. Inquiries invited. Satisfaction guaranteed. J. Boyd Harrold, Dixon, California.

Big Type Durocs—Better Durocs at right prices. Harvey M. Berglund, Dixon, California.

Winsor Ranch Durocs—The best of stock at reasonable prices. BONITA, CALIFORNIA.

BERKSHIRES

Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Calac Orchards, Martinez, California.

POLAND-CHINAS

Big Boned Poland Chinas—Bred gilts and young boars priced to sell at once. Young stock, either sex, for sale at all times. Bassett Bros., Hanford, California

CATTLE

Guernseys — Grape Wild Farms — Berkshires—Young bulls, from calf age up to 16 months old, of May Rose breeding and out of A. R. cows. Bred sows and gilts, service boars and pigs of both sexes for sale. Grape Wild Farms, Escalon, California. A. B. Humphrey, Proprietor.

Berylwood Stock Farm—Breeders of registered Holstein cattle and Duroc-Jersey swine. Every cow an A. R. O. and T. B. tested. Bulls and females for sale. J. W. Snodgrass, Hueneme, California.

Shorthorns bred for range purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome; information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Polled Herefords and Durocs — Diablo Stock Farm, G. W. Emmons, Prop., Danville, California.

Some Choice Registered Holstein heifers and bulls of serviceable age for sale. J. W. Scudder, Escalon, California.

Winsor Ranch Jerseys—Bull calves with production behind them, at reasonable prices. BONITA, CALIFORNIA.

MISCELLANEOUS

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

Powerene—County Rights Free. It equals gasoline at 5c. Adds power, prevents carbon, saves repairs. Guaranteed safe and harmless. To introduce, the equivalent of 20 gallons prepaid $1, if ordered now. P. Barnes, Dept. E, Santa Rosa, California.

Hemstitching and Picoting Attachment; fits all sewing machines. Price $2.00. Checks 10c extra. Light's Mail Order House, Box 127, Birmingham, Ala.

Avoid Law Suits by having your property lines properly surveyed and established by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

HORTICULTURAL PRINTING

Catalogues and Booklets, office forms and correspondence stationery for the nursery, seed and florist trade; half-tone cuts of many standard plants. Correspondence invited. The Kruckeberg Press, 236 Court St., Los Angeles.

SEEDS AND PLANTS

ROOTED VINES

For Sale — Alicante Bouchet, Malaga, Thompson Seedless, Zinfandel and Emperor rooted vines. These vines are guaranteed A No. 1, true to name, certified and from clean producing vines. We are also booking orders for cuttings. CHAPMAN & SON, Modesto, California. P. O. Box 906, Phone 663.

For Sale—Seedless Thompson Malaga Muscat and Almeria (Ohanes) grape rootings. Cuttings came from the finest vineyards of Tulare County and guaranteed to be A No. 1. Write for prices per thousand lots. J. Murray, 7050 Kester Ave., Van Nuys, Los Angeles County, California.

Sweet Clover Seed For Sale—Buy direct from the producer and save money. Small quantity of highest grade seed yet for sale by the largest producer of the State. Quality and variety guaranteed. Write for sample and price. Address George Forest, Standish, California.

Raspberry Snell Has It—The wonderful Giant everbearing Red Raspberry La France. Many of the berries are one inch in diameter, delicious flavor. Order your plants now from Ralph L. Snell, Mountain View, California.

Seeds and Plants—Grape vines (rooted) strictly first class, one year No. 1 Thompson Seedless, Muscat, Sultana, Flame Tokay, Cornichon and other varieties. Los Nietos Valley Nursery, Downey, Cal. Phone 692.

Try our fine Black Raspberry—Grapes of all kinds, berries, thornless, tree, everbearing straws and blacks, fruit trees, etc. Delv. now. J. L. Lawson, San Jose, 1946-R.

D. Lotus Good Seed, direct from the Methodist Missions in China. MANCHURIAN STOCK for Japanese persimmons. Fred. W. Kelsey, Route 1, Box 491, El Monte, California.

Cory Thornless Blackberry—Large vigorous, well rooted plants from experienced grower. Satisfaction guaranteed. Illustrated price list. Write Chas E. Mortensen, Lodi, California.

Wagner's Giant Winter Rhubarb, 1 year old, per dozen 50 cents; 1 year old, per hundred $3.00; 2 year old, per dozen $1.00; 2 year old, per hundred $7.00. Currier Bulb Co., Santa Cruz, California.

Cory Thornless Blackberry—Extra large, well rooted plants now ready. You get the genuine from the Pioneer Grower. Wm. Mortenson, Route 1, Lodi, California.

Banner Strawberry Plants — Mountain grown, heavy bearers, $2.50 per hundred, $12.00 per thousand. Special prices for large plantings. A. L. Emery, 550 Kingsley Ave., Palo Alto, Cal.

400,000 Rootings, Thompson, Malaga, Emperor, Muscats, Sultana and Cornichon and cuttings, also wine grape cuttings; 4 kinds of alfalfa seed. Box 501, Fowler, Cal.

For Sale—Strawberry plants, Gibson variety, very prolific. Get now for April berries. C. A. Hiller, 143 N. Corona Ave., Bell, Cal.

For Sale—Brandywine Strawberry Plants, fifty cents per hundred, postage extra. E. A. King, West Fourth Street, Riverside, California.

Cory's Thornless Blackberry—10,000 selected, well rooted tips. Write us or call. Sylvan Nurseries, Lincoln Highway, Roseville, California.

Cory Thornless Blackberry Plants, shipped from Cory Mountain Pass Ranch. 10, $2.00; 25, $4.00. G. S. Wills, Jamestown, California.

Alfalfa Seed — Certified Hairy Peruvian, Smooth Peruvian, Common. Write for samples and prices. Delta Seed & Feed Co., Yuma, Arizona.

Garlic—For sale, good large, fresh garlic sets, per pound 15c. Orders of 100 lbs. or more postpaid. C. J. Baden, Garden Grove, California.

For Sale—400 Black Mexican Avocado Seeds @ $4.00 per 100. Mrs. A. B. Phelps, Sherman, California.

MACHINERY

For Sale—Rebuilt windmills, tanks, pumps, cylinders. Make galvanized tanks, 400 gal., $16.25; 600, $26.25; 1,000, $36.25; 2,000, $48.25. Irrigating pipe, all sizes, for less. Why pay more? Demmitt Co., 120 N. Main, L. A.

For Sale—No. 10 Trundaar heavy duty tractor with extras, in perfect condition. Sacrifice for quick sale. Will demonstrate. Write or call Donald West, Box 645, R. D. 1, San Gabriel. Phone Pasadena Colorado 4764.

For Sale Reasonable—1 Holt 75—Schmeiser Leveler—2 Heavy Davis Disc Plows—Trap Wagon—Holt 18—8 ft. Double Disc Harrow—1 Five Disc Plow—Case Thresher 18x36. All in good condition. Clarence E. Newman, Chowchilla.

For Sale at Bargain Prices—One 750 gal. heavy steel oil tank and wagon; one six foot land leveler; one International feed grinder; one four-gang Stockton plow. Drew Carriage Co., Ontario, Cal.

For Sale—One C. L. Best 12-25 Tractor, in fine shape. Might take as part pay span of good mules or horses. Terms to responsible party. Address Box 299, Sawtelle, California.

ROOFING MATERIAL

Save Your Roof for 15c a gallon with Asphaltoid. Direct from producer to consumer permits this low price of 15c a gallon. The finest roofing and preservative paint under sun. This is a natural product—why pay more for acid treated asphalt that eats your roof? Mail orders, barrel lots promptly shipped. Equally good for shingle, paper or metal roofs. Woolner Oil Co., 4th and Commonwealth, Los Angeles.

Roofing Paper—
Firsts, complete with nails and cement. 1-Ply $1.25; 2-Ply $1.60; 3-Ply $2.20.
Lead and Oil Paint.....$2.20 a gal.
Roof Paint Special..... 35c a gal.
Prompt Deliveries on Mail Orders.
ANGELUS ROOFING & PAPER CO.
764-766-768 So. San Pedro Street,
Phone Bdway. 5401. Los Angeles, Calif.

TREES

Carob Trees—A fine beautiful evergreen legume tree, not a soil robber but a nitrogen feeder, unsurpassed for windbreaks in orange groves. No roots to cut. Produces two hundred to 1000 lbs. of richest food grown. $2.50 brings you 4 sample trees prepaid. R. 2, Box 60, Original Carob Nursery, San Bernardino, California.

Fruit Trees—Walnut Trees grafted on Northern California black. Eureka, Placentia, Perfection, Chase, Payne, well rooted, strictly first class. Royal apricots on apricot roots, Tuscan and Sims Cling peaches, Hachiya Persimmon, locally grown on Lotus roots, extra fine stock. Phone 692. Los Nietos Valley Nursery, Downey, Cal.

Thousands of choice homegrown selected budded walnut trees, 50 cents and up according to height, also everything else that grows in Southern California in trees and shrubbery for sale, reasonable. We have what you want. Snyder Nurseries, Box 74, Burbank, California, 721 W. San Fernando Road. Telephone 122J

For Sale—Placentia Perfection and Eureka grafted walnut trees. Prices 1-3 off from last season. Our stock is grafted from choice grafted orchards. See our stock before buying. The Walnut Nursery, Whittier, California. Phone 6294.

For Sale — Walnut Trees — Erhardt and Placentia grafted on Northern Black Root—4 to 6 feet high, $1.00; 6 to 8, $1.25; 8 to 10, $1.50; 12-14, $2.00; Erhardt, 8-10, $2.25; 10-12, $2.50. Borley and Wilkins, Puente, California. Phone 162.

Northern California Black Walnut Seed, 8c lb. Trees one to two feet, $10.00 100. These small trees transplant perfectly. Pears, filberts, other stock. See catalog. Felix Gillet Nursery, Nevada City, California.

Nursery Stock at bargain prices. Prune 10c each; grafted walnuts $1.00 each; pears 20c each; Black caps $20.00 per 1,000; other stocks at bargain prices. Submit your want list, and send for planters list. 31 years in business. Carlton Nursery Co., Carlton, Oregon.

For Sale—One and two year old citrus stock budded with "Supply Co. Buds." We have also all commercial varieties of deciduous. Now is the time to order. F. A. Tetley and Son, 415 W. 8th St., Riverside, Calif.

For Sale — Hachiya Persimmon Scions from best of 300 proven trees. Nursery is sold out, but will reserve for 22-23 season. Sherwood Persimmon Nursery, Box 236, Fullerton, California.

For Sale—Grafted walnut trees, also citrus and deciduous trees. Order now for 1922 delivery. Get my prices. Ketscher's Nursery, 1101 E. 4th Street, Santa Ana, California. Phone 572-W.

For Sale—10,000 Florida Sour Orange Seedbed stock, 12" and up. Valencia Late, Washington Navel, Eureka Lemon trees. Prices right. W. V. Skillman, R.F.D. Box 387, San Fernando, California.

Hachiya Persimmon Trees—Best of all Japanese persimmons. Also rhubarb plants for home and field. Fred W. Kelsey, S. Rosemead Avenue, El Monte, California.

Reliable Trees and grapevines at a fair price. Write us for price list. We ship on approval. J. F. Miller & Sons, Healdsburg, Cal.

Trees—Tuscan Kling peaches, Sugar and French prunes, five to eight foot trees $35.00 per hundred. Johnson's Nurseries, Almaden Road, Los Gatos, California.

For Sale—Grafted Walnut Trees, Placentia Perfection and Eureka. These are well rooted and first class in every way. Rivera, California, C. E. Bullock.

For Sale — ATHEL OR EVERGREEN TAMARIX. Best tree for immediate windbreak and shade in hot dry localities. Leonhardt Swingle, Indio, Cal.

Sampson Tangelo and Dwarf Chinese Lemon; the two best citrus products ever introduced. Coolidge Rare Plant Gardens, Pasadena, California.

For Sale—Walnut Trees. Placentia Perfection and Eureka, grafted on black root. La Puente Walnut Nursery, Puente, California. Phone 103.

Florida Sour Orange Seedlings. Nursery, 100 Ventura Street, Altadena. Address, Paul B. Magee, Mecca, California.

For Sale—Fruit Trees, grapevines, unrooted grape cuttings, etc. Write for price list. Burke's Nursery, Lodi, Cal.

For Sale—One and two year old Wonderful Pomegranate trees, fine stock. J. W. Irwin, Lindsay, California.

For Sale—California Black Walnut seedlings, 1-3 feet. Ripon Nursery Company, French Camp, California.

Bishop's Nursery, Highland, California, will be pleased to figure on your order for trees, plants, or seeds.

Citrus Nurseries, Murphy Oil Company, East Whittier California. Selected stock for sale; inspection invited.

San Pedro and Black Mission fig trees. L. A. Tuttle Nurseries, R. 1, Pasadena.

Trees—All kinds cheap. Send list for prices. Sebastopol Nursery.

RABBITS

Pedigreed Flemish Giants — No fancy prices. Maud Beeching, 1578 W. 46th St., Los Angeles.

FOR RENT

For Rent—At Mission Acres in San Fernando Valley, good 6-room bungalow, four acres excellent land, fruit, garage and poultry houses, near car line. W. C. Planalp, 4635 Melbourne Ave., Hollywood.

For Rent—Dairy equipment for 40 cows; sandy location, 100 ton hay barn, good six room house, large corrals, windmill and engine for water. E. A. Sutton, W. Artesia St., R. D. 1, Artesia, California.

GEESE

For Sale: Pure Bred African Geese—Four geese and gander. Very fine hardy birds. Price $35.00. Henry Kruizenga, RD 3, box 277, Anaheim, California.

TURKEYS

Turkeys — Purebred Giant Bronze, male and female stock, sired by our two famous toms, "Goldbank Boy," champion Giant Bronze first prize winning cockerel at Madison Square Garden Show, New York, January, 1921, and "Copper King Jr.," a 36-lb. yearling son of "Copper King V.," the 38-lb. yearling that was grand champion at Madison Square Garden Show, January, 1919, both bred to choice 20-lb. hens. Eggs in season. Address Bronze King Mountain Farm, Calistoga, Cal.

It's no wonder so many poultry raisers make a failure of the business. Without any knowledge of raising poultry people will branch out expecting to make a success. By putting in practice the valuable contents of POULTRY FOR PROFIT, $1.00 postpaid, success is assured in the poultry business. Cultivator Publishing Company, Los Angeles, California.

Mammoth Bronze Turkeys — Stafford strain Eastern stock, beautiful plumage, extra large frame and bone. Money back guarantee. Send for circular. R. M. Dodge & Son, R. D. 2, Box 129, Bakersfield, California.

Mammoth White Holland Turkeys—Choice hens and toms from our famous breed of large vigorous turkeys, improved by Eastern stock. Earl V. Smith, Loma Vista Ranch, Willows, California.

Pure Bred Bronze Young Toms, $15.00; young hens, $10.00. Pure bred S. C. Buff Orpington cocks, $5.00 each. Mrs. M. L. Trewhitt, Route B, Box 47, Hanford, California.

For Sale—Wild Turkeys—Best, cheapest, most certain and indispensable producers. Cash deposit secures stock or eggs. Blanche Dresser, Tulare, California. Route C, Box 194.

Mammoth Bronze Turkeys—Choice toms for sale. Prizes taken at Riverside Fair, 1921. E. H. Varley, Hemet, California.

Bourbon Red Turkeys, Buff Orpingtons. The Ferris Ranch, Reservoir Street, Pomona, California.

WANTED

Wanted — Commercial orchard pruning. Work guaranteed. For rates address W. I. SCIBIRD, 2212 Nicholson Avenue, Monterey Park, California. Phone Alhambra 656W.

Wanted—Established California concern wants men, with rigs preferred, to represent it. Good pay. Can use local agents working during spare time also. Address J. H. Yetter, 317 Central Ave., Los Angeles.

Wanted to Buy—Any kind of dried fruit, honey or walnuts. Mail samples to W. A. Collins Co., Box 397, Santa Ana, California. Phone 71.

Wanted—Walnuts Meats and cull walnuts. We solicit culls for cracking only, paying cash. Fred L. Mitchell & Son, 214 French St., Santa Ana, California. Phone 551-M.

Want to Hear from owner having farm for sale, give particulars and lowest price. John J. Black, 116th Street, Chippewa Falls, Wisconsin.

Wanted—400 Splendor prune trees on Peach or Myro root. M. Sharpe, Vacaville, California.

FRUITS, NUTS, ETC., FOR THE SOUTH

The following planting list is recommended for Southern California in general by Farm Adviser Hodgson of Los Angeles County, who says it was prepared by members of his staff after a careful survey of local orchards and vineyards:

Apples — Red Astrachan, Winter Banana, White Winter Pearmain, Arkansas Beauty, Rhode Island Green, Yellow Bellflower, Jonathan, Delicious and Newtown Pippin.

Apricots—Royal.

Avocados — Puebla, Fuerte, Sharpless, Spinks, Taft.

Cherries—Royal Ann (Napoleon Bigareau), Black Tartarian, Bing.

Figs — Kadota, Brunswick, Black Mission, Black San Pedro, Calimyrna.

Grapes — Eastern. California Concord (Pierce or Isabella Regina), Niagara; European. Emperor, Malaga, Thompson Seedless, Tokay, Muscat.

Lemons—Eureka, Lisbon, Villa Franca.

Loquats—Advance, Champagne, Premier, Thales.

Nectarines—Advance, Stanwick.

Oranges—Washington Navel, Valencia, Satsuma, Paper Rind St. Michael.

Olives—Mission, Manzanillo, Ascolano, Sevillano.

Peaches—Alexander, George 4th, Elberta, Foster, Hale, Phillip Cling, Tuscan Cling, Salway.

Pears—Bartlett, Comice, Winter Nelis.

Plums—Satsuma, Burbank, Wickson, Santa Rosa, Climax, Duarte.

Prunes—French, Imperial, Sugar.

Persimmons — Hachiya, Tanenashi, Hyakume, Tsuru, Tamopan.

Pomegranates — Wonderful, Paper Shell, Sweet Fruited.

Pomelos—Marsh Seedless.

Walnuts—Eureka, Placentia Perfection, Ehrhardt.

Give a Thought to Livestock in '22

By R. P. Royce

WITH 1922 just around the corner, a good many California ranchers find themselves at the crossroads of their operations. They have pulled through 1921 considerably the worse for wear and, while downright glad that the year is over, they are looking forward to 1922 with an anxiety that tinges their hopes for a more prosperous season with a bit of doubt justified by their recent experiences. For many the consoling thought is that at the worst the new year cannot be more disastrous than the one just closing. In short, they have plumbed the depths and know the worst and feel that any change must be for the better. There seems to be plenty of evidence to support such belief. In general economists and big business men seem fairly well agreed that the bottom, so far as agricultural staples are concerned, has been touched—that the corner has been turned. Gradually, but certainly, financial and business interests that took the lead in price deflation primarily directed toward agriculture and apparently expected to succeed in making the American farmer stand the brunt of such process while they themselves held to their war time profits, are finding that after all agriculture is the goose that lays the eggs of gold and that only as agriculture prospers can other activities show life. The new year can bring about but two conditions: Either agricultural values must go up or other values come down to a level of the farmer's purchasing power. In either case, the result, so far as agriculture is concerned, is the same and the producer wins whichever way the cards are cut.

But out of the chaotic state agriculture is in at the present time, one fact seems to stand out and that fact is this: From now forward agriculture must be developed along sounder principles than have obtained in the past few years. And in the process of rehabilitating the industry it is certain that livestock of some sort will occupy an important role. This because of the fundamental importance of animal husbandry in any permanent scheme of agriculture, and particularly because the beginning of 1922 finds California short of livestock of all kinds.

That such a shortage is a fact in this state is common knowledge to all observers and is indicated by the further fact for the past year trainloads of hogs and many cars of cattle have been shipped into California to supply the needs of local killers. It is not a particularly satisfying fact that in a state boasting of 117,000 farms, and natural conditions for livestock production unexcelled, we have to go as far east as Kansas City for hogs, while our own markets have averaged two to three and a half cents higher than cornbelt quotations.

The only reasonable explanation of such a situation is the failure of California ranchers to appreciate, in a more general way, the real possibilities of livestock production. Indeed, it can be definitely stated that one of the weakest features of California agricultural practices is the lack of a sound livestock policy in operations of the average rancher. Far too long our farmers and ranchers have leaned toward specialization. Specialization is all right in some cases but year in and year out the man who developes his production along broader lines will be found in a stronger position than his specializing neighbors. The year 1921 has demonstrated that fact to be true. Go into the alfalfa and barley sections and what do you hear? Bitter complaint over existing prices and the lack of buyers. Barley men declare that the 1921 crop was produced at a loss and there is no question but that is true; yet for the most of the year barley fed to hogs would return the grower around $2 per hundred — a price double what many men received. The same complaint is heard from alfalfa districts — yet men who had cows and hogs have made a profit. Go throughout this state and study the lessons made plain during this year. Aside from cerain fruit growers, what men in the average community have weathered the storm in the easiest fashion? In the majority of cases it has been the men with some sort of livestock. The same is true in other states. As a matter of fact, with mighty few exceptions, it has always been easier for the man with livestock, because, first of all, through maintaining livestock and feeding part or all of his crops, the fertility of his land has been kept up or increased, thus enabling him to produce crops at lower cost. Again the growing of livestock invariably brings added income to the business through the utilization of much forage that otherwise would be lost and it is seldom that feed of all kinds, where fed under good practice, will fail to show a margin above the primary price.

The need for a more general livestock program on the part of California ranchers was never more pressing than at the present time, nor has a more favorable set of circumstances faced the man who desires to grow livestock.

There is the established necessity of many men changing their plans of operation; a real shortage of nearly all sorts of livestock in California—particularly hogs and cattle; more satisfactory markets than we have been accustomed to; an oversupply of cheap feed and values for breeding stock at rock bottom.

It is not here suggested or urged that one enter the business on an extensive scale or with a great outlay of capital. It is not even urged that one start with only pure bred stock—although it is urged that in buying the matter of quality should govern the purchase. But the plea is made for more of our readers to make a move toward getting some sort of livestock and that the start be made in 1922.

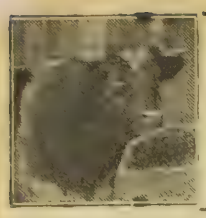
California farmers need have no hesitancy in approaching the livestock business in a small way. By starting moderately, the initial investment need not be large and by conservative management it is surprising how soon a herd or flock will develop. Many of the leading herds in this and other states have been developed from a small foundation. Indeed it is under such a plan that the business returns the greatest profit. Time is an essential of animal husbandry and nine times out of ten it is the man who has been content to develop a herd from a modest beginning who reaps the greatest profit, rather than the speculator and plunger who expects to garner an unholy profit in a year or two.

Livestock offers no easy way to extreme wealth but it does offer a mighty sure and safe road to a good living and a competence and many a farm mortgage born in 1921 will be paid off with milk checks and pork and cattle sales.

If you, Mr. Reader, feel that you are standing at the crossroads and view the new year with apprehension, it might not be a bad idea to seriously look into the livestock business. Perhaps your barley and alfalfa can be marketed through cattle or hogs to a better advantage. In the end, most of your hay and grain will be bought by men who will feed it and the profits they will make could be kept at home.

The Cultivator doesn't recommend livestock as a universal panacea for all of our agricultural troubles, but we do prescribe livestock as a mighty sure relief for the cramps affecting a lot of bank rolls caused by too much "cash crop" farming.

Long distance Holstein records are being broken in California with great regularity at present. With the 305 day milk record already broken by a heifer in Fred Hartsook's herd at Lankershim, and a senior yearling headed for the junior two year old record in the same herd, with a Bridgford heifer finishing with around 27,000 pounds in 365 days as a senior two year old, and Earl Graham's junior three year old finishing up with right around 30,000 pounds, the honors are being distributed around in fine shape.



The Farmer's Chance

In a shipment of fifty panhandle, long, three and four year old steers marketed at St. Joseph, Mo., Oct. 3, were two grade Shorthorns owned by A. Hancke, Council Grove, Kan., out of ordinary milk cows. The panhandle steers netted $52 per head, the grade Shorthorns $105.75—$5.70 for the panhandlers and $7.50 for the Shorthorn grades. Better use a Shorthorn bull.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION
13 Dexter Park Ave. Chicago, Ill.

Rosebud Shorthorns

A Choice Herd of Fifty Females Headed by Milmar Stamp a Cruickshank Secret

We can now offer a few extra good young bulls that we do not hesitate to recommend. They are well grown and correct in type and quality. We invite you to visit our herd or to write us your needs.

Edinger-Johnston Company
Hood, California
(Just south of Sacramento.)

A. M. Easton Wm. A. Ward

Blackhawk Ranch Shorthorn Cattle

One of the most select herds in America. Only Scotch females of the best families headed by COLLYNIE PRINCE LAVENDER our imported bull that was grand champion at San Rrancisco.

SHIRE HORSES

A number of good sound young stallions and mares, well bred and priced right. For prices and particulars address

E. LOVELL, Mgr.
Diablo, Contra Costa Co., California

Straloch Farm

Davis, Cal.
(2½ Miles West on Highway)

Shorthorns

Herd Sires:
California Model 635776
Imp. Braywood Collynie 951409

Three of the get of California Model were shown at the Show in San Francisco. These won two firsts and one second. The steer was Reserve Grand Champion and sold at public auction for forty-five cents a pound.

Poland China Swine

Big—Prolific—Easy Feeders—
The Farmers' Kind.
Prices Reasonable

Hampshire Sheep

Strong show at California National. Straloch Hamps took half of the firsts.

Visit the farm at any time.

J. I. Thompson, Manager C. Harold Hopkins, Owner

IMPORTED

Corston Masher

Senior Champion at 1921 California State Fair heads our selected herd of

SHORTHORNS

and we can offer some rare bargains in Scotch and Scotch topped cows and heifers, some with calves at foot, and rebred to the above bull. Most of the heifers are by Double Callant, a grandson of Avondale. Write us for prices and particulars.

Warm Creek Land and Livestock Co
J. Selby Badt, Pres. & Mgr., Wells, Nevada

Ten Top Shorthorn Bulls For the Range

I now offer 10 young bulls that are just right for the range man seeking to produce a better class of cattle. They are well bred, with plenty of scale, constitution and bone and are of good colors. Come and see them or write. The price will suit.

Roselawn Stock Farm
H. M. Elberg Woodland, Cal.

Herd Bulls
Harris Standard 2d
Beau Blanchard 76

Nevada Hereford Ranch

J. H. Cazier & Sons
Wells, Nevada

A government accredited herd. No reactor in 16 years. A herd whose record in the show and sale ring is only surpassed by the esteem accorded its productions by cattlemen. We can furnish bulls or females to fill any need—and at sound prices. Visit our herd or write for information.

DIAMOND G HEREFORDS

I now offer 10 extra geod open registered heifers, at real bargain price, sired by a son of an International Champion. Start your herd with these.

H. H. Gable Esparto, Cal.

Mission Herefords

One of the good herds of the State. Headed by The Peer, a son of Beau Blanchard. Young stock for sale from time to time. Visitors welcome and correspondence invited.

JOHN A. BUNTING
Mission San Jose Calif.

Santa Anita Rancho

Pure Bred Registered Percheron, Arabian and Thoroughbred Horses, Holstein-Friesian Cattle, Southdown Sheep, Big Type Poland China Swine, Mammoth Jacks and Jennets.
Young Breeding Stock of All Kinds
Every Animal Guaranteed

Santa Anita Rancho and Anoakia Breeding Farm

SANTA ANITA Anita M. Baldwin, Owner CALIFORNIA

Prevents Hog Cholera—Cresy-lol

A standardized Disinfectant. Dilute 1 part with 50 parts of water and use as spray or dip. Manufactured by

ARTHUR R. MAAS, Chemist
308 E. 8th St., Los Angeles, Calif. Write for circular

Your appreciation of the California Cultivator can be shown best by writing to and buying from Cultivator advertisers.

Preference in Cattle Breeds

By A. L. Spellmeyer

THE ideal double purpose cow for dairy and beef use has not yet been developed. From the many breeds men select those they consider best for their particular grass or climate, and this varies in different localities.

The Shorthorn or Durham leads in the United States over the Hereford by a very small percentage, with the Holstein and Jersey following in the order mentioned.

The Hereford is a comparatively modern breed, just about as old as this country. It was a development of a blend made in Herefordshire, England, and originally started with frame and weight rather than color as the intention. It is probable many breeds had a part in the development of the Hereford, including the rugged stock from the Scottish moors, the large framed animals from France, the cattle of the Picts, and even the Holstein-Friesian. The early Herefords were spotted and did not carry the red with white face of today in solid colors, but were gradually evolved to breed true to the present type. Some of our patriots of the Revolution made the first importation into the U. S. A., I believe either Jefferson or Hamilton, and these cattle were spotted, with a good part white. An ancestor of mine named Marshall and another named Roberts were among the first prominent breeders who made the Hereford a definite breed through selection of types, so that I can't be blamed for keeping to a business that is as unprofitable as the present one of cattle.

The Holstein, or Holstein-Friesian, was originally mostly a red and white breed with some black and whites, and gradually it has been evolved to a definite form. It was started in a country of small farms for milk yield and has developed wonderfully in the last few years. The United States, and especially Washington and California, have made great progress with Holsteins until they are far better today here than the original breed is in Holland or any part of Europe. A large, rugged, heavy type of Holstein is being developed in parts of this country that may finally with a cross develop during the coming generation into an almost ideal double utility breed if a line can be developed that will fatten and has a will to forage on grass.

Although the Holstein here is tending to heavier production of meat pounds, the ordinary Milking Shorthorn or Durham has fallen off in general milk producing qualities and rather tends toward a beef breed exclusively. The Hereford is strictly a beef breed and is a great rustler on scant forage and stands adverse climate. The Herefords of this country since Anxiety have tended toward smoothness and shape rather than great bone, and the ideal Hereford here and in England is gradually diverging in type. The packers are responsible for this, as they desire smoothness and cuts more than weight and we find this same weight and bone versus smoothness idea bringing up arguments in swine.

In this country different states concentrate on different breeds of cattle. New England runs to Holsteins, with Jersey the second breed and Ayrshire third. Rhode Island runs strong to Holstein with three times as many Ayrshires as Jerseys. Iowa runs strong to Durhams, with Herefords second and Aberdeen-Angus third, with few dairy cattle. Wyoming and Montana run very strong to Herefords, as also New Mexico and Arizona, and most of the West, Nevada, Idaho and Oregon, run rather to Durhams.

California prefers Holsteins, with Durhams a second, Herefords a third and Jerseys a fourth. More than one-third of California cattle bear the Holstein impress although the cattle numbers of the state are not supposed to total over one-fourth dairy stock and three-fourths beef breeds. The information of the department of agriculture does not always bear itself out as in this instance of California cattle numbers, and my long repeated contention has been that the number of beef cattle is overestimated.

For California we have the following breed percentages (Year Book, 1921): Holsteins 37, Durhams (Shorthorns) 24.2, Herefords 15, Jerseys 12.4, other dairy breeds 4.4, other beef breeds 2, and balance mixed.

California (Year Book, 1921) is supposed to have 577,000 dairy cattle and 1,683,000 other cattle. On the face of it the breed percentages are probably the most accurate as compiled from dairy stock kept in close control and subject to full report. If this is true, counting Durhams as beef rather than double purpose or milking stock, California would have about 54 per cent dairy cattle stock.

With higher land values California's future lies in cattle, in increasing dairy numbers and the growing of registered breeding supply of beef cattle, as the range is becoming too high priced for ordinary beef production in many localities already, unless these beef are extra good in grade and we have good rains.

The beef supply of this state is inadequate now for slaughter demands. Our men are quitting the raising of cattle for the pasturing and growing of steers imported from other states, and we face a tremendously expanding beef demand, with the coming world development and world food demand in the great Pacific. Whatever breed is selected, if they are good registered stock and the producer has the money to carry on and build up during this low price period, he will do well later. There is coming to this Pacific shore a development that the entire world, France, England and New York now recognizes, and there will be a great demand from Mexico to the Argentine and from Siberia to China for registered stock when we settle down again .

Eventually we are going to concentrate on dairy cattle and registered beef cattle, for cattle must have lower expense in production of actual bulk beef or double present prices. Mexico has a tremendous potential productive power, as well as South America, where costs would be a tithe of ours in land investment, labor and expense. The great plains of Mongolia and many parts of Siberia are wonderful cattle country where animals can be raised at small cost. It is far cheaper to transport the meat than raise it here. All this will not come in a day, but it will come. The great packers have foreseen this trend by establishing tremendous abattoirs in South America, and this even explains their apparent indifference to whether the range cattle industry of this country lives or dies as in the future we are going to raise our milk, make our cheese and import a big part of our meat.

NAPA SHEEP WIN AT PORTLAND

The Ratto Stock Farm of Ratto Station has just brought back its flock of registered Shropshire sheep from the Portland Livestock Show, where they made a wonderful showing against large eastern and northern competition. The following premiums were awarded them: Second in age ewe, second in ram lamb, third on pen bred by exhibitor. At the California International Livestock Show held in San Francisco, they were also placed with high honors. The Ratto Bros. are well pleased with the showing made by their sheep, especially considering that they were not fitted for the show circuit, but simply separated from the rest of the flock one week before the San Francisco show.

LOS ANGELES COUNTY COWS NOVEMBER RECORD

The report of the Los Angeles County farm bureau cow testing association for November shows some very good records. During the month there were 3,400 cows tested, producing an average of 875 pounds of milk and 34.7 pounds of fat per cow. Practically 33 per cent of the cows in the association are producing more than 40 pounds of fat per month. A Los Angeles County cow owned by Burr Farms was the high cow of all associations, producing 127 pounds of fat for the month of October.

Livestock News Notes

At the recent dispersal sale of the famous Landwater stud of Clydesdales, O. H. Brant of Shellville secured the three year old stallion Dunure Refiner, for which he paid $1,600. Dunure Refiner is a son of the noted Scottish sire Dunure Footprint and is reported to have cost $16,000 in Scotland a year ago. The bringing of this young stud to California means that breeders of this state will have available the most popular and highest priced blood lines of the breed.

While East this month Howard Vaughn of Mountain View Farm, Dixon, attended the Loveland Shorthorn dispersal sale and selected the imported cow Marchioness 9th, as well as two heifers, Clara Maid 5th and Corelli 7th.

Alex Wilson, manager of the Italian Vineyard Company's herd of Berkshires, is feeling mighty pleased over the fact that Guasti's Leader's Champion, a boar bred by his firm, topped the recent Berkshire sale at Chicago when he sold for $425. The general average of the sale was $89.

California figured prominently in the Chicago Hereford sale when a representative of William R. Hearst topped the sale by paying $6,250 for the junior yearling bull, Good Donald 37th. This bull was sired by Good Donald 23d and stood third in class at the International. Six of the better females were also secured for the Hearst ranch in San Luis Obispo County. Good Donald 37th is the highest priced Hereford bull to come to California.

K. S. P. J. Pet Segis, the grand champion show daughter of King Segis Pontiac Jannek, recently freshened as a senior three year old at Maxwell Farms, Hollywood, and has now completed an official record of 31.57 pounds butter from 578.9 pounds milk in seven days, being the first 30 pound daughter of her young sire. It will be remembered that this great heifer fetched $3,600 in the James J. Jeffries sale last February, while her dam topped the females at $4,500.

Guernsey enthusiasts are going to have another rare opportunity to buy registered breeding females at public sale in California, as C. S. Rasmussen, the well known dairyman and breeder of Loleta, has decided to make a public sale offering. Everyone who follows dairy production records in California is well aware of the wonderful showing Mr. Rasmussen's herd has made in the Humboldt County Cow Testing Association, of which it has been a member since 1909. Last year the entire milking herd of 143 head averaged 371 pounds butterfat. In the coming sale Mr. Rasmussen will sell the entire middle section out of his registered herd; that is, he will retain only the oldest cows and the 1921 heifer calves. In addition to the registered cattle there will be a limited number of very high grade Guernsey cows offered so that practically every female in the herd is either milking or well along with calf. Probably not more than two or three bulls will be offered, among them one of the herd sires, Proud King of Edgemoor, a wonderfully bred bull, his sire being the famous Imp. Itchen May King, formerly owned by W. H. Dupee, and his dam, Proud Dame, with 719.86 pounds butterfat from 14,602.9 pounds milk in one year, she a daughter of the noted bull Ne Plus Ultra. He is a bull of excellent type, was second prize winner as a yearling at California State Fair, and among his get are first prize winners at the National Dairy Show and other prominent eastern shows. For the convenience of buyers Mr. Rasmussen has decided to sell these cattle at Rhoades & Rhoades' Sale Pavilion, Hynes. The event will be managed by California Breeders Sales and Pedigree Company, Sacramento, and will be held Thursday, March 2.

Excellent progress is being made with preliminary work for the sale of registered Herefords under auspices of Pacific Coast Hereford Cattle Breeders Association to be held at University Farm, Davis, during Stockmen's Week, the last week in February. California Breeders Sales and Pedigree Company, Sacramento, which will manage the sale, reports that consignments of more than half the required number of cattle have already been offered and that a closing date for entries will soon be announced.

Aralia De Kol Mead 2d recently dropped a pair of twin heifer calves by Sir Aaggie De Kol Acme in the A. W. Morris & Sons herd at Woodland. The seven nearest dams of these two heifers average over 1,100 pounds butter in one year, making five heifers in the Morris herd with an average of over 1,100 pounds for the seven nearest dams, a number not possessed by any other breeder in the world. Unless study has been made of many of the greatest yearly pedigrees of the breed it is difficult to realize how few matings are possible to produce calves with such tremendous backing for the seven nearest dams, and to find five of them in one herd is indeed remarkable. Aralia De Kol Mead 2d is now on test and promises to better her former seven day record of over 32 pounds butter.

J. L. Sebastian, Wasco, has the honor of developing the first 30 pound cow in Kern County, and the record is noteworthy in several respects. The record was made by the senior four year old, Zampa Aurelia Segis Pontiac, with 30.23 pounds butter from 730.1 pounds milk in seven days, and 123 pounds butter from 3,032.1 pounds milk in 30 days. She comes honestly by her great production, being sired by Segis Pontiac De Kol Crane, formerly at the head of Walter Mitchell's herd at Visalia, he by Segis Pontiac De Kol Burke, son of Riverside Sadie De Kol Burke, former world's record yearly milk producer. Her dam, Zampa Aurelia of Packwood Farm, is a daughter of Candida of Sleepy Hollow, the wonderful old cow that made a world's record production for age just this year, when she made 23.30 pounds butter from 604.3 pounds milk in seven days, milking over 90 pounds in one day at past 16 years of age, and she by a son of Colantha 4th, dam of the famous former world's record cow, Colantha 4th's Johanna. Mr. Sebastian has collected a very choice herd of modest size, and is just beginning official test work. His herd is headed by the richly bred young sire, Sir Aaggie De Kol Mead 2d, son of Sir Aaggie De Kol Mead and Miss Dutch 2d, having an average of 1,043.26 pounds butter from 23,311.2 pounds milk in one year for six of his seven nearest dams.

There have been 1,164 carloads of fat cattle shown at the International Livestock Exposition in the 20 shows held since the International was inaugurated in 1900 — 472 loads of Aberdeen-Angus, 455 loads of Herefords and 237 loads of Shorthorns.

Manager Cash of Sierra Vista Ranch writes: "At the completion of the fall fair circuit which ended with us at Portland we found we had been awarded 159 ribbons, seven medals, a cup and $1,300, and had traveled 3,500 miles. Not bad for a concern only two years in business? We have set the date of February 16 for our bred sow sale, and expect to offer at that time about 35 head of bred sows and gilts. We shall hold the sale rain or

TRAVIS B. MINGS
HOLSTEIN DISPERSAL
65 Registered Cows and Heifers
El Monte, Calif. Thursday, January 5, at 10 A.M.

Fay Tritomia Hengerveld, a 30 lb. daughter of Mutual Fobes Longfield De Kol, selling heavy with calf to a richly bred son of Sir Pietertje Ormsby Mercedes.

Marion Hengerveld Pontiac, out of Fay Tritomia Hengerveld, the 30 lb. cow shown at left, and sired by the $12,000 bull, King Korndyke Pontiac 20th.

In the face of a strong demand for registered Holsteins there is almost the assured fact that fewer of these cattle will be offered for sale in California during 1922 than for any of the past five years. Buyers will therefore use good judgment in attending the early sales of the year.

Mr. Mings is dispersing an excellent herd, rated on breeding, type, production, and the attractive physical condition in which they will be offered.

Every animal is guaranteed a breeder, every one over six months old tuberculin tested and sold subject to retest by the buyer.

The sale managers, California Breeders Sales and Pedigree Co., will extend the usual liberal terms of one-third cash, balance in 3, 6 and 9 months to responsible parties who arrange for credit before sale.

Among some of the good ones in the sale are:

Four daughters of the $12,000 bull, King Korndyke Pontiac 20th.

Four granddaughters of the four times grand champion Bridgford bull, King Segis Alcartra Prilly, sired by one of his 30 lb. sons, a full brother to the junior champion at the 1920 California National.

Five granddaughters of Maid Tuebie Segis, the great cow that made 1,140 lbs. butter from 28,383 lbs. milk in one year.

Several daughters of King Segis Pontiac Jannek, the grand champion in this year's Southern California shows.

Over twenty cows and heifers with official records up to over 30 lbs. butter in 7 days.

A granddaughter of Adirondac Wietske Dairy Maid, whose 41 lb. record is the largest ever made on the Pacific Coast.

The sale will be held on Mr. Mings' farm, two miles south of El Monte, under cover, rain or shine.

RHOADES & RHOADES will be the Auctioneers.

Applications for catalogs or credit should be addressed to the Sale Managers. California Breeders Sales and Pedigree Co. 211-212 Ochsner Bldg., Sacramento, Calif.

Sir Aaggie DeKol Mead

Bred in the richest Aaggie Acme-De Kol of Valley Mead cross, he should be one of the greatest young sires of the breed.

Five of his seven nearest dams average:

Butter	2 Years	2,040.97 Pounds
Milk	2 Years	41,547.20 Pounds
Butter	1 Year	1,130.66 Pounds
Milk	1 Year	23,096.60 Pounds

His seven nearest dams average:

Butter	7 Days	30.47 Pounds
Milk	7 Days	627.60 Pounds

His calves are just what we could expect from a long succession of great sires and dams, and in their present state of development fulfill every promise in the pedigree of their great sire.

Good business judgment will eventually prompt you to place at the head of your herd a bull of Aaggie Acme-De Kol of Valley Mead breeding.

OWNED JOINTLY BY

Fred Hartsook LANKERSHIM, CALIF. *and* A. W. Morris & Sons Corporation WOODLAND, CALIF.

SANTA MONICA DAIRY COMPANY
HOME OF QUALITY HOLSTEINS
Sons of KING SEGIS PONTIAC JANNEK
From High Producing Dams
Write for Particulars to VENICE, CAL. Visitors Always Welcome

Your appreciation of the California Cultivator can be shown best by writing to and buying from Cultivator advertisers.

Los Angeles Markets

Los Angeles, December 28, 1921.

BUTTER

Butter: Creamery extras, Produce Exchange price, 43 cents.

Dec.	21	22	23	24	27
'21	46	46	46	46	43

CHEESE

Brokers' prices:
California flats, 21@23.

EGGS

Produce Exchange closing prices: Eggs, cases included, fresh extras, 56; case count, 51; pullets, 50.

Dec.	21	22	23	24	27
'21	54	54	55	55	56

POULTRY

Price to producers: Hens, 27; colored, 30; broilers, 36-40; roasters, 29; old roosters, 16; fryers, 33; ducks, old, 20; ducklings, Pekin, 3½ up, 28; others, 28; geese, 28; turkeys, live, young tom, 40; dr., 47; old, live, 35; dr., 43; hens, live, 40; dr., 47; small hen and tom, 15; squabs, 60@70.
Belgian hares, 12@16; old, 8.

LIVESTOCK

Los Angeles, Dec. 27.—Weighed and delivered off cars without food or water:
Hogs (hard grain fed), 125 to 175 lbs., 8.00; 175 to 225 lbs., 8.50.
Cattle (on foot, gross weight): Steers, good, 6.50; medium, 6.00; cows, good, 5.00; medium, 4.50; bulls and stags, 3.00; calves, 125 to 150 lbs., 8.00; 150 to 225 lbs., 7.00.
Sheep: Ewes, 3.50@4.00; lambs, 7.00@7.50.

HIDES AND PELTS

Quotations furnished by California Hide Corporation for stock delivered to their warehouse at 1960 Santa Fe avenue.
Green salted hides—No. 1 steers, 7½ per lb.; No. 1 cows, 6½ per lb.; No. 1 bulls, 5½ per lb.; No. 2 hides, 1½ less per lb.; grubby hides, 1½ less per lb.; kosher hides, 1 less per lb.. glue hides, 1 per lb.; No. 1 horse hides, over 50 lbs., 1.75 each; No. 1 horse hides, 40 to 50 lbs., 1.25 each; No. 1 horse hides, 30 to 40 lbs., 75 each.
Green hides—No. 1 steers, 6½ per lb.; No. 1 cows, 5½ per lb.; No. 1 bulls, 4½ per lb.; No. 2 hides, 1½ less per lb.; kosher hides, 1 less per lb.
Calfskins and kipskins—No. 1 calfskins, under 15 lbs., 12½ per lb.; No. 2 calfskins, under 15 lbs., 9 per lb.; No. 1 kips, 15 to 25 lbs., 10 per lb.; No. 2 kips, 15 to 25 lbs., 8 per lb.; kosher skins, 1 less per lb.; glues, 1 per lb.; slunks, 20@40 each.
Dry flint hides—No. 1 hides, 16 lbs. and up, 10½ per lb.; No. 1 kips, 6 to 16 lbs., 11 per lb.; No. 1 calfskins, under 6 lbs., 11 per lb.; No. 2 hides and skins, 2 less per lb.; glue hides and skins, 2 per lb.
Pelts—Large, long wool, 50@80 each; medium, 25@50 each; short wool and shearing, 10@25 each.
Goat skins—No. 1 common, 10@50 each; No. 2, 5@10 each; badly damaged and small kids, worthless.
Tallow—No. 1 white and hard, 5 per lb.; No. 2, 4 per lb.; No. 3, dark and greasy, 1@3 per lb.
Wool—According to quality and condition, 6 per lb. and up.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, December 27, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk. There may be slight fluctuations during the day's trading.
Potatoes: Movement moderate, market firm. Lugs mostly 90@1.00. Stocktons: Burbanks, per cwt., best, special brands, 2.50@2.75; others, 2.25@2.50. Idahos: Russets, best, 2.25@2.50; Rurals, mostly 1.90@2.10; bakers, 3.00. Locals: White Rose, 2.00@2.25. Sweet potatoes: Market firm. Locals: No. 1, best, 1.00@1.25 per lug; per cwt., No. 1, 2.75@3.00; No. 2, 1.50@1.75.
Onions: Demand moderate, market firm. Stocktons: Per cwt., White Globes, best, cold storage stock, mostly 7.00@7.25; poorer, 6.50@6.75; browns, best, 5.00@5.50; poorer, 4.75; per lug, whites, best, 2.00@2.25; poorer, 1.85; browns, 1.50@1.75; poorer, 1.35. Spanish sweets, best, mostly 6.25@6.50 per cwt. Green: 20 bunch.
Garlic: Lb., 9@11.

VEGETABLES

These are the actual prices obtained between 7 and 8 o'clock, December 27, by wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.
Artichokes: Doz., 1.60@1.75.
Beans: Movement slow. Flats, 16@20; limas, 16@20 per lb.
Bunched vegetables: Per doz. bunches: Turnips, 30@40; carrots, 50@60; radishes, 20@30; parsley, 15; spinach, 25@35; beets, mostly 50@60.
Cabbage: Market steady. Per field crate, mostly 2.75@3.00; poorer, 2.25@2.50.
Cauliflower: Market weak. Best, mostly 2.00@2.25; poorer, 1.50@1.75.
Celery: Local, per cr., mostly 3.25@3.50; few, 3.75; poorer, 3.00.
Cucumbers: Market steady. Carlsbad, 1.60@1.75 per flat. San Diegos: Best, 3.00@3.25; few 3.50.
Eggplant: 8@10 lb.
Lettuce: Demand moderate, market weak. Locals: Field crates, best, 1.00@1.25; poorer, 75@90.
Parsnips: Lug, 85.
Oyster plant: 60 doz. bunches.
Peas: Market firm. Local, best, 22@25; poorer, 18@20.
Peppers: Locals: Bells, green, per lb., 17@18; chili, mostly 16@18.
Rhubarb: Best, 1.00@1.10.
Squash and pumpkins: Market steady, movement moderate. Banana, 1@1¼ lb.; Hubbard, best, 1¼@1½; mostly 1¼; cream, 2; Italian, 1.40@1.50 lug, 1.00 per flat. Pumpkins: 1@1½ lb.
Sweet anise: 60 doz.
Tomatoes: Market steady. Locals: No. 1, per lug, best, mostly 3.00@3.25; few 3.50; poorer, 2.00@2.50, according to size and quality. San Diegos: Per 4 basket crate, best, 1.75@2.00; poorer, 1.25@1.50.

FRESH FRUITS

Apples: Demand and movement moderate, market steady. Locals: Romes and King Davids, 5@6; few best Delicious, Yucaipa section, 6@8 lb. Watsonville: Fancy, 3½ and 4 tier, Bellefleurs, 1.60@1.75; poorer, 1.50; 4½ tier, 1.40@1.50; B grade, 4 tier, 1.40@1.50; loose, per lb., 3½@4. Idahos, Washingtons and Oregons: Jonathans, extra fancy medium to large sizes, 3.00@3.50; fancy, 2.85@3.00. Oregons: Spitzenburgs, medium to large, extra fancy, mostly 2.75@3.00; fancy, 2.50@2.75.
Avocados: 50 lb.
Cranberries: Market steady. Massachusetts: Late Howes, 25.00@27.00 bbl.; New Jersey, Late Howes, 27.00@28.00 bbl. Oregon: 22.50@23.00.
Dates: Coachella, 25@26.
Grapes: Demand moderate, market steady. Per lb.: Red Emperors, 14@16.
Pears: Anjous, per lb., 8@9; Bartletts, 4@5; few 6.
Persimmons: Lb., 12@14.
Pineapples: 20 lb.

CITRUS FRUITS

Grapefruit: Market steady. Californias, northern: Packed, box, 3.00@3.50; small, 2.50; Imperial Valley, 5.00@5.25. Arizonas: Seedless, 4.00@5.00, according to size and quality.
Lemons: Demand and movement slow, market weak. Locals: Special pack, mostly 3.75@4.00; market pack, 2.50@2.75; loose boxes, 1.50@1.75; poorer, 1.00.
Oranges: Demand moderate, market steady. Navels, special brands, 216s to 126s, fancy, 5.25@5.75; choice, 4.00@5.00; orchard run, 4.00@4.25. Valencias, market pack, 3.00@4.50, according to size and quality. All varieties culls, field boxes, 2.00@2.50; poorer, 1.50. Tangerines: Demand and movement moderate; best, 9@10.

HONEY

The general situation shows little change over that prevailing two weeks ago. Stocks continue to decrease and are much lighter than were those at the corresponding period last year. Demand is reported as light. Due to light supplies, the market, although quiet, has a healthy tone. Alfalfa honey is in heavier supply than white honey. Quotations per pound in carlots or less than carlot quantities, f. o. b. California points: White orange blossom, nominally 12@12½; white sage, 11@12; light amber sage, 8½; light amber alfalfa, 6½@6¾. Growers are said to be asking 10@13 per pound for white orange blossom and 6½@7 for light amber alfalfa. Beeswax is in fair local demand at present at 20@25, mostly 22 per lb. to the beekeepers by bee supply houses for use in making next season's foundations. Demand in the East is lacking, as imported wax offers too great competition.

HAY

Alfalfa Growers of California report:
The rains interfered with business. Track arrivals could not be moved until near the end of the week and then only in part, while country loadings of new shipments were stopped almost completely. New loadings will probably continue light for some time.
There were 1,200 tons of grain and alfalfa hay received on the Los Angeles tracks the week ending December 24, with 540 tons held over.
Prevailing prices last week, delivered in the vicinity of Los Angeles:

No. 1 dairy alfalfa	24.00
Standard	19.50

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats	22.00@28.00
Barley	18.00@24.00
Alfalfa, Rabbit	24.00@28.00
Alfalfa, No. 1 Dairy	20.00@22.00
Standard	16.00@18.00
Straw	10.00

San Francisco Markets

San Francisco, December 27, 1921.

BUTTER

Extras					41½
Dec.	21	22	23	24	27
'21	46	45	43	....	41½

CHEESE

Dairy Exchange quotations:

California Flats	23
California Y. A.	30

EGGS

Dairy Exchange quotations:

Extra					58
Extra Firsts					56½
Extra Pullets					52½
Undersized No. 1					43½
Dec.	21	22	23	24	27
'21	50½	57	51½	....	58

POULTRY

Wholesale prices are:
Two carloads of Eastern geese arrived for holiday market.
Poultry: Young chickens, Leghorns, 1 to 1½ lbs., 35@38 per lb.; above 1½ lbs., 35@38; 2 lbs. and up, 26@27; heavy breeds, 28@30 per lb.; staggy roosters, 20@25 per lb.; old roosters, Leghorns, 16 per lb; heavy breeds, 18 per lb.; hens, Leghorns, large, 25@28 per lb.; small to medium, 22 per lb.; heavy breeds, 28@30 per lb.
Turkeys: Dr. fy., 50@54; choice, 45@48; live, 38@42.
Ducks: Live, 25; dr., 35.
Geese: 30 per lb.
Squabs: Fancy, 60; do, common, per doz., 3.50@4.00; old pigeons, 3.50 per doz.
Belgian hares: Live, 18@20 per lb.; do, dressed, 25@28 per lb.

LIVESTOCK

Western Meat Co. quotes:
Weighed off cars at our yards in South San Francisco:
Cattle: No. 1 steers, 6@6½; do, second quality, 4¾@5¼; cows and heifers, No. 1, 4¾@5¼; do, second quality, 4@4¾; bulls and stags, 3@3½.
Calves: Light weight, 7½@8½; heavy, 6@6½.
Sheep: Wethers, 4@4½; ewes, 2¾@3¼.
Lambs: 7½@8.
Hogs: Hard, fat, grain fed, weighing 125 to 200 lbs., 8½; 200 to 250 lbs., 7½; 250 to 300 lbs., 6½; light sows, 6½; heavy, 5½.
California Farm Bureau Marketing Association reports:

No. Hogs	Av. Wt.	Dock	Price
Tulare, December 20			
90	168	70	8.10
90	170	.....	7.85
5	170	.....	7.85
79	213	.....	7.50
2 feeders	80	.....	7.05
17	261	10	6.90
9	366	110	5.55
3 cars, 25 consignors, $4,247.90.			
Visalia, December 21			
77	171	.....	7.55
75	206	.....	7.50
20	158	.....	7.30
4	157	.....	6.55
53	236	40	6.50
1	360	.....	5.50
19	243	180	4.50
3 cars, 14 consignors, $3,497.24.			
Hanford, December 22			
7 feeders	134	.....	10.10
52	167	.....	8.25
104	165	.....	8.20
44	226	.....	8.10
9	173	.....	7.75
32	201	.....	7.75
2	525	40	6.75
3 cars, 29 consignors, $3,890.39.			
McFarland, December 23			
106	156	.....	8.50
63	166	.....	8.25
63	190	.....	7.95
25	196	.....	7.50
14	224	.....	6.95
4	278	.....	6.75
3	313	30	5.75
3 cars, 23 consignors, $3,962.69.			

Total for the week: 12 cars, 91 consignors, $15,598.22.
These prices are f. o. b. shipping point to the farmer, while the prices quoted by the newspapers are off cars at their packing houses.

POTATOES AND ONIONS

Potatoes: Street prices: River, fancy, 1.75@2.00; few fancy higher; Oregon Burbanks, 2.25@2.60; Salinas, 3.25@3.50; netted gems, 2.65@2.75; British Queens, 2.25@2.35. Sweets, 3.25@4.00 per cwt.
Onions: Australian, brown, 4.25@4.75; crystal, 3.00; green, 2.00@2.25 per box.
Garlic: 2@5 per lb.

VEGETABLES

Wholesale selilng price:
Artichokes: 18.00@21.00 cr.
Beans: Lb., 17½@22½.
Brussels sprouts: 6@8 per lb.
Carrots: Sk., 1.00@1.25; fy., 2.50@2.75; do, bunch, 15@30.
Celery: 1.00@1.75 cr.; fy., 2.50@3.00; bunch, 10@20.
Cucumbers: Hothouse, 2.00@2.50; Southern, 1.25@2.00; do, English, 2.00@2.25.
Eggplant: So., lb., 3@6.
Endive: 40@75.
Lettuce: Iced, 2.25@2.75 cr.; dry, 1.75@2.00.
Olives: Lb., 5@7.
Peas: Lb., 17½@20, large.
Peppers: 12½@15; chili, 15@17.
Rhubarb: Southern, box, 1.50@1.75.
Squash: Southern, 1.75@2.25 per lug; cream, 75@1.00 per lug box; Hubbard, 75@1.15 per sack.
Tomatoes: Southern, 3.00@3.50; L. A., fy., 1.50@2.00 lug.

FRESH FRUITS

Apples: California Bellefleur, 3½ and 4 tier, 1.50@1.75; 4½ tier, 1.25@1.40; Newtown Pippins, 3½ and 4 tier, 1.75@2.15; 4½ tier, 1.65; B grade, 1.00@1.35; Langford Seedlings, 4 tier, 1.40@1.65; 4½ tier, 1.10@1.35; same quotations on Missouri Pippins. Northwestern: Spitzenburg, extra fancy, 2.50@2.75; fancy, 2.25@2.50; choice, 1.75@2.00; Rome Beauty, fancy, 3.00@3.25; choice, 2.50@2.75; Banana, extra fancy, 3.25@3.50; fancy, 2.75@3.00; Delicious, fancy, 3.50; Jonathan, extra fancy, 2.00@2.50; fancy, 1.75@2.00; Hood River Newtowns, extra fancy, 2.40@2.65; fancy, 2.00@2.25; choice, 1.65@2.00; Arkansas Blacks, extra fancy, 2.50@2.75; fancy, 2.25@2.50.
Avocados: California, doz., large, 5.00@8.00; small, black, 2.50@3.50.
Bananas: Eastern, 6@7; Hawaiian, 6@7½.
Cranberries: Box, 5.00@6.50; Cape Cod, 25.00@26.00 bbl.
Melons: Casabas, 1.00@1.50 per doz.
Pears: Winter Nellis, 2.50@3.25 box; Beurre Clairgeau, 2.00@2.50; De Anjou, 2.00@2.50; Beurre Hardy, 1.50@2.00; do, fancy, 2.50@3.00.
Persimmons: 1.25@1.50 box.
Pineapples: 4.00@6.00.
Pomegranates: Box, 1.25@1.50.
Rhubarb: Box, 1.50.

CITRUS FRUITS

Oranges: New crop Navels, 100s and larger, 5.00@5.25; 176s, 4.75@5.00; 216s and smaller, 3.50@4.50. Lemons, per box, 3.50@4.25. Lemonettes, 1.50@3.00 per box. Grapefruit, 2.50@3.50 per box for California, 4.50@5.00 for Arizona. Tangerines, 2.00@3.50 box.

DRIED FRUITS

Apples, 1921 (Packers' Quotations):

Choice (in 50s)	10¼
Extra choice (in 50s)	10½

Apricots, 1921 (California Prune and Apricot Growers) Bulk Basis:

	Sun-sweet	San Joaquin
Standard	12	10½
Choice	16	13½
Extra Choice	17	14½
Fancy	19	15½
Extra Fancy	21	....

Peaches, 1921 (California Peach and Fig Growers), Sept.-Oct,-Nov. shipment, guaranteed to January 1:

	Yellow	Muir
Slabs (in 50s)	@9	...@...
Standard (in 50s)	@9¼	...@9½
Choice (in 50s)	@9 7/8	...@...
Fancy (in 50s)	@11	...@12
Extra fancy (in 50s)	@12	...@13
Practically Peeled—		
Standard (in 50s)	@10¼	...10½
Choice (in 50s)	@10 7/8	...@...
Fancy (in 50s)	@12	...@13
Extra fancy (in 50s)	@13	...@14

Cartons, 30 11-oz., per case	3.10
Cartons, 60 11-oz., per case	6.00
Cartons, 24 2-lb., per case	6.50
Cartons, 10 5-lb., per case	6.60

Figs, 1921 (Cal. Peach and Fig Growers), Sept.-Oct. shipment, guaranteed to Jan. 1:

White—	
Standard (in 50s)	6½
Choice (in 50s)	8
Fancy (in 50s)	10½
Bricks, 12 No. 10s	1.10
Bricks, 24 No. 8s	1.80
Bricks, 50 No. 6s	2.80
Bricks, 70 No. 4s	2.95
Layers, 10-lb., 4-row	1.60
Layers, 10-lb., 5-row	1.40
Calimyrna—	
Standard (in 50s)	7½
Choice (in 50s)	10½
Fancy (in 50s)	13
Bricks, 24 No. 8s	2.05
Layers, 10-lb., 6-row	1.90
Black—	
Standard (in 50s)	6
Choice (in 50s)	8
Fancy (in 50s)	11

Raisins, 1921 (Cal. Assoc. Raisin Co.):
Sun-Maid Raisins:
Muscats: 36 15-oz. cartons, seeded, 14¾ lb.; 25-lb. boxes, bakers' seeded, 13 lb.; 25-lb. boxes bakers' seeded, 13½ lb.
Muscats: 25 1-lb. boxes, 2-crown loose, 13¾ lb.; 25 1-lb. boxes, 3-crown loose, 13¾ lb.; 25 1-lb. boxes, 4-crown loose, 15 lb.
Thompson Seedless: 48 15-oz. cartons, unbleached, recleaned, carton, 16 lb; 25-lb. bulk 14½; 25-lb. bakers' graded, unbleached, 17; 25-lb. boxes, choice, sulphur bleached, 18; 25-lb. extra fancy, sulphur bleach, 19; 25-lb, oil dipped, 15½; 25-lb. soda dipped, 15½.
London Layer Raisins: 3-crown London layer: 20-lb. boxes, $3.50 per box; 10-lb. boxes, $1.85; 5-lb. boxes, $1.00.
Clusters: 20-lb carton, clusters, $4.00 per box; 12 2-lb. carton, clusters, $4.80; 4 5-lb. cartons, clusters, $5.50 5-lb. carton, Imperial clusters, $1.50; 80-lb. vineyard run layer, $12.50.
Sultanas: 25-lb. box unbleached, recleaned, 13½ per lb; 25-lb. box, soda dipped, 14½; 25-lb. oil dipped, 14½.
Black Grapes: 25-lb. boxes black grapes, 14½ per lb.
Old Crop:
Muscats: 36 16-oz. cartons, seeded, 14½ per lb.; 25-lb. bakers' seeded, 13; 1-crown loose Muscats, 13½.
Sultanas: Sultans, unbleached, recleaned, 13½ per lb.
Thompson Seedless: Soda dipped Thompsons, 15 per lb.; oil dipped Thompsons, 15; black grapes, 14½.
Prunes: An advance of ½ cent per pound 1921 crop announced by California Prune and Apricot Growers Association. The following scale is now in effect among association members: 30-40, 10¼ cents; 40-50, 8¾ cents; 50-60, 7¼ cents; 60-70, 6¾ cents; 70-100, 6¼ cents.

BEANS

Below California Bean Growers Association shippers' prices choice recleaned:

Large Whites	5.00
Small Whites	4.75
Pinks	4.50
Mexican Reds	4.40
Red Kidney	6.40
Henderson Bush	6.25
Cranberries	6.75
Bayos	5.25
Blackeyes	4.40

NUTS

California Almond Growers Exchange's prices:

Languedoc	14½
Hard Shell	11

Manchurian walnuts, 17.
Chinese peanuts, fy., 10.
Pecans, 25.

HAY AND FEED

California Alfalfa Growers report:
Prevailing prices last week, f. o. b. San Francisco:

No. 1 dairy alfalfa	19.00
Standard	16.00

A. W. Scott Co. says:
Receipts past week, 776 tons as compared with 522 previous week. Market has been steady, trade fairly active. Low grades have been doing better. Local trade quiet but export and coastwise heavier. Interior trading more active. Continued cold, dry weather has forced feeding in almost all sections and the demand has greatly increased chiefly for stock and dairy hay of all kinds. Alfalfa is most active.
We quote today wholesale prices in carload lots as appear from dealers' transfers upon the markets in San Francisco (for prices to consumers, charges of switching, cartage, commission and handling expenses must be added, according to conditions).

Wheat hay No. 1	17.00@19.00
Wheat hay, fair grade	14.00@17.00
Tame oat hay	15.00@18.00
Wild oat hay	11.00@13.00
Alfalfa hay	13.00@16.00
Stock hay	9.00@12.00
Straw	10.00@12.00
Rolled Barley	29.00@30.00
Ground Barley	31.00@33.00
Oats, Rolled Feed	34.00@36.00
Bran and Millrun	25.00@28.00
Middlings	41.00@44.00
Coconut Meal	23.00@26.00
Alfalfa Meal	21.00@23.00
Cottonseed Meal	40.00@42.00
Sugar Beet Pulp	27.00@29.00
Molasses Tanks	21.00 Barr. 25.00
Milo Maize	31.00@40.00
Cornmeal and Cracked Corn	38.00@41.00
Scratch Feed	40.00@43.00

GRAIN

Sales on Grain Exchange:
Barley: Feed, 1.25@1.30; shipping, 1.30@1.45.
Wheat: Mill, 1.85@1.95; feed, 1.85@1.95.
Red Feed Oats: 1.55@1.60; seed, 1.75@2.10.
Corn: California yellow, 1.45@1.50; eastern yellow No. 2, 1.37@1.40; No. 3, 1.36@1.38; No. 3 kaffir, in bulk, 1.43@1.45; white Egyptian, 1.72½@1.77½; California red milo, 1.42½@1.45.

Citrus Markets

Los Angeles, December 28, 1921.

After Christmas sales are holding up exceptionally well and prices realized are generally satisfactory. The Southern oranges are not yet fully colored and the weather has prevented picking. It will probably be a couple of weeks before packing houses get into full swing.
The lemon market is very satisfactory with but few foreigns in sight.

Shipments

Shipments of citrus fruits to date since November 1, 1921, Southern California:

Oranges, 1,126 cars; lemons, 801; total, 1,927. To same date last season: Oranges, 1,135; lemons, 675; total, 1,810. From Central California to date this season: Oranges, 3,821; lemons, 27; total, 3,848. To same date last season: Oranges, 3,449; lemons, 29; total, 3,478. From Northern California to date this season: Oranges. 345; lemons, 3; total, 348. To same date last season: Oranges, 276; lemons, 2; total, 278.

AT THE AUCTIONS

December 20

New York: 27 or., 2 lem. Nav. 3.50@6.75, lem. 3.30@5.50.
Boston: 12 or., 2 lem. Nav. 3.45@5.95, lem. 3.50@5.65.
Cleveland: 9 or., 1 lem. Nav. 2.90@5.25, lem. 3.70@4.80.
Pittsburg: 5 or., 1 lem. Nav. 4.20@5.75, lem. 4.80@5.30.

December 22

New York: 23 or., 4 lem. Nav. 2.70@7.20, lem. 2.70@3.60.
Boston: 6 or., 1 lem. Nav. 3.65@5.95, lem. 4.15@5.90.
Philadelphia: 3 Nav. 3.65@5.10.
St. Louis: 7 or., 1 lem., Nav. 3.65@5.35, lem. 2.80.

December 23

Cleveland: 5 or., 1 lem. Nav. 3.25@5.30, lem. 3.35@4.50.
St. Louis: 3 Nav. 4.25@5.30.

December 27

New York: 30 or., 3 lem. Nav. 3.30@6.95, lem. 3.75@4.40.

The Route Taken by Feed in Stomach of Cow

The correct routes food take in passing through the four stomachs are indicated by arrows. Route 1 commences at the mouth, if the ration has bulk, it expands the gullet and also the slip in gullet No. 6 and drops into stomach No. 1. Later it returns through the same slit to the mouth for rechewing. This second chewing is a thorough grinding between the teeth and every particle is saturated with saliva until of soup-like consistency, is then swallowed, but this soup-like mass does not expand gullet and therefore passed by the slit in gullet No. 6 and takes final or route No. 2.

Boston: 9 or., 4 lem. Nav. 3.00@5.75, lem. 3.20@4.75.
Pittsburg: 7 or., 1 lem. Nav. 3.40@5.70, lem. 3.65@3.90.
Philadelphia: 3 or., 3 lem., 1 mixed. Nav. 3.50@4.60, Arizona Jaffa 3.55, Tange. Ariz. 3.00, lem. 4.40@5.35.
St. Louis: 1 or., 1 mixed. Nav. 4.50@4.65, lem. 2.00@3.05.

INCREASED EFFICIENCY THROUGH GRINDING OF FEED

(Continued from Page 671.)

takes both routes of the digestive system. That makes cattle thrifty.

"Cut and ground corn stover meal is superior to cottonseed hulls and equal to timothy hay. Ground roughage meal prepared from alfalfa, clover, soybean or cowpea hay is equal in feeding value to bran, and worth the same as bran, ton for ton. Roughage meal prepared from cane, sweet sorghum, milo, kaffir or feterita fodders is maintenance ration for beef cattle. Cattle fed only silage crave dry roughage meal, as it counteracts the effects silage has on the digestive system and on the gums. Brood sows require ground legume roughage meal. Ground roughage meal is high in ash, a bone builder.

"The old world feeders for centuries have mixed grains with cut straw and hay. Ground roughage acts as a distributor of the grains. Roughage carries the grain with it into the first stomach of the cow and then later it is regurgitated and then passed into the third stomach and hence takes the proper route through the digestive system, assuring a thorough digestion, making animals thrifty, keeping them in high state of health and condition. Cattle once accustomed to mixed roughage meal no longer prefer ground grains unless mixed with roughage. This fact proves that such preparation is correct.

"The time saved in handling, weighing and measuring alone pays for cutting and grinding, and again in preparing bedding and keeping the manure free from stalks, practically offsets the time and expense of grinding.

"You can make all of your own mixed feed at home by proper planting of crops. You eliminate the purchase of all mixed feeds at a continuous big saving.

"Besides, such feed is fresh, unadulterated, free from mill litter, oat hulls and trash. Transportation cost in the mixed feed bill alone makes the purchase of mixed feeds unprofitable and inadvisable. Feeders who are looking for more profit will prepare their own mixed feed at home. Summing up these advantages, it pays and pays big to manufacture your own mixed feed right at home.

"Roughage meal is in a most convenient form for daily feeding in a uniform manner without waste, as it is usually handled, weighed or mixed. A ton of loose hay occupies about 500 cubic feet of space. Baled hay about 220 cubic feet. Roughage meal requires only 90 cubic feet, therefore is easily stored and if shipped twice as much weight can be loaded per car. Manure from roughage meal is handled easily by carrier or spreader and soil gets immediate fertility, whereas, stalks and stems deteriorate slowly. Roughage meal is in just the right form for use in self feeders.

"Feed and water are the only two sources of milk and butter fat. Unless cows are well fed they cannot produce. When so fed cows will often respond in a manner that may amaze you.

"Variety tends to reduce the cost of the ration, to increase palatability and increase digestibility. Palatability produces a more efficient use of the feed consumed because it stimulates a far greater secretion of the digestive juices. Bulk performs the mechanical function that properly guides all the feed into the first stomach of the cow to be later regurgitated and then take the second route through the digesive system. Again, bulk keeps the feed loose and spongy in the digestive organs so that the digestive fluids can easily penetrate to and act upon every part.

"Alfalfa, cowpea, soybean or clover hay ground into a meal will replace wheat bran as a conditioner. These roughage meals are rich in lime, the principal ash of bones. This ash is largely lacking in bran. The Alabama experiment station effected a saving of 23 per cent in cost of ration by substituting cowpea hay meal for wheat bran. Feeds if possible should be grown on the farm. Leguminous hays, such as alfalfa, clover, soybean or cowpea hay are the best and cheapest source of protein. In addition to their value as food stuff, they greatly improve the soil and crop yields.

"Ground roughage meal and silage work together. Silage is succulent and palatable but not balanced. Feeding dry ground fodder with silage keeps the animals in condition and counteracts all bad effects of silage upon the digestive system. Feeding dry ground fodder prevents overfeeding silage.

"A ground roughage meal from alfalfa, soybean or cowpea hay mixed with ground concentrates can be used to supplement pasture for high producing cows. Such cows will decline in milk flow to a marked extent unless the additional food is furnished them.

"Remember the dairy cow serves you from 12 to 15 years in the dairy. Her production and long life depend to a great extent upon the protection you give her digestive system. She converts from 100 to 200 tons of feeding stuff into milk and butterfat during her lifetime and should not be required to soak and predigest grain for hogs. Only with the proper care and feed can she produce to the greatness of her ability. Poorly nourished cows give birth to weak, puny calves that are hard to raise. Well fed cows give birth to well developed, strong and sturdy calves. Give the cows a chance. With high priced land and declining profits it often is the means of converting loss into profits. They have earned two extra profits, one from increased production, the other from cutting the feed bill by using roughage meal and ground grain."

LIVESTOCK NEWS NOTES

(Continued from Page 685.)

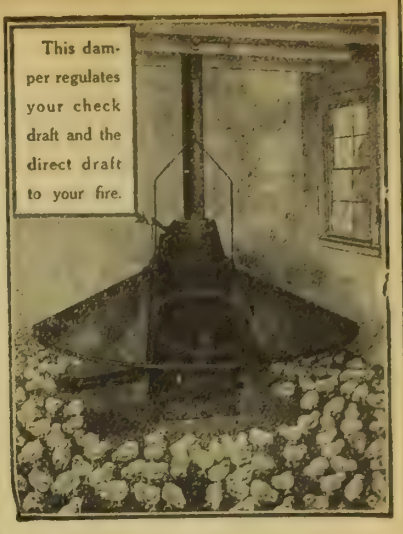
shine and shall have a large tent in case the weather is bad. The sows will be bred to such boars as Pathfinder's Pride, Winsor's Defender and Royal I Am, the latter undefeated grand champion of California."

Aralia De Kol Mead 2nd, after dropping twin heifer calves that have an average of over 1100 pounds butter in one year for their seven nearest dams in the A. W. Morris & Sons Corporation herd, Woodland, was placed on official test and in her first seven days has to her credit 36.53 pounds butter from 607.9 pounds milk and promises to show an increase. She thus becomes the highest record daughter of Segis Pontiac De Kol Burke. She is also the dam of the sensational heifer, Miss Aralia De Kol Mead, sold in the St. Paul National sale to Brentwood Farms, Philadelphia, but now owned by Fred Hartsook, Lankershim. She is also out of the same dam as Sir Aaggie Mead, the $9,250.00 bull owned by W. J. Higdon, Tulare, and F. S. Borror & Son, Tipton. Her last year's calf, a bull that is full brother to the twin heifers dropped this year, is now in service in the University Farm herd at Davis.

WEATHER REPORT

San Francisco, Dec. 24, 1921.

Stations	Rainfall Week	Season	Norm.	Temp. Max.	Min.
Eureka	2.80	11.29	15.13	58	38
Red Bluff	4.52	6.75	9.03	54	28
Sacramento	2.02	3.81	6.32	54	40
San Francisco	2.93	5.35	7.25	56	45
San Jose	3.27	5.38	5.45	58	38
Fresno	2.70	3.25	3.09	58	42
San Luis Obispo	5.38	6.10	5.09	58	44
Los Angeles	5.69	6.95	4.39	62	46
San Diego	5.74	7.55	2.64	64	49



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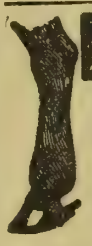

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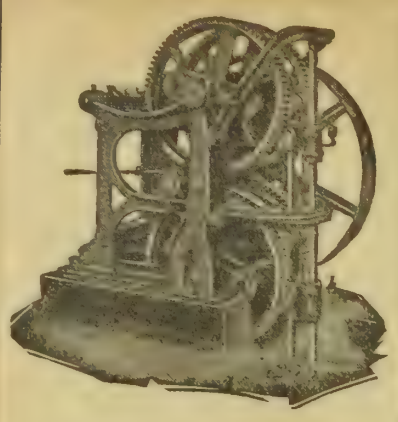

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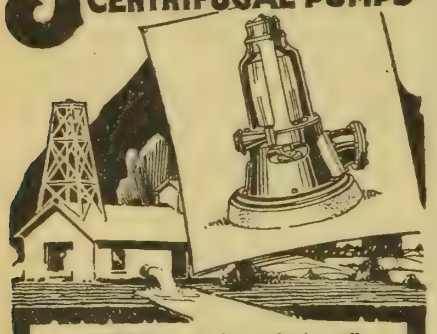

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RELATION OF THE HONEY BEE TO DECIDUOUS FRUIT PRODUCTION

(Continued from Page 673)

many varieties of fruits, and are very helpful with nearly all others. Among the fruits which are benefited by bees are almonds, apples, cherries, pears, plums and prunes. Shy bearing in almonds, for a long time attributed to cold weather and similar causes is largely due to lack of cross pollination. In Bulletin 306 of the University of California, Professor Tufts has shown that all varieties of almonds are self sterile. He recommends interplanting proper varieties and the use of one colony of bees per acre. In bulletin 307 he makes the same recommendation for pears. In various parts of the United States apples have been greatly aided in setting crop with bees because so many varieties of the fruit are self sterile. Likewise, cherry varieties as shown by work in Oregon, Idaho and California are all self sterile. The writer has observed many demonstrations of the value of bees in cherry orchards where the crop was formerly almost nil. Japanese plums are likewise self sterile with but few exceptions and are in great need of effective cross pollination. The same is true of most European plums. Among prunes two well known varieties are self sterile and two are self fertile. The results as reported in Bulletin 294 of the California experiment station show that the Imperial prune, long notorious as a shy bearer, is wonderfully benefited by bees and even the French prune, long known as a consistent bearer, is caused to produce larger crops by these same insects. In other sections bees are helpful in producing different crops. It is reported that cranberry yields are greatly increased by the use of bees and the importance of the same insects in growing tomatoes and cucumbers under glass is well known.

On the other hand apricots according to some observers are pollinated with their own pollen before or soon after the blossom opens. It is also known that they are self fertile and able to set fruit with their own pollen. Whether bees would aid this fruit or not is a question that has not been answered as yet. The same situation exists with many varieties of peaches. The flower is so constructed that self pollination may take place easily. The writer has also observed that the peach flowers are very attractive to bees and are visited by them in great numbers. What effect the work of bees may have on this fruit is not known, but most certainly there seems little cause for worry as great plantings of a single variety of this fruit are known to produce regularly and abundantly.

The importance of the element of time as previously mentioned in pollination of flowers cannot be overestimated. Distribution of pollen for a given variety must be made in a very few days. If delayed, lack of set may result for reasons already explained. It is in this case where the bee is especially valuable. Other insects might succeed in visiting every flower if given time enough, but the bees due to their untiring efforts seem to accomplish this work in the shortest possible time. The consequent mixing and distribution of pollen as soon as the pistil is ready to receive it is the thing that makes for big production. Large numbers of bees are needed in cloudy or wet and rainy seasons where every hour of sunshine counts.

Preference Shown by Bees

Bees have preference for particular varieties, possibly the same as you and I have. Some kinds are accepted until others open, when the former are deserted. There is not much data on this point and it is of more concern to the grower than to the beekeeper. It has been reported that in some sections bees have been observed to desert cherries for apples. In my own experience I have observed that early Japanese plums are not visited as frequently as the later varieties. For example, Formosa and Gaviota are both shunned when the European kinds begin to open. Scanty production of pollen and honey in these two varieties may be the cause. Bees are said to work satisfactorily on strawberries and are especially fond of raspberries. In California because of their long blooming season the latter fruits are of considerable value as honey plants.

Some growers have their own bees but most prefer to rent for the season. The rental is usually made with the understanding that the owner is to place the bees where desired and to remove them promptly after blossoming season in order not to interfere with other orchard operations. The best method of distribution is to place the hives singly throughout the orchard. This method insures a more even set of fruit than is the case where 10 or 20 colonies are all put in one place. It is also well to put the hives near the center of the orchard so the bees will work near at home as much as possible. The average grower is not altruistic to the extent of paying for an increase in his neighbor's crop. Ordinarily about one hive to the acre should be sufficient although excellent results have been obtained when less were used.

Increased Yield Due to Bees

Noticeable increases in yield have invariably followed the use of bees. What these increases are in actual figures is hard to secure. The average grower knows he harvested a larger crop than he did before and that is about all. One or two examples, however, will suffice. In 1916 one grower with 180 acres of prunes produced 344 tons of dried fruit. The following year when 115 colonies of bees were used the crop was 432 tons, an increase of nearly 100 tons. Another grower on seven acres of cherries with 17 tons in 1918 raised his yield to 52 tons in 1920 and to 49 tons in 1921 by the use of ten colonies. Other growers have undoubtedly had similar experiences elsewhere.

Quality of Cross Fertilized Fruit

With most of stone fruits there is no outward sign showing whether the fruit has been properly fertilized or not. If the fruit matures and ripens it is usually considered to have been fertilized although no one ever thinks of cracking the pit to see if the kernel is developed or not. In our experiments plums which were self pollinated by hand showed no difference in size, shape or quality from those cross pollinated. The plant breeder would be interested in determining how seeds would germinate and grow from the various combinations. The grower, however, is satisfied when the fruit remains on the tree to maturity. With apples and pears the case is somewhat different. Instead of one pistil to each flower there are five. All five must be pollinated and the respective eggs fertilized to secure a perfect fruit. Very often due to lack of pollination, only three of the five carpels or divisions in the core of the apple have perfect seeds while the other two have not. The fully developed portion of the fruit corresponds with the side having the perfect seeds. The Cornell experiment station has shown a direct relation between the number of seeds in an apple and the percentage of June drop. This drop always consists of the fruits having the smallest number of seeds. In other words, the larger the number of seeds the better the chances for that fruit to remain on the tree until mature.

In California where Barlett pears are grown extensively a great portion of the fruit is found to be practically seedless and coreless. For reasons as yet unexplained this pear under our conditions is seemingly able to set and mature fruit whether it contains seeds or not. The seedless quality of this variety, it is argued, constitutes a distinct advantage as the core is much smaller and the flesh is not so gritty. These factors are advantageous to the canner and grower where the product is consumed soon after picking. In the demand for a long keeping pear, however, some interesting points have been developed in this connection. The University of California has recently shown that the Barlett pear with perfect seeds keeps from two to three weeks or more longer than the seedless ones picked at the same time. The advantage of cross pollination for producing a long keeping pear is obvious.

Injury Caused by Bees

The average grower in general has two grievances against the bee. One is the attacking and injuring ripe fruit on the trees and in the dry yard and the other is in the spread of certain diseases, notably pear blight. Usually the sight of several bees gathered around a split or puncture in a ripe fruit is enough to cause the grower to want to rid the entire country side of these obnoxious visitors. The benefits received during the blossoming season a few months previous are entirely forgotten. It has been demonstrated that bees are not the primary cause of injured fruit. The first damage is usually done by birds or insects which have piercing mouth parts. The honey bee comes along later and gets the blame. Actually the damage, if any, started by bees is so slight as to be practically negligible.

With pear blight the case against the honey bee is somewhat stronger. Experiments have shown that bees do carry blight and that the blight organism remains alive in the hives for several weeks after it has been brought there. However, to my knowledge it has never been definitely proved that bees prefer the sticky exudate of the blight canker to the honey in the blossom when the latter is available. It may be that the blight organism is picked up accidentally and thus transferred to the blossoms. Because of its size the honey bee seems to be the most frequent visitor to pear trees, and hence is judged guilty of doing all of the harm. As a matter of fact other insects such as thrips, aphis, ants and beetles of various kinds are as guilty as the bee. If they were not, how is blight in young twigs and on young trees without blossoms explained? The solution to this difficulty is to use more care in removing old holdover cankers which form sources of infection. The honey bee must be given credit for performing so faithfully the function of distributing pollen, and should be relieved of the stigma of being the chief carrier of blight and general nuisance at harvest time.

Book Review

FARM BUREAU MOVEMENT

"The Farm Bureau Movement," by Orville Merton, with introduction by President Howard of the American Farm Bureau, published by the Macmillan Company, New York, at $2.00.

This is an excellent presentation of the history of the beginnings and of the present powerful position occupied by the farm bureau. It is written in a spirit entirely friendly to the movement and the tone of it may be appreciated from this sentence picked at random in the middle of the book: "And let me repeat, the combining of time and of effort, of capital and of commodity — cooperatively — in 'c-o-o-p-e-r-a-t-i-o-n' — not 'corporation,' is not alone our privilege—it is our right."

In President Howard's introduction we note: "The consumer is apparently torn between the hope that organized agriculture will mean more economical marketing and the fear that it may mean monopoly, with resulting high prices. The manufacturer and the merchant are wondering whether the movement means for them bigger markets or restricted activity. The politician is frankly alarmed at what he calls the solidarity of voting strength which he sees looming ahead."

The book is not largely illustrated though there are a few plates mostly of portraits. There are nearly 300 pages in the 22 chapters making up the book. These chapters touch upon the "Background," giving the beginnings and early organization efforts, and at some length upon farm bureau aims, a frank discussion of the strength and weakness of the organization and finally ends with a discussion of "The Farm Bureau a Force in National Affairs."

A few years ago farmers said a gas tractor would not do for threshing, it could not be depended upon, an old steam engine was all that could do the work. If one wanted to find a steam engine today he would have a hard time finding one at work, and if it was located it would be an old one. Practically all the threshing, silo filling, feed grinding and power units are run by gasoline or kerosene tractors.

10,000 DOZEN EGGS FROM 600 HENS

(Continued from Page 673.)

third week it was before them all the time. Overfeeding of mash is believed by both Mr. Wylie and Mr. Holloway to be the most frequent cause of coccidiosis, hence the care with which it is used at first.

No nursery mash was used, the chicks being put on a growing mash at the start and kept on it till they were three and a half to four months of age. At this time, when combs were well developed, and a few eggs dropped, the growing mash was removed and the pullets were put on a maintenance mash of bran and bone meal, as recommended by the poultry division of the state university. This maintenance mash was kept before them till about the end of the sixth month, when the change to laying mash was begun by putting laying mash on top of the maintenance mash in the hoppers. The pullets quickly ate through the laying mash to the bran underneath, thus automatically diluting their own mash. By this time many were laying, and between the sixth and the seventh month all got down to work. The grain mixture is changed from time to time, but has consisted for the most part of wheat, milo and barley. About one and a half ounces are allowed each hen daily.

Greens are an important part of the ration of both chicks and hens. The chicks are started on cut alfalfa, chard and lettuce, and alfalfa, cut green barley and slabs of spineless cactus form the green ration of the hens. On his five acres Mr. Wylie raises practically all the greens for his flock of 1,200, besides allowing large yards which can be planted to barley from time to time, and room for fruit trees.

Damp Yards for Dusting

Droppings boards are cleaned and disinfected with carbolineum every other day. Once a week the droppings in the runs are raked up and the runs wet with the hose. This moist dirt in the yards gives the hens a good place for dusting and saves the labor of using louse powders.

A Big Hatchery

After leaving the Wylie place the party made a visit of inspection to the Holly Hatchery, where 28,000 eggs were already in the big incubators and new incubators being installed to increase the capacity of the plant from 140,000 to 200.000.

An air washer has just been installed which will cool and clean all the air which passes into the hatching rooms. A cooling space between the double walls of these rooms, with carefully arranged air shafts, insures an even temperature, no matter what the weather may be, and the ventilation is so perfect that the air is changed every 15 minutes. The incubators are heated by natural gas and no egg of a greater age than nine days is ever set. By this careful attention to details Mr. Holloway is able to hatch 75 per cent of the fertile eggs in his incubators.

Most of the eggs incubated in the hatchery are bought from the big breeders of San Gabriel and Van Nuys, but a few are provided by the thousand odd hens on the Holly ranch, where the houses, although 12 years old, still conform to the plan generally adopted for the San Fernando Valley, a long house with sections 16 or 18 by 20, and boarded up four feet from the floor in front to keep out drafts. A board awning in front keeps out sun and rain and can be adjusted at will. The green feed hopper used in these houses conforms to the plan worked out by Messrs. Gordon and Burgess for the Pomona laying contest, and consists of wire through which the hens peck at the alfalfa, with a sort of wooden drawer below. Both wire and drawer just fit under the droppings board and may be drawn out for refilling.

In the hatching rooms great stress is laid on the frequent and thorough turning of the eggs. Slatted trays are used and the eggs, which lie for convenience with the small end down, are turned with a jerk of the wrist of the attendant. Clear eggs and dead germs are tested out by electricity, and the live germs which remain are exercised by moving from place to place on the tray in order to make sure that all receive the same amount of heat.

The end of a perfect day for the 20 odd guests on this occasion was the annual banquet of the Van Nuys chamber of commerce, of which Mr. Holloway is president.

LEGBANDS FOR POULTRY

The most satisfactory means for identifying individual birds belonging to either the backyard poultryman or the owner of a farm flock is the numbered legband.

Every fall an increasing number of poultry raisers are culling their flocks to eliminate the boarder hens. By this process the best producers are retained and become the breeders for the following spring. In some cases another special selection is made to secure birds possessing show room quality as well as laying ability, a combination not impossible and exceedingly desirable.

The question arises in either case as to a method for identifying individual birds. There are various ways in which this may be done, but perhaps the most satisfactory is the numbered legband. Plain aluminum bands serve very well for some purposes, but the colored aluminum-celluloid bands not only give the bird a number, but the various colors in which they come offer an opportunity to record the age of the fowl as well. For example, this year's pullets may be banded with red, next year's with blue and the third year's with green. The three colors will be sufficient, for it is seldom profitable to keep hens over three years.

Such markers may also be used to indicate breeding or matings, to differentiate one's hens from a neighbor's and to protect in a measure from chicken thieves. For the chicks various colors in celluloid spirals or rings are on the market and the larger sizes may be used for the hens. Their chief advantage is the low cost. Considering the small expense and effort involved the use of such markers is bound to be a profitable departure for either the backyard poultryman or the owner of a farm flock.

HONEY FOR BRITISH MARKET

In a recent article in an English paper by a British honey buyer we find:

"Dairymen, grocers, fruiterers, and in many cases druggists, find a ready sale for honey that is attractively packed and the quality of which is above suspicion. There is no more convenient package for export to the English market than cases, each containing two 60-pound tins, although I would prefer to purchase honey in 5 or 6 hundredweight tierces, being more conveniently handled where large quantities have to be packed. Honey for the English market must be perfectly clean in flavor, strong or herby flavors being disliked and therefore damaging to the trade. The favorite package for Cuban honey weighs about 5½ to 6 hundredweight (the English hundredweight is 112 pounds). Honey from Jamaica usually arrives in casks containing about 3 to 3½ hundredweight, while Chilian is usually packed in barrels of about 1½ hundredweight. Californias, New Zealand and Australian arrive in cases each containing two 60-pound tins.

"The tins must be clean and sufficiently strong to withstand rough usage. Cases should be made of thoroughly dried, sound timber, with the ends, tops and bottoms each made in one piece. There is no economy in using cheap cases, and to use dirty tins must result in great loss. The weight of the packages should be clearly marked outside each container where they are not uniform. Net, tare and gross weight should be shown, and where the name of the producer is also shown it gives the buyer greater confidence. Quantities of honey arriving in casks are in a very dirty condition, often containing thousands of dead bees and other objectionable rubbish. The English are very fastidious and will not purchase honey again, possibly for many years, if once they have been served with honey that has a nasty or unclean flavor. There is a great demand for best honey, and hundreds of orders are turned down through insufficient supplies of the quality we need.

"Most of the honey sent to England is consigned to merchants who usually place it in the hands of brokers for sale, but it would seem to us that it would pay better to make direct consignments to a firm which had the nceessary organization for selling, and machinery and appliances for packing."

CUBA SHIPS HONEY HEAVILY TO UNITED STATES

Cuba produces annually from 25,000 to 30,000 barrels of honey. Assuming that each barrel holds 50 gallons and that the honey weighs 12 pounds to the gallon the total outturn of the island is then 15 to 18 million pounds. This compares with an estimated production in the entire United States of around 250,000,000 pounds. Honey is gathered in Cuba from October to May, and colonies are found throughout the entire island.

As practically no honey is consumed locally Cuban beekeepers depend on the export trade for their market. Strained or extracted honey is the only kind produced. It is shipped largely in second hand barrels and shipments are usually of 50 barrels or more.

The United States has been a heavy purchaser of Cuban honey. During the year 1918 out of a total export of 22,556,923 pounds the United States took 12,420,423 pounds. The United Kingdom was second with over 8,000,000 pounds. The year following the total quantity brought into this country had dropped to 4,461,165 pounds out of a total of 10,340,552 pounds exported from Cuba.

POTATOES SOURCE OF FOOD

"Potatoes have become one of the important sources of food," stated Dean Hunt at the potato grower's conference held at the college of agriculture of the University of California. They have made possible a density of population, perhaps three times as great as was formerly possible. Indeed, since their introduction into Europe, the population has increased in number more than six times. In the five years preceding the war the average European yield per acre of bread grains, wheat and rye, was 815 pounds; of potatoes, 9,000 pounds. It is only during the last two centuries that potatoes have been grown extensively in Europe. Now, Europe produces ten times as many potatoes as North and South America combined. The potato with other American plants furnished the material foundation for the Renaissance. It has been one of the most important revolutionary forces in the world. It deserves your best endeavor."

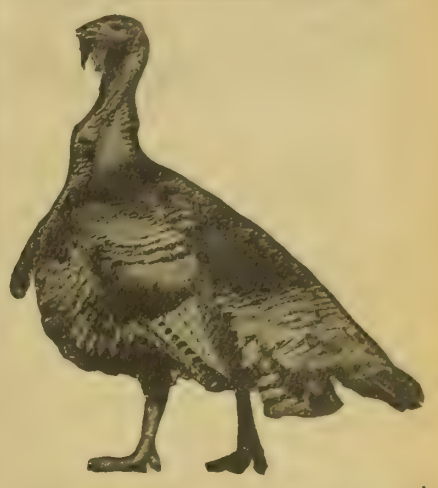
The name of "spuds" or "Irish" potatoes is a brief remembrance of the days when the white potato practically saved the people of Ireland from starvation. Although the Irish people have a good reason to be fond of this potato its real origin goes back to America.

It is estimated that more than 14 per cent of all California farms grow potatoes. However, there has been a 16 per cent loss in production in the last ten years due to diseases found in the vegetable. Circulars 161 and 200 of the University of California agricultural experiment station describe the growing of potatoes.

LIQUID MANURE

Soak a sugar bag of fresh cow, pig or poultry manure for a week in 50 gallons of water. Use this at the rate of one part for three parts of fresh water. The same bag of manure will make another 50 gallons by using one part of the liquid to one part of fresh water. A third quantity of 50 gallons may then be prepared and used undiluted. Each 50 gallons should be a week old before using.

This form of liquid manure is all that is necessary for most growing crops used weekly. Apply four gallons to every 18 feet of a running row. No further stimulants need be added. —E. N. Ward, Botanic Gardnes, Sydney, Australia.



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Our customers contest which closed September 30, 1921, showed Farm No. 11 with 600 pullets hatched February, 1920, laid 217.09 eggs each, all in one flock. Can you beat this record?
We supply you stock bred for over 10 years for heavy production, incubated in the finest hatchery with perfect ventilation. Chicks delivered in perfect condition by our two specially constructed and ventilated auto delivery cars; capacity, 15,000 chicks at one load; or packed for express shipment by an expert who had 15 years in the Express service. Can any other Hatchery or Breeder offer you such service and quality chicks?
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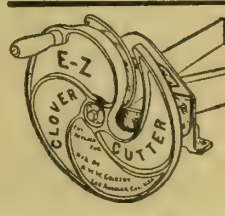

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BIG BLACKBERRIES

Huge blackberries growing to a length of 2½ inches and a breadth of 1½ inches have been discovered in Colombia, South America. Plants bearing clusters of these berries have been found by government agricultural explorers at an altitude of 10,000 feet. The plant is vinelike, half climbing, half self erect and in some cases grows to a height of 10 feet. Although only four degrees north of the equator, the altitude and the clouds drifting up the Magdalena Valley and depositing their moisture, make the climate cool and moist throughout the year; and for this reason it is thought the plants may be transplanted to the United States. The berry is not quite black in color but verges on a dark red. The taste is said to be surprisingly agreeable and pleasant.

SPROUTING POTATOES

Last year the island of Jersey exported 60,000 tons of potatoes and every one of the seed potatoes planted was sprouted in a standard size tray or shallow box, the growers using hundreds of thousands of these boxes.

The seed potatoes are harvested during the first half of July. They are carelessly gathered in the boxes or trays and left exposed for about a month. This fully ripens them and of course they turn green. At the end of a month they are stood in the boxes, sprouting end uppermost, and removed to a cellar or room wholly dark, temperature about 75 degrees Fahrenheit. In about two weeks sprouts are formed a quarter inch long, when the boxes are again moved to full light and remain there three weeks to harden and potatoes are then planted. Later plantings, for home consumption, are not so treated, and yield a heavier crop, but the Jerseyite is chiefly engaged in growing new potatoes for midwinter export trade.

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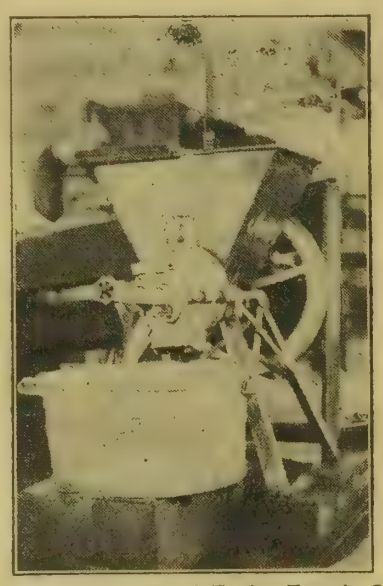
You can turn $12 a ton dark barley hay that has been wet into $20 or $25 a ton pulverized feed at a cost of not more than $2.50 per ton with a LETZ DIXIE FEED MAKER.

You can sell alfalfa hay that has been made into the finest kind of alfalfa meal with a LETZ DIXIE FEED MAKER for double what the alfalfa would bring as hay, especially if the hay has been rained on.

THE LETZ DIXIE will grind any hay into meal for less than you pay for baling.

Actual test records are numerous where feeding costs were reduced 50 per cent by the proper preparation of the feed given stock by proper cutting, grinding and mixing by one of the 11 sizes and 22 styles of LETZ feed cutters and grinders, there being a size and model to cut, grind and mix all the principal feed crops grown.

And the proper cutting and grinding of roughage increases its food value to such an extent that not nearly so much grain is required.



Interior view part of Taylor Tamale Co. factory where the LETZ successfully grinds cooked corn.

THE AVERAGE CALIFORNIA RANCH CAN MORE THAN PAY FOR A LETZ DIXIE FEED MAKER IN THE SAVING AND EFFICIENCY OF FEED CUT AND GROUND FOR THE WORK STOCK ALONE.

With a Letz Dixie you can have a mixed feed factory right on your ranch. You can manufacture mixed feed at $1.50 to $3.00 per ton, including labor, fuel, upkeep and depreciation. You no longer have to pay extra prices for ready mixed feed, manufacturer's profits and transportation costs—and you know what is going into your feed.

EVERY DAIRY SHOULD HAVE ONE

No dairy is complete without a LETZ DIXIE. Dairy cows do best on a bulky ration. Our book "Scientific Feeding" goes thoroughly into that, as well as explaining why various mixtures or feeds give best results for horses, mules, cows, hogs, sheep and chickens. Poultrymen who write us can obtain LETZ literature on feeding poultry written by men of national reputation. The books are sent free.

HOW TO ACCOMPLISH THESE RESULTS

But you cannot accomplish these savings and obtain these results with just any kind of a grinding machine. The LETZ FEED MAKERS have achieved the acknowledged supremacy in FEED MAKING MACHINERY BECAUSE OF CERTAIN CONSTRUCTION FEATURES NOT EQUALED OR APPROACHED BY ANY OTHER FEED GRINDING MACHINERY.

Among these exclusive features are the following:

LETZ mills are equipped with special plates that cut, grind and pulverize all in one operation. The pulverizing plates with thousands of keen cutting, scissor-like edges beat all other processes in fine cutting, light running, durability and capacity. Everything grindable is handled in ONE OPERATION whether wet, dry or oily without clogging. One set of LETZ plates are guaranteed to outwear three ordinary sets.

LETZ mills are made with only one shaft drive—heavy and unbreakable with plenty of bearings to insure strength.

Under the cutters the chopped hay passes through an adjustable screen. Roughage cannot reach the grinding plates until fine enough to pass through the screen.

From the cutting hopper the finely cut roughage is conveyed into the mixing hopper, where it is thoroughly mixed automatically, with whatever feed stuffs are in the hopper.

In the bottom of the mixing hopper a steel casting with heavy, sharp, curved knives crushes into fine meal, ear corn, kafir corn or large feed stuffs. The mixing hopper is provided with shaft preventing ear corn and similar material from bridging the hopper.

The roughage is thoroughly cut, recut and crushed and then forced fed into the grinding chamber where the especially designed grinding plates—an outstanding feature of all LETZ mills—cut, shear and pulverize the feed at a surprisingly large capacity and with comparatively small power.

Do You Want to Make More Money Out of Your Farming Operations?

LETZ PATENTED PLATES CUT AND SHEAR THE GRAIN AND ROUGHAGE LIKE A PAIR OF SCISSORS. They do not crush or mash. That is why they have exceptional capacity, long life, require less power and have the ability to handle material in any condition—wet, dry or oily—ABSOLUTELY WITHOUT CLOGGING.

Near Los Angeles a LETZ mill crushes WET COOKED CORN used in the preparation of one of California's finest products—Taylor's Tamales.

At Covina the San Gabriel Valley Milling Company uses a LETZ DIXIE to manufacture poultry and dairy feeds. Near Long Beach I. Stewart is converting $12 a ton barley hay that was rained on in shock into $20 to $22 a ton ground feed. Read letters from these satisfied users printed here.

We haven't begun to tell you all the features of this money making equipment here. More information is contained in our catalogue and our book "Scientific Feeding." We want every farmer, stockman, poultryman and orchard or grove owner to have this book. It is free. Send us your name and address on the blank below.

This is the LETZ DIXIE FEEDMAKER on the ranch of I. Stewart, where the mill is paying for itself by making fine feed out of barley hay. The ground feed is worth $8 to $10 more per ton.

SIX WAYS TO MAKE MORE MONEY

(1) Save all the crop—grain, stems, stalks, vines and all—they are valuable.
(2) Grind the feed instead of feeding it as raised. It increases the efficiency and value of it.
(3) Operate your own feed manufacturing plant—save hauling and manufacturer's profit.
(4) Farm for feed instead of farming with feed. Iowa's wealth is due largely to scientific feeding.
(5) You cut down the grain required by feeding a mixture that is prepared the way stock likes it.
(6) By grinding fertilizing material it becomes much more quickly available to plant growth, thereby increasing its value.

Letters from California LETZ Owners

Long Beach, Calif., Dec. 21, 1921.
Warr Implement Co.,
Los Angeles, Calif.
Gentlemen:
I bought a Letz Feed Grinder to grind barley hay that had been wet in shock and found that the mill is just what I want.
The mill cuts the straw and grinds the kernels, making fine feed out of it. The mill gave no trouble although the barley was damp and tough. The stock seems to relish the ground feed. Grinding increased the value of feed $8.00 to $10.00 per ton. Very truly yours,
(Signed) I. STEWART.

Covina, Cal.,
December 21, 1921.
Warr Implement Company,
110 North Los Angeles St.,
Los Angeles, Calif.
Gentlemen:
We find our Letz No. Forty Mill very rapid and efficient and for the work we have to do better than any other we have tried.
Respectfully yours,
SAN GABRIEL VALLEY MILLING COMPANY,
(Signed) By L. L. Ratekin, Secy. M.

Warr Implement Co.,
110 North Los Angeles St.,
Los Angeles.
Please send without cost to me The LETZ book on "Scientific Feeding" and a LETZ DIXIE FEED MAKER Catalogue.

Kind of Ranch .....
Head of Stock .....
My Name .....
My Address .....

Warr Implement Co.

110 North Los Angeles St. Los Angeles

Southern California Distributors

The Lewis Co., Lewis Bldg., San Jose

California Distributors LETZ MFG. CO.

Poultry raisers should write for important LETZ literature on "Feeding for Earlier Poultry Profits." Citrus and orchard owners can save money on fertilizers by using a LETZ mill.

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